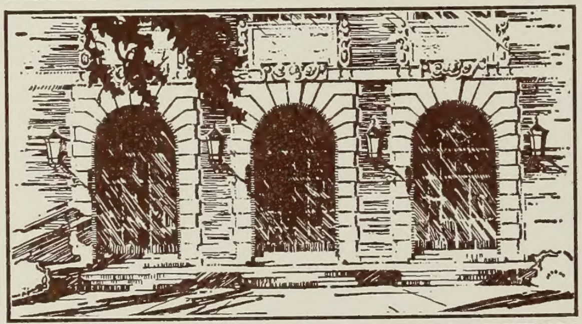
LIBRARY OF THE
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

616.305
GA
v.5
no.7-12



LIBRARY U. OF I. URBANA-CHAMPAIGN

[illegible]

LIBRARY U. OF I. URBANA-CHAMPAIGN

16.305
A

Vet Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY
ABSTRACTS
AND
CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

THE LIBRARY OF THE
OCT 29 1970
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN
DD

LIBRARY U. OF I. URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

JULY 1970
VOLUME 5, NO. 7
4688–5408

Volume 5, No. 7 **Abstract and Citation Nos. 4688 – 5408**

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed
by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager

for the

National Institute of Arthritis and Metabolic Diseases

pursuant to Contract Number NIH-70-2040
with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metabolic Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversity of publications in the area of gastroenterology makes it imperative that an appropriate service be available to investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and comments for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and author indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

616.305
GA
v.5
no.7-12

CONTENTS

PRE-CLINICAL SCIENCES

	Cross Reference Abbreviations	Abstracts, Citations	Page
Morphology, Cellular Structure and Histochemistry	(P:Morph)	4688-4753	479
Absorption—Excretion—Transport	(P:Absorp)	4754-4785	488
Motility	(P:Motil)	4786-4804	492
Secretion and Metabolism	(P:Secr)		
Stomach	(P:Secr:Stom)	4805-4811	496
Pancreas	(P:Secr:Panc)	4812-4817	496
Hepatobiliary Tract	(P:Secr:Hepatobil)	4818-4862	497
Intestine	(P:Secr:Int)	4863-4870	505
General	(P:Gen)	4871-4886	506
DIAGNOSTIC PROCEDURES	(Diagproc)	4887-4954	508

GASTROINTESTINAL DISEASES

	Cross Reference Abbreviations	Abstracts, Citations	Page
Esophagus	(D:Esoph)	4955-4975	513
Stomach and Duodenum	(D:Stomduo)	4976-5018	514
Peptic Ulcers	(D:Stomduo:Peptulc)	5019-5041	516
Small Intestine	(D:S.Intest)	5042-5064	518
Regional Enteritis	(D:S.Intest:Regent)	5065-5070	519
Malabsorption	(D:S.Intest:Malabs)	5071-5089	520
Large Intestine	(D:L.Intest)	5090-5121	522
Ulcerative Colitis	(D:L.Intest:Ulccol)	5122-5133	523
Granulomatous Colitis	(D:L.Intest:Grancol)	5134-5135	524
Pancreas	(D:Pancreas)	5136-5147	525
Pancreatitis	(D:Pancreas:Pancreat)	5148-5163	526
Liver and Biliary Tract	(D:Livbil)	5164-5220	527
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	5221-5250	532
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	5251-5273	534
Chronic Hepatitis	(D:Livbil:C.Hep)	5274-5276	537
Cirrhosis	(D:Livbil:Cirrh)	5277-5299	537
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	5300-5330	540
General	(D:Gen)	5331-5396	542
Parasitology	(D:Gen:Parasit)	5397-5408	545

AUTHOR INDEX

SUBJECT INDEX

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. For journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medical Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans
Ar.	Arabic
Bul.	Bulgarian
Ch.	Chinese
Cz.	Czech
Dan.	Danish
Dut.	Dutch
E.	English
Eston.	Estonian
Fin.	Finnish
Fl.	Flemish
Fr.	French
Ger.	German
Gr.	Greek
Heb.	Hebrew
Hun.	Hungarian
Ic.	Icelandic
In.	Indonesian
It.	Italian
Jap.	Japanese
Kor.	Korean
Latv.	Latvian
Lith.	Lithuanian
Nor.	Norwegian
Pol.	Polish
Por.	Portuguese
Rum.	Rumanian
Rus.	Russian
Ser.	Serbo-Croatian
Sl.	Slovak
Sp.	Spanish
Sw.	Swedish
Th.	Thai
Turk.	Turkish
Uk.	Ukrainian
Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
μg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD$_{50}$	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
μM	micromolar
mC,μC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transaminase
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

4688 DISULFIDE REDUCTION IN RAT LIVER: I. EVIDENCE FOR THE PRESENCE OF NONSPECIFIC NUCLEOTIDE-DEPENDENT DISULFIDE REDUCTASE AND GSH-DISULFIDE TRANSHYDROGENASE ACTIVITIES IN THE HIGH-SPEED SUPERNATANT FRACTION. *(E.)* Tietze, F. (Natl. Inst. Arthritis Metab. Dis., Natl. Inst. Hlth., Bethesda, Md.). *Arch Biochem Biophys* 138(1):177-188, 1970.

The subcellular distribution and metabolic characteristics of microsomal disulfide-reducing systems were studied in rat liver and other mammalian tissues, and the presence (in the high-speed supernatant fraction of rat liver) of enzyme systems catalyzing the reduction of disulfide bonds of proteins was investigated. Enzyme extractions and assay procedures were carried out at pH 7.5 in 0.1M phosphate or Tris buffers containing 5mM EDTA. Subcellular fractions of fasted male Sprague-Dawley rats were prepared by differential centrifugation of homogenates in 0.01 M Tris - 0.25 M sucrose. Enzymatic reduction of disulfide bonds by reduced pyridine nucleotide was determined by measurement of the formation of sulfhydryl groups with 5,5'-dithiobis-(2-nitrobenzoic acid) or by measurement of the rate of oxidation of reduced pyridine nucleotide by differential spectrophotometry at 340 mμ. Dialyzed preparations of the 100,000 g supernatant extract of rat liver were found to promote the reduction of the disulfide bonds of protein (insulin) and nonprotein substrates when supplemented with NADPH, but not with NADH. The addition of NADPH to a mixture of the extract and insulin resulted in a steady rise in total sulfhydryl content of the reaction mixture from a baseline value of 0.6 μmoles sulfhydryl to nearly 2.5 μmoles in 4.5 hr, while addition of NADH resulted in a value of only 0.7 μmoles of sulfhydryl content in 4 hr. Extracts of the microsomal and mitochondrial fractions were inactive in reducing sulfhydryl bonds in the presence of both NADPH and NADH. Spectrophotometric measurements (at 340 mμ) of the utilization of reduced pyridine nucleotides in the insulin-microsomal supernatant reaction mixtures indicated that the addition of insulin to the mixture resulted in a linear increase in relative absorbance (0.35 O.D. units in 8 min) in the presence of NADPH, but no change in absorbance in the presence of NADH. Extension of these spectrophotometric studies to reactions with cystine and lipoic acid further demonstrated the specificity of the reaction. The D- and L- forms of cystine were reduced by the enzyme system at equal rates. The supernatant fraction also exhibited an arsenite-insensitive GSH-disulfide transhydrogenase activity capable of catalyzing the reduction of both protein and nonprotein disulfide substrates by GSH when coupled with NADPH and glutathione reductase.

4689 DISTRIBUTION OF PHOSPHOPYRUVATE CARBOXYLASE IN PIG LIVER. *(E.)* Swiatek, K. R. (U. Illinois Coll. Med., Chicago), K. L. Chao, H. L. Chao, M. Cornblath and T. Tildon. *Biochim Biophys Acta* 206(2):316-321, 1970.

The cellular distribution and kinetics of phosphopyruvate carboxylase were studied spectrophotometrically in nuclei, mitochondria, microsomes and particle-free fractions of liver from fed and fasted (72 hr) pigs. In both fed and fasted pig livers, the cellular distribution of phosphopyruvate carboxylase was 60-70% in the soluble cell fraction and 15-25% in the mitochondrial cell component. The specific activity (μmole oxaloacetate/mg protein/min) of phosphopyruvate carboxylase in the soluble and mitochondrial fractions from fed pig liver were measured as 0.065 and 0.096, resp., while in the fasted pig liver, a two-fold increase in the specific activity occurred; activity in the soluble fraction measured 0.176 and mitochondrial fractions 0.181. The total protein content of both the soluble and mitochondrial cellular fractions were essentially identical in livers from fed and starved animals. The K_m constants for pig phosphopyruvate carboxylase at pH 6.4 obtained from 100,000 x g cell supernatant were phosphoenolpyruvate, 6.65×10^{-4} M; Mn^{2+}, 8.33×10^{-4} M; $NaHCO_3$, 1.47×10^{-2} M; and IDP, 5.4×10^{-5} M. Phosphopyruvate carboxylase activity in supernatant fractions prepared from livers stored at -60° for up to 35 days remained unchanged, however particle-free supernatants frozen and thawed several times lost 27% of activity, and supernatants at 4° lost almost 50% of activity after 35 days.

4690 DNA POLYMERASE PATTERNS IN DEVELOPING RAT LIVER. *(E.)* Ove, P. (Dept. Anat. Cell Biol., U. Pittsburgh, Pa.), M. D. Jenkins and J. Laszlo. *Cancer Res* 30(2):535-539, 1970.

Fetal and developing rat tissues were assayed for DNA polymerase using the Mantsavinos isolation and assay procedure and Sephadex G-200 fractionation. Six days before birth, fetal rat liver had a preference for denatured DNA primer (enzyme activity 4.32 mμmoles/mg protein fraction/hr thymidine triphosphate-^3H incorporated) over native DNA (1.64 mμmoles/mg protein fraction/hr). Fetal kidney (2.77 mμmoles/mg protein fraction/hr) and spleen (7.31 mμmoles/mg protein fraction/hr) also showed a preference for denatured DNA (values for native DNA were 0.66 and 1.40, resp.). One day prior to birth the enzyme activity for fetal liver decreased to 0.8 mμmoles/mg protein fraction/hr. The chromatographic elution of the pH 5.0 protein fraction on Sephadex G-200 yielded two distinct peaks. Peak I activity was higher for denatured DNA primer and was very high in fetal liver 6 days before birth while at birth, the activity was barely detectable (as in normal rat liver). Peak II polymerase activity increased until 1 week after birth at which time it decreased to the adult level. Peak I DNA polymerase seemingly is characteristic of fetal rat liver and may decrease during malignant transformation.

4691 MULTIPLE MONOAMINE OXIDASES IN RAT LIVER MITOCHONDRIA. *(E.)* Sierens, L. (Dept. Biochem., U. Ottawa, Canada) and A. D'Iorio. *Canad J Biochem* 48(6):659-663, 1970.

A radioisotopic assay for monoamine oxidases based on the enzymes' affinities for labeled and unlabeled benzylamine and serotonin was performed on rat liver mitochondria. For serotonin, the apparent Michaelis constant was $1.4 \times 10^{-4} \pm 4.3 \times 10^{-5}$ and was significantly different from the apparent inhibitor constant for substrate amines of $1.2 \times 10^{-2} \pm 4.4 \times 10^{-3}$, as determined in whole rat liver mitochondria. Similarly, the benzylamine apparent Michaelis constant was $2.5 \times 10^{-4} \pm 3.3 \times 10^{-5}$ compared with an apparent inhibitor constant of $2.1 \times 10^{-4} \pm 9.6 \times 10^{-5}$. Electrophoresis of the solubilized mitochondria yielded two peaks of activity. The difference in activity was confirmed by data on enzyme activity after elution from the gel and concentration by ultrafiltration. With labeled benzylamine as substrate, activity corresponding to peak I emitted 46.5 counts per min. and that corresponding to peak II emitted 451.3 counts per min and when labeled serotonin was the substrate, peak I emitted 102 counts per min compared with 3 counts per min from peak II. Hepatic mitochondria of rats seemingly contain different types of monoamine oxidase activity.

4692 ENZYME AND TEMPLATE STABILITY AS REGULATORY MECHANISMS IN DIFFERENTIATING INTESTINAL EPITHELIAL CELLS.

(E.) Balis, M. E. (Cornell U. Med. Coll., New York, N. Y.), A. R. Imondi and M. Lipkin. *J Biol Chem* 245(9):2194-2198, 1970.

Effects of actinomycin D (an inhibitor of RNA synthesis) and of cyclohexamide (an inhibitor of protein synthesis) on the activities of adenosine deaminase, thymidine phosphorylase, and purine nucleoside phosphorylase were studied in intestinal epithelial cells of Wistar rats. Activities of adenosine deaminase, thymidine phosphorylase, and nucleoside phosphorylase increase approximately 12-fold, 10-fold, and 5-fold, resp., from jejunal crypts to tips of villi. Purine nucleoside phosphorylase is relatively stable in the villus cells, but in the crypt cells is labile, and its synthesis is subject to inhibition by cyclohexamide. Both adenosine deaminase and thymidine phosphorylase undergo rapid turnover, although their rate of synthesis exceeds their rate of degradation. Adenosine deaminase is synthesized from an unstable template, in contrast to thymidine phosphorylase which is synthesized from a template which is stable for over 3 hr. The differential turnover of proteins and templates seemingly is one of the regulatory mechanisms operating within intestinal epithelial cells and is involved in controlling enzymic patterns characteristic of their differentiative process.

4693 METABOLISM OF NATURALLY OCCURRING HOMOPOLYMERS I. THE ISOLATION AND METABOLISM OF ADENINE-RICH POLYNUCLEOTIDES OF MOUSE LIVER.

(E.) Lim, L. (Yale U. Sch. Med., New Haven, Conn.), Z. N. Canellakis and E. S. Canellakis. *Biochim Biophys Acta* 209(1):112-127, 1970.

A method for the isolation of the naturally occurring purine polymucleotides (polyadenylic acid and polyguanic acid) from the extracts of mouse liver was developed and was used in a study of the metabolism of the naturally occurring, adenine-rich hepatic nucleotides. The mice (BDF-1 strain, males) were starved for 16 hrs, injected at different times with labeled ^{32}P, and then were sacrificed. Livers were removed and were homogenized in 0.44M sucrose as a 20% homogenate. Mitochondrial fractions were separated by ultracentrifuge, the purine nucleotides were separated by a controlled nuclease digestion, and chromatography on polystyrene columns was performed. Radioactive samples of RNA were hydrolysed with carrier RNA, the hydrolysate was separated into constituent nucleotides using paper chromatography, and radioactivity was determined by scintillation counts of the chromatograms. Nuclear polynucleotides were synthesized in concert with bulk RNA, as determined by parallel absorbance and radioactivity of these compounds. In the ribosomes the purine nucleotides were characterized by a more rapid labeling of the adenine-rich fraction (77% of ^{32}P in nucleotide at 2 hr) than the guanine-rich fraction (15% of ^{32}P in nucleotide in 2 hr). The membrane fraction (derived by deoxycholate treatment of microsomes) contained purine polynucleotides that were predominantly adenine-rich (15%) and formed a large part of the bulk RNA of this fraction. The synthesis of the membrane polynucleotides was resistant to inhibition by actinomycin D, although actinomycin D (1.5 mg/kg) inhibited the synthesis of ribosomal RNA by 80% in cellular fractions, and inhibited the uptake of ^{32}P into nuclear RNA by 55%.

4694 FURTHER STUDIES ON THE SUBCELLULAR ENZYMES OF RAT LIVER IN ACUTE THREONINE DEFICIENCY.

(E.) Wilfred, G. (Christian Med. Coll., Vellore, India) and T. N. Sekhara Varma. *Biochim Biophys Acta* 208(2):328-330, 1970.

The activities of characteristic enzymes of liver nuclei (NMN adenyltransferase), lysosomes (arylsulphatase A, acid phosphatase and α-glucosidase), and soluble supernatant fraction (fructose-1,6-diphosphatase and UDP-glucose pyrophosphorylase) were measured in rats force-fed a threonine-free diet and compared to those in rats fed a complete diet. NMN adenyltransferase activity (nm NAD^+/20 min/mg protein) was similar in the threonine-deficient rats (18.1) and the normal rats (17.4). The diphosphatase and pyrophosphorylase activities of the soluble supernatant fraction were not affected by threonine deficiency. Although the ratio of free activity (determined in the absence of Triton X-100) to bound activity (with Triton) of the lysosomal enzymes remained unchanged and acid phosphatase and α-glucosidase activities were unaltered, arylsuphatase A activity was significantly increased in threonine deficiency (free activity per whole liver rose from 58.5 to 109.1 and per mg of protein from 0.17 to 0.26).

4695 LIPID COMPOSITION OF NUCLEAR MEMBRANES ISOLATED FROM BOVINE LIVER.

(E.) Keenan, T. W. (Dept. Anim. Sci., Purdue U., Lafayette, Ind.), R. Berezney, L. K. Funk and F. L. Crane. *Biochim Biophys Acta* 203(3):547-554, 1970.

Nuclear membrane fractions isolated from beef-liver nuclei by treatment with deoxyribonuclease and $MgCl_2$ contained about 0.33 mg lipid per mg protein with a protein to total lipid ratio of 2.96. The total membrane lipids consisted of 62% phospholipids and 38% neutral lipids, with no non-phosphorus-containing polar lipids. Based on lipid phosphorus distribution, the major phospholipids were phosphatidylcholine (55%), phosphatidylethanolamine (23%), phosphatidylinositol (8%), phosphatidylserine (6%), and sphingomyelin (6%). Unesterified cholesterol (42%) and free fatty acids (36%) were the major neutral lipid components in nuclear membrane fractions. Phosphatidylcholine was the least saturated and sphingomyelin the most saturated of the major phospholipids. Eighteen-carbon chain-length fatty acids accounted for 70% of the acyl residues of the total lipid fraction, and the palmitic to oleic acid ratio was 0.55.

4696 ELECTRON MICROSCOPIC OBSERVATIONS ON THE INNERVATION OF THE INTESTINAL INNER MUSCLE LAYER. *(E.)* Gabella, G. (Dept. Anat., U. Turin, Italy). *Experientia* 26(1):44-46, 1970.

The ultrastructure of the intramuscular plexus from the inner muscle layer of small intestine from 4- to 6-month-old albino rats was examined with the electron microscope. Intramuscular nerve fibers range from 0.1 to 1.8 μ in diameter and were located adjacent and parallel to the smaller blood vessels. It was not possible to distinguish between the true intramuscular and perivascular nerve fibers, since each bundle type was intimately related to the smooth muscle cell of the tunica muscularis. Three distinct types of varicosities or vesiculated nerve processes were observed, but the only nerve fibers identified were the fibers with small, dense-core, catecholamine storage vesicles (which are postganglionic orthosympathetic fibers of extrinsic origin). Nerve processes with similar vesicles were observed inside the ganglia of Auerbach's plexus.

4697 A STIMULATING FACTOR FOR DNA TRANSCRIPTION FROM RAT LIVER. *(E.)* Nohara, H. (Niigata U. Sch. Dent., Japan), K. Iizuka, T. Mizuno and A. Igarashi. *Biochim Biophys Acta* 209(1):86-96, 1970.

A stimulating factor for the transcription of rat liver DNA was isolated and purified from rat liver supernatant, and its mode of action was studied. In an attempt to obtain an RNA-synthesizing system which was resistant to nuclease action, a ribonuclease inhibitor fraction was prepared from rat liver through DEAE-cellulose column chromatography, and it was observed that addition of this inhibitor enhanced the incorporation of labeled GTP by a system including liver DNA and *E. coli* RNA polymerase. This ribonuclease inhibitor fraction was further purified on a hydroxylapatite column and was obtained as the HA-4 fraction which had no activity as a template DNA and polymerase, but was able to promote the transcription of rat liver DNA by a purified *E. coli* polymerase. Rat liver (undenatured) used as a DNA template incorporated 0.657 nmoles of AMP without addition of the stimulating factor, and 1.229 nmoles of AMP in the presence of the factor; while in the *E. coli* preparation, the amount of AMP incorporated in the absence of the stimulating factor was 0.190 nmoles, and with the stimulating factor was 0.199 nmoles. The fraction HA-4 was incubated for 5 min at 50° and 60°, which resulted in a 49% and a 75% inactivation of the DNA stimulating activity, resp. When the incorporation of radioactive phosphorus-labeled ATP was measured in the RNA polymerase reaction primed with DNA (in the presence and absence of the HA-4 fraction) the incorporation of ATP increased with increasing amounts of the stimulating factor. The RNA synthesis incubation system without fraction HA-4 incorporated 4.09 pmoles of ATP, while the system with 4 μg of fraction HA-4 incorporated 4.77 pmoles of ATP, and with 8 μg of the factor, 5.96 pmoles of ATP were incorporated. The stimulating factor seemingly functions in the initiation of RNA synthesis, but not in chain elongation.

4698 A QUANTITATIVE HISTOCHEMICAL STUDY OF INTESTINAL MUCOSA AFTER X-IRRADIATION. *(E.)* Gaijaard, H. (Med. Biol. Lab., Nat. Defense Org., Rijswijk, Netherlands), J. Buys, M. Van Duuren and J. Giesen. *J Histochem Cytochem* 18(4):291-301, 1970.

The effects of low doses of X-irradiation (50-400 R) on enzyme activity in crypts and villi of Wistar rat intestinal mucosa was studied by histochemical staining methods and microchemical analyses of frozen-dried sections. With irradiation doses up to 400 R, there was no change in activities of enzymes which are localized exclusively or mainly in villus epithelium (leucine aminopeptidase, alkaline phosphatase, acid phosphatase, 5-nucleotidase and adenosine triphosphatase) or are evenly distributed along epithelium of crypts and villi(succinic dehydrogenase, β-hydroxybutyrate dehydrogenase, and isocitrate dehydrogenase). Lactic dehydrogenase and glucose-6-phosphate dehydrogenase activities were slightly decreased in crypts and villi from 48-96 hr after a dose of 400 R and from 48-72 hr after 200 R. Irradiation (50-400 R) markedly decreased nonspecific esterase activity both in crypt and villus epithelium and this occurred 36 hr after irradiation and was not dose dependent. Duration of the irradiation effect and number of crypt cells increased with higher irradiation doses. Quantitative analysis showed that esterase activity in the villi (mean, 23.6 μmoles/mg) was approximately 4-5 times higher than activity in crypts (5.1 μmoles/mg). The quantitative study was in agreement with information from histochemical staining methods. The observation that some intestinal functions are impaired while others are not after irradiation seemingly may be explained by different localization and activity in crypt epithelium of enzymes involved in various intestinal functions.

4699 METABOLISM OF NATURALLY OCCURRING HOMOPOLYMERS II. CHARACTERIZATION OF ADENINE-RICH POLYNUCLEOTIDES OF MOUSE LIVER RIBOSOMES. *(E.)* Lim, L. (Yale U. Sch. Med., New Haven, Conn.), Z. N. Canellakis and E. S. Canellakis. *Biochim Biophys Acta* 209(1):128-138, 1970.

The metabolic activity and response to actinomycin D of the nucleotides found in association with mouse liver ribosomes was studied. Homogenates of mouse liver were fractionated, RNA was extracted and purine polynucleotides were isolated by elution with sodium dodecyl sulfate of RNA digest chromatographed on polystyrene columns. Fragments of rough endoplasmic reticulum and free polysomes were obtained and a differential pH extraction of RNA from free and bound membrane ribosomes was performed. Ribosomal subunits were dissociated by EDTA and were separated by sucrose density-gradient centrifugation. Total ribosomal RNA, up to 3 hr after labeling with ^{32}P had a specific activity of 1,473 counts/min compared with a membrane RNA specific activity of 22,431 counts/min, however there was 15 times more RNA in the ribosomes than in the membrane fraction. The specific activities of adenylic acid and guanylic acid after alkaline and enzymatic hydrolysis were compared for the 5'-nucleotides and the 2'-3'-nucleotides, and had a ratio of adenylic acid/guanylic acid varying from 2.5 to 3.0 in all cases studied (this indicated that the sodium dodecyl sulfate fraction consists primarily of clusters of adenine nucleotides and clusters of guanine nucleotides and the ^{32}P exists as a link between similar nucleotides). A small molecular weight polyadenylic acid of about 20 nucleotides was synthesized by an actinomycin D-dependent pathway. Within 1 hr after administration of actinomycin D, spectrophotometric analysis showed that this compound appears in the 16-S region and within 4 hr it is associated with the 32-S region of the free ribosomes. A larger molecular weight polydadenylic acid (in the 4-5-S region) was synthesized by an actinomycin D-independent pathway and was in association with the membrane fraction of the bound ribosomes (3-5-S region), but was not found in association with either the 47S or the 32S region of the bound ribosomes.

4700 IMMUNOFLUORESCENT LOCALIZATION OF ORNITHINE AMINOTRANSFERASE IN RAT LIVER. *(E.)*

Brennan, P. C. (Argonne Nat. Lab., Ill.), C. Peraino, R. J. M. Fry and R. W. Swick. *J Histochem Cytochem* 18(4):264-267, 1970.

Immunofluorescent localization of ornithine aminotransferase (L-ornithine:2-oxoacid aminotransferase, EC 2.6.1.13) was studied with an indirect fluorescent antibody technique in livers of Sprague-Dawley rats fed various diets differing in protein content. Brilliant fluorescence was observed in liver mitochondria from rats fed 60% protein diet treated with antiserum; numerous fluorescent cells appeared throughout liver lobules. Stained hepatic cells of rats fed 24% protein diet (standard laboratory diet) appeared less numerous and fluorescence was less intense than in rats fed a 60% protein diet. No specific fluorescence was observed in livers from rats fed a 0% protein diet. Data correlated well with ornithine aminotransferase activity measurements in extracts of livers from rats fed similar diets. These techniques appear useful for further studies of enzyme localization in normal and diseased livers.

4701 PANCREAS ACINAR CELL DIFFERENTIATION: III. IMPORTANCE OF METHIONINE IN DIFFERENTIATION OF PANCREAS ANLAGE IN ORGAN CULTURE. *(E.)*

Fitzgerald, P. J. (St. U. New York, Downstate Med. Ctr., Brooklyn), I. Parsa and P. J. Fitzgerald. *Amer J Path* 59(1):1-11, 1970.

Dorsal pancreas anlage of Wistar rat embryos at day 13 of enbryogenesis were used to study the importance of methionine in the differentiation of the pancreas anlage in organ culture. In the methionine-deficient culture medium, growth of the pancreas anlage was almost as much as that in a control medium containing methionine but significant differentiation was absent in the explant growth. No zymogen granules were formed and there was relatively little increase in the enzymatic activities of amylase, lipase, or chymotrypsin, as compared to activities in explants grown in control medium. In explants grown in a culture medium identical to the methionine-containing medium, except for a single amino acid that was deleted from the basal medium, there was (after 9 days culture) minimal growth of the explant in each case. In all single amino acid deficiencies tested (other than methionine) some acini were formed and zymogen granules could be recognized by light microscopy in at least a few of the acinar cells. Growth of the culture was very poor and there was far more necrosis in the explant cultured in a single amino acid-deficient medium than was present cultured in the methionine-deficient medium. Examination of the culture after 8 days in the methionine-deficient medium and 1 day exposure to methionine or S-adenosyl-methionine, revealed the presence of considerable ergastoplasm, some zymogen granules, and many prozymogen vesicles and increases in amylase, chymotrypsin and lipase activities.

4702 STUDIES ON THE MECHANISM OF DECREASE IN THE RIBONUCLEIC ACID CONTENT IN LIVER CELLS OF FASTED RATS: EFFECT OF STARVATION ON RIBONUCLEIC ACID DEGRADATING AND SYNTHESIZING SYSTEMS. *(E.)*

Onishi, T. (Sch. Med., Tokushima U., Japan). *J Biochem* 67(4):577-585, 1970.

Studies on mechanism of decrease in RNA content were conducted in liver cells of fasted Wistar rats. Rats fasted from 1 to 9 days showed body weight decreases of 10 to 45% of their initial weight. During starvation, contents of nuclear RNA-polymerase, ribosomal RNA-polymerase, and soluble RNA-polymerase (expressed in µg P per µg DNP-polymerase of the liver) decreased exponentially with loss of body weight and at approximately the same relative weights. In a rat which lost 45% of its body weight (after 9 days), values for nuclear, ribosomal, and solube-RNA-polymerases were approximately 55, 49 and 46%, resp., of those in normal rats (nuclear-RNA-P 39 ± 2 µg/g liver; ribosomal-RNA-P 380 ± 31 µg/g liver, and soluble-RNA-P 106 ± 9 µg/g liver). During starvation, rats losing 10% of their body weight showed a polysome content per 100 µg DNA-P of 80% of normal value and then decreased exponentially with body weight loss; polysome profile also showed similar changes following starvation. On loss of up to 20 to 25% body weight, activities of both free and latent forms of alkaline RNase (units/µg DNA-P) were maintained. These levels decrease to 50% of normal level (free form 1.4; latent form 2.4) on loss of 40 to 45% body weight. Acid RNase and alkaline RNase inhibitor activities decreased with body weight loss. Activity of DNA-dependent RNA polymerase, prepared as an aggregate-enzyme, decreased nearly in parallel with decreases in RNA levels during starvation. Levels of ribonucleotides in liver cells were also decreased during starvation.

4703 GLUCOSE-6-PHOSPHATASE AND THIAMINE PYROPHOSPHATASE ACTIVITIES IN THE JEJUNAL EPITHELIUM OF THE MOUSE. *(E.)*

Hugon, J. S. (Med. Ctr., U. Sherbrooke, Quebec, Canada), M. Borgers and D. Maestracci. *J Histochem Cytochem* 18(5): 361-364, 1970.

Glucose-6-phosphatase and thiamine pyrophosphatase activities were studied by electron microscopy in jejunal epithelium of adult mice. Glucose-6-phosphatase activity was observed in all cisternae of rough endoplasmic reticulum and most smooth membrane profiles of the absorbing cells of villus and of stem cells of crypts; activity was also present in double perinuclear space. No precipitate was observed in Golgi apparatus of columnar cells or endoplasmic reticulum of goblet cells. Precipitates were present on brush borders, while faint deposits were found in dense bodies. Glucose-6-phosphatase activity was less pronounced in stem cells of crypts. When glycerophosphate was used in incubation medium, no glucose-6-phosphatase activity was present in endoplasmic reticulum, but high activity was observed in brush border, dense bodies, multivesicular bodies and Golgi cisternae. Thiamine pyrophosphatase activity was observed in cisternae of Golgi apparatus and in all cells of villi and crypts. In columnar cells of the villus, thiamine pyrophosphatase was present in cisternae of smooth and rough endoplasmic reticulum but was absent in endoplasmic reticulum of goblet cells and cells in crypt bottoms.

4704 MIGRATION OF GLYCOPROTEIN FROM GOLGI APPARATUS TO CELL COAT IN THE COLUMNAR CELLS OF THE DUODENAL EPITHELIUM. *(E.)* Bennett, G. (Dept. Anat., McGill U., Montreal, Canada). *J Cell Biol* 45(3):668-673, 1970.

Perfused duodenal segments removed from male albino rats 2.5 to 60 min after i.p. or i.v. injections of ^{3}H-galactose were used to locate the source of apical cell coat material in rat duodenal columnar cells, and to learn about its mode of transport to the cell surface. In segments removed 2.5 min after injection, all villus columnar cells were seen to incorporate label in the supranuclear Golgi region of their cytoplasm. There was no difference in overall intensity or distribution of the label between i.p. and i.v. injected rats. Electron micrographs showed that over 70% of the silver grains were concentrated over the Golgi apparatus which consisted of parallel arrays of three to five flattened saccules whose ends were often dilated. By 10 min after the injection, some radioautographic reaction was still seen over the Golgi apparatus, but a considerable number of grains were localized over the apical region of the cytoplasm. By 1 hr after injection, most silver grains were seen over the microvilli, and some were seen over the hazy surface material covering the sides and tips of the microvilli. A few grains were still seen over the apical cytoplasm as well as the Golgi apparatus and some were also seen over the lateral and basal cell surfaces.

4705 ISOLATION AND OVERALL CHARACTERIZATION OF THE "INNER MATRIX" FROM MITOCHONDRIA OF PRIMATE LIVER CELLS: II. A COMBINED ULTRASTRUCTURAL AND QUANTITATIVE EVALUATION OF THE HIGH PRESSURE-ACCESSIBLE COMPARTMENT. *(E.)* Stoian, I. (I. Cantacuzino Inst., Bucarest, Rumania), S. P. Constantinescu, G. Gherasim and G. Gancevici. *Arch Roum Path Exp Microbiol* 28(2-3):329-346, 1969.

Quantitatively controlled disruption experiments were performed to evaluate exhaustive liberation of high pressure (HP)-accessible fluid from monkey liver mitochondria; disruption was performed in plain, isoosmotic sucrose, at a low organelle: diluent ratio (1:2). Resulting release of highly concentrated fluid phase (HP-solute) accounted for at least 58% of mitochondrial wet mass (v/w) and for 82% of intramitochondrial water (v/v). Normalization of quantitative determinations to *in vivo* values, showed that HP-accessible residue made up some 18% (w/v) of HP-solute and contained 52% protein, 1.5% total lipid and up to 26% free amino acids (w/w). Residue consisted of electron transport bodies of 2.0×10^3 - 1.2×10^4 Å in diameter, and of isolated or moderately clumped, granular electron transparent units ranging from 35 to 95 Å in diameter which displayed a marked conformational lability to pH and temperature changes, within physiological limits. Preparative, electrophoretic and binding assays of electron transparent material revealed existence of free basic protein residues that developed extensive cross-linking and aggregate formation in presence of anionic ligands (DNA, ATP and heparin). The particular behavior of high pressure-proteins in respect to their electrophoretic mobility and pH-dependent binding to DNA anion, suggest that they belong to a class of cationic proteins with strong conformational lability.

4706 CYTOLOGIC CHANGES INDUCED BY STIMULATION OF GASTRIC ANTRUM. *(E.)* Ferguson, D. J. (Dept. Surg., U. Chicago, Ill.). *Bull Soc Int Chir* 29(1):7-14, 1970.

Antral mucosa (15 dogs) was examined histologically before and after chronic stimulation (produced by transplantation either into the biliary tract or colon) and stimulation with acetylcholine, meat extract, acid or bile (in most cases with inclusion of ferritin in the stimulant). The same concentration of ferritin (2.5%) in bile, beef extract or 0.3% acetylcholine did not result in visible entry into the vesicles after 10 to 30 min exposure, but exposure of S-cells to bile produced an increase in number and size of visicles. Some endocrine cells appeared to be extruded through the basement membrane of the gland. E-cells nearly always adjoined the basement membrane but always did not reach the lumen, while most argyrophil cells reached both the basement membrane and the lumen. The relative abundance and distribution of non-mucous glandular cells of the antrum does not suggest anatomic interrelations among them, as they are apparently scattered at random. S-cells, however, are generally absent from the deepest parts of the glands.

4707 MICROSCOPIC STUDY OF THE SYNTHESIS OF CHOLESTEROL IN THE HEPATIC CELL. *(Fr.)* Pascaud, A. (Inst. Sci. Res. Cancer, Villejuif, France), N. Vodovar, P. Auliac and M. Pascaud. *C R Acad Sci* 270(12):1624-1626, 1970.

The synthesis of cholesterol by liver was studied autoradiographically following i.p. injection of

^{3}H-mevalonate (250 mC/100 g) into fasted, Wistar rats. Cholesterol synthesis was found in the whole cell but in greater quantities in the endoplasmic tissue in the immediate area of the mitochondria. The intercellular space of the biliary canaliculus showed little newly synthesized cholesterol, however preferential localization of free (non tritiated) cholesterol occurred in myelin and was particularly abundant in the intercellular spaces.

4708 HEPATIC DRUG-METABOLIZING ENZYME ACTIVITY IN RATS PRETREATED WITH (-)-EMETINE OR (±)-2,3-DEHYDROEMETINE. *(E.)* Miller, H. H. (George Washington U. Sch. Med., Washington, D.C.), R. K. Johnson, J. D. Donahue and W. R. Jondorf. *Biochem J* 117(3):491-498, 1970.

Hepatic drug-metabolizing enzyme activity was studied in female Sprague-Dawley rats pretreated with (-)-emetine or (±)-2,3-dehydroemetine. Pretreatment with either compound at 18 μmol/kg for 24 hr inhibited drug-metabolizing enzyme activity *in vitro* by 50% whereas pretreatment with isoemetine or O-methylpsychotrine had no such effect *in vitro* on demethylation of aminopyrine or on azo reduction of Neoprontosil by liver microsomal fractions. Pretreatment with 18 μmol/kg (24 hr) of emetine or 2,3-dehydroemetine prolonged hexobarbital-induced sleeping-time of treated animals by 63% and 50%, resp., compared to controls; structural analogues had no such prolonging effects of sleeping times at similar doses. Co-administration of emetine or 2,3-dehydroemetine and sodium phenobarbital or 1,1-dichloro-2-O-chlorophenyl-2-p-chlorophenylethane to rats abolished or greatly diminished stimulation of drug-metabolizing enzyme activity *in vitro* usually obtained by administration of phenobarbital or 1,1-dichloro-2-O-chlorophenyl-2-p-chlorophenylethane alone. Inhibitory effects on drug-metabolizing activity *in vitro* exerted by 2,3-dehydroemetine and emetine was not associated with interference in generation of NADPH from NADP$^+$. Structural requirements for amoebicidal activity and inhibitory effects on protein synthesis *in vitro* are consistent with degree of effectiveness in inhibiting rat liver microsomal drug-metabolizing systems.

4709 EFFECT OF MITOMYCIN C ON THE LIVER WITH SPECIAL REFERENCE TO THE CHANGES IN FINE STRUCTURE OF RABBIT LIVER CELLS. *(E.)* Ushijima, H. (Kurume U. Sch. Med., Japan) *Kurume Med J* 17(1): 1-18, 1970.

The effects of massive doses of Mitomycin C on normal liver cells were studied in rabbits by electron microscopy. Macroscopic appearances of liver were normal following administration of 1.0 mg/kg of Mitomycin C for 5 consecutive days (only abnormalities were slight infiltration of lymphocytes). Macroscopic changes 6 hr after a single massive dose (5.0 mg/kg) of Mitomycin C included an increase in number of large polymorphic liver cells, swelling and faint staining of cells (especially in the centrolobular zone) and slight infiltration of lymphocytes. After the administration of 1.0 mg/kg of Mitomycin C for 5 consecutive days, electron microscopic findings revealed vesicular distention of rough endoplasmic reticulum and detachment of ribosomes. Small vesicles or dilated smooth-surfaced endoplasmic reticulum were markably reduced in number within hepatocytes in the peripheral zone. At 6 hr after single administration of 5.0 mg/kg of Mitomycin C there was vesicular and tubular distention of rough endoplasmic reticulum, depletion of glycogen, increased lysosomes, and swollen mitochondria in the peripheral zone and vesicular and tubular distention of rough endoplasmic reticulum, detachment of ribosomes, slightly swollen mitochondria, and cisternal distention of perinuclear space in the central zone. All changes were reversible and diminished at 48 hr after Mitomycin C administration. In spite of morphological changes produced by Mitomycin C, there was no indication of liver function impairment.

4710 THE EFFECT OF CORTISOL ON THE BINDING OF ACTINOMYCIN D TO AND ON THE TEMPLATE ACTIVITY OF ISOLATED RAT LIVER CHROMATIN. *(E.)* Beato, M. (Phillips Physiol. Chem. Inst., U. Marburg, Lahnberge, Germany), K. H. Seifart and C. E. Sekeris. *Arch Biochem Biophys* 138(1):272-284, 1970.

The effects of cortisol on the binding of actinomycin D to isolated rat liver chromatin was studied *in vitro* and the change in the capacity of the chromatin to support RNA synthesis following the action of cortisol was investigated. The binding capacity of chromatin for actinomycin D was measured by the use of tritium-labeled actinomycin and centrifugation through sucrose density gradients. The capacity of rat liver chromatin to bind ^{3}H-actinomycin D and to support RNA synthesis was increased by 40% and 10% resp., when compared to purified rat liver DNA. Spectroscopic optical titration of rat liver DNA (500 μg) with actinomycin D showed a saturation level of 44.2 μg of actinomycin D (49 moles/1,000 base pairs), while titration of rat liver chromatin with actinomycin D showed a saturation level of 10.6 μg of actinomycin D (12 moles/1,000 base pairs). These values suggest that in native chromatin the binding of RNA polymerase is restricted to a greater extent than is the smaller molecule antibiotic which binds to the smaller, less specific unmasked regions of the DNA. Incubation of the chromatin with cortisol phosphate for 10 min at 37°C resulted in a 10% increase in its ability to bind the antibiotic and a 15% increase in its capacity to act as a template for RNA polymerase. Chromatin incubated in only Tris-Cl buffer bound 9,950 ± 315 dpm/A_{260} of ^{3}H actinomycin, and had a template capacity of 2,500 ± 150 cpm/0.1 ml but when cortisol phosphate was added to the incubation medium, chromatin was able to bind 11,050 ± 420 dpm/A_{260} of actinomucin D, and the RNA template capacity was increased to 2,880 ± 150 cpm/0.1 ml. The effect of cortisol phosphate was dose-dependent between concentrations of 10^{-6} and 10^{-5}M.

4711 THE EFFECT OF COLCHICINE ON GUINEA PIG INTESTINAL ENZYME ACTIVITY. *(E.)* Cohen, M. I. (Montefiore Hosp. Med. Ctr., Bronx, N.Y.) and H. McNamara. *Amer J Dig Dis* 15(3):247-250, 1970.

Mucosal homogenates were prepared from scrapings of jejunum from adult male Hartley guinea pigs injected i.p. with sterile saline (9 controls) or 0.5 mg/kg body weight colchicine. Sucrase activity (micromoles substrate hydrolyzed per min per g of tissue) of the control group was 4.96 and of the colchicine group was 2.57. Maltase activity of the control group was 19.70, and in the colchicine treated group was 12.67. There was no significant difference between the control and colchicine groups with regard to gamma glutamyl transpeptidase activity. This significant fall in disaccharidase activity without alteration in the peptidase activity after colchicine administration suggests a specific response of the disaccharidase system rather than a generalized toxic mucosal effect of colchicine.

4712 FACTORS INFLUENCING THE ISOLATION OF A POLYRIBOSOMAL SYSTEM FROM RAT LIVER AND ITS ABILITY TO INCORPORATE [^{14}C] AMINO ACIDS. *(E.)* Huston, R. L. (US Army Med. Res. Nutri. Lab.), L. E. Schrader, G. R. Honold, G. R. Beecher, W. K. Cooper and H. E. Sauberlich. *Biochim Biophys Acta* 209(1): 220-239, 1970.

The optimal conditions for isolating and assaying the amino acid incorporation systems *in vitro* in rat-liver polyribosomes are described. Male Holtzman rats were fasted for 12 hr to deplete liver glycogen, and then were decapitated, and the livers removed and minced with 2 parts (w/v) of cold buffer for isolation of either cell sap or polyribosomes. The buffer medium (containing 250 mM sucrose, 50 mM HEPES, 250 mM KCl, 3.75 mM MgCl$_2$, 3 mM glutathione and adjusted to pH 7.3 with 25 mM KOH for equilibration of Sephadex G-10 columns) was optimal for preparation of post-mitochondrial supernatant for isolation of cell sap. The medium for isolation of polyribosomes was identical except that 5 mM MgCl was used and the pH was 7.6 (37°) after addition of glutathione. When the concentration of Mg^{2+} in the extraction and assay media was varied from 0 to 15 mM, maximal incorporation occurred at the 5 mM level, and the optimal ionic concentration of the buffers for isolation of cell sap enzymes, polyribosomes and the incubation system *in vitro* were 3.75, 5.00, 5.00-5.25 mM Mg^{2+}, resp. When the buffers contained 75 mM K$^+$, the incorporation of amino acids was 3-fold greater than when the system was isolated and assayed in 25 mM K$^+$ buffer. Glutathione in the extraction media enhanced the rate of amino acid incorporation and no additional thiol source was required in the incubation medium. The addition of the detergent deoxycholate (1.67% of post-mitochondrial supernatent) gave optimal preparation of total liver polyribosomes. The RNA/protein ratio increased from approximately 0.80 to 0.92 over a range of deoxycholate concentrations from 0.33 to 1.67% (w/v). Gel filtration of cell sap with Sephadex G-10 yielded the most active preparation for protein synthesis *in vitro*. Incorporation of [^{14}C] amino acid into polyribosomal protein was measured at 7103 disintegrations/min using Sephadex G-10 as compared to 4370 disintegrations/min with Sephadex G-25 and 5035 disintegrations/min with Bio-Gel P-4. Incorporation of amino acids *in vitro* was linear for only 2 min at 37° when 45 μg of cell sap protein was used per μg of polyribosomal protein; however, a ratio of 22.5 μg cell sap protein per μg saturated the assay system.

4713 INTESTINAL MUCOSAL MORPHOLOGY DURING WATER AND ELECTROLYTE ABSORPTION: A LIGHT AND ELECTRON MICROSCOPIC STUDY. *(E.)* Dobbins, W. O., III (VA Hosp., Washington, D. C.) and J. T. Tomasini. *Amer J Dig Dis* 15(3):226-238, 1970.

A series of male Osborne-Mendel rats was used for light and electron microscopic studies of *in vivo* preparations of rat ileum fixed during well-defined conditions of water and electrolyte absorption. Water absorption was significantly greater in saline-perfused animals than in mannitol perfused animals (0.19 ± 0.012 ml/cm/hr and 0.04 ± 0.015 ml/cm/hr, resp.). The structural alterations consisted of dilation of the epithelial cell intercellular spaces and dilation of the capillaries and lymphatics in the lamina propria. The dilated intercellular spaces were localized in the apical one-third of the villus. The separation between the lateral membranes started at the supranuclear level, increased gradually to become maximal at the level of the basal end of the nucleus, and was then reduced sharply by basal lateral processes of the epithelial cell which extended along the basement membrane, leaving a 200 to 400 Å gap between them without a specialized junctional structure. The lymphatic dilatation was readily evident and quite convincing even before quantitation and the increase in capillary luminal area was also clear, but required quantitation for confirmation. A heavy precipitate was observed in the brush border localized to the surface coat of microvilli and to the outer leaflet of the plasma membrane, which gave evidence of ATPase localization; a mild precipitate was also observed along the apical half of the lateral cell membrane of epithelial cells, localized to the outside of the cell in close contact with the outer leaflet of the cell membrane, and distributed in clumps rather than diffusely.

4714 CIRCADIAN RHYTHM OF MOUSE LIVER PHOSPHOENOLPYRUVATE CARBOXYKINASE. *(E.)* Phillips, L. J. (Biol. Dept., Bryn Mawr Coll., Pa.) and L. J. Berry. *Amer J Physiol* 218(5):1440-1444, 1970.

4715 MICROFLUOROMETRIC DETERMINATION OF "FREE-DNA-PO$_4$-GROUPS" IN THE CHROMATIN OF LIVER NUCLEI OF YOUNG AND OLD GUINEA PIGS. *(Ger.)* Denkhaus, W. (Path. Inst. U. Mainz, Germany) and D. Heimer. *Gerontologia* 16(1):1-13, 1970.

4716 PROPERTIES OF A SOLUBILIZED FORM OF THE CYTOCHROME P-450-CONTAINING MIXED-FUNCTION OXIDASE OF LIVER MICROSOMES. *(E.)* Lu, A. Y. H. (Med. Sch., U. Michigan, Ann Arbor), H. W. Strobel and M. J. Coon. *Molec Pharmacol* 6(3):213-220, 1970.

4717 CATHEPSIN D: PURIFICATION OF ISOENZYMES FROM HUMAN AND CHICKEN LIVER. *(E.)* Barrett, A. J. (Strangeways Res. Lab., Cambridge, England). *Biochem J* 117(3):601-607, 1970.

4718 SPECIFIC BINDING OF RAT LIVER NUCLEAR PROTEINS TO DNA. *(E.)* Kleinsmith, L. J. (Dept. Zoology, U. Michigan, Ann Arbor), J. Heidema and A. Carroll. *Nature* 226(5250):1025-1026, 1970.

4719 CHICKEN LIVER MITOCHONDRIAL PHOSPHOENOLPYRUVATE CARBOXYKINASE: KINETIC STUDIES. *(E.)* Felicioli, R. A. (Inst. Chem. Biol., U. Pisa, Italy), R. Barsacchi and P. L. Ipata. *Europ J Biochem* 13(3):403-409, 1970.

4720 ENZYMATIC HYDROLYSIS OF DIOL WAXES BY RAT LIVER MICROSOME. *(E.)* Gamo, M. (Kansai Med. Sch., Osaka, Japan) and K. Saito. *J Biochem* 67(4):607-608, 1970.

4721 SERUM INTESTINAL ALKALINE PHOSPHATASE IN RATS AFTER 800 R WHOLE-BODY OR REGIONAL X-IRRADIATION. *(E.)* Highman, B. (Armed Forces Inst. Path., Washington, D.C.) and A. R. Hanks. *Proc Soc Exp Biol Med* 133(4):1201-1206, 1970.

4722 OCCURRENCE AND ULTRASTRUCTURE OF LIPID DROPLETS IN THE DEVELOPING CHICK INTESTINAL EPITHELIUM. *(E.)* Holman, U. (Sch. Vet. Med., Brno, Czechoslovakia). *Acta Anat* 74(1):54-64, 1969.

4723 DEOXYRIBONUCLEIC ACID POLYMERASE FROM NUCLEI OF RAT INTESTINAL MUCOSA. *(E.)* Leung, F. Y. T. (Dept. Biochem., U. British Columbia, Vancouver, Canada) and S. H. Zbarsky. *Canad J Biochem* 48(5):529-536, 1970.

4724 KINETICS OF BOVINE LIVER ALDEHYDE DEHYDROGENASE: EFFECT OF COENZYME AND ALDEHYDE STRUCTURE. *(E.)* Freda, C. E. (Natl. Council Sci. Technic. Invest., Buenos Aires, Argentina) and A. O. M. Stoppani. *Enzymologia* 38(4):225-242, 1970.

4725 ENZYMATIC ACTIVITIES OF THE MATRIX AND INNER MEMBRANE OF PIGEON LIVER MITOCHONDRIA. *(E.)* Landriscina, C. (Dept. Biochem., U. Bari, Italy), S. Papa, P. Coratelli, L. Mazzarella and E. Quagliariello. *Biochim Biophys Acta* 205(2):136-147, 1970.

4726 LIGHT AND ELECTRON MICROSCOPIC STUDIES ON THE PANCREATIC ACINAR AND ISLET CELLS IN XENOPUS LAEVIS. *(E.)* Kobayashi, K. (Sch. Med. Gunma U., Maebashi, Japan). *Gunma J Med Sci* 17-18(1-4):65-103, 1969.

4727 THE POSTNATAL DEVELOPMENT OF MITOCHONDRIAL TYROSINE AMINOTRANSFERASE IN RAT LIVER. *(E.)* Holt, P. G. (Dept. Biochem., U. Western Australia, Nedlands) and I. T. Oliver. *FEBS Letters* 8(2):99-100, 1970.

4728 FURTHER STUDIES ON THE ISOZYMIC FORMS OF SOLUBLE RAT LIVER GUANINE DEAMINASE. *(E.)* Kumar, K. S. (Dept. Biochem., Lucknow U., India) and P. S. Krishnan. *Biochem Biophys Res Commun* 39(4):600-608, 1970.

4729 BIOLOGICAL EVALUATION OF LIVER-PROTECTING AGENTS WITH SPECIAL CONSIDERATION OF LIVER PREPARATIONS. *(Ger.)* Dressel, H. (no affil) *Z Med Labortechn* 10(6):371-384, 1970.

4730 COMPLEX CHANGES IN THE SUCKLING RAT'S SMALL INTESTINE BY THE END OF THE THIRD WEEK OF LIFE. *(E.)* Baintner, K., Jr. (U. Med. Sch., Budapest, Hungary) and B. Veress. *Experientia* 26(1):54-55, 1970.

4731 THE ISOLATION OF NUCLEAR MEMBRANE FROM A LARGE-SCALE PREPARATION OF BOVINE LIVER NUCLEI. *(E.)* Berezney, R. (Dept. Biol. Sci., Purdue U., Lafayette, Ind.), L. K. Funk and F. L. Crane. *Biochim Biophys Acta* 203(3):531-546, 1970.

4732 CHARACTERISTICS OF GUINEA PIG LIVER AND ADRENAL MONOOXYGENASE SYSTEMS. *(E.)* Kupfer, D. (Lederle Lab., American Cyanamid Co., Pearl River, N. Y.) and S. Orrenius. *Molec Pharmacol* 6(3):221-230, 1970.

4733 EQUILIBRIUM RELATIONS BETWEEN THE CYTOPLASMIC ADENINE NUCLEOTIDE SYSTEM AND NICOTINAMIDE-ADENINE NUCLEOTIDE SYSTEM IN RAT LIVER. *(E.)* Veech, R. L. (Radcliffe Infirm., U. Oxford, England), L. Raijman and H. A. Krebs. *Biochem J* 117(3):499-503, 1970.

4734 COMPARATIVE ACTION OF HETEROLOGOUS MESENCHYMES AND OF EXTRACTS OF EMBRYONIC ORGANS ON THE GASTRIC MORPHOGENESIS IN A CULTURE *IN VITRO*. *(Fr.)* David, D. (Fac. Sci. Clermont-Ferrand, France). *Ann Embry Morph* 2(4):419-432, 1969.

4735 HUMAN DIGESTIVE ISO- AND HETERO-SYSTEMS (ANTIBODIES). *(Fr.)* Zweibaum, A. (Hosp. Broussais, Paris, France) and E. Bouhou. *Ann Inst Pasteur* 118(4):547-561, 1970.

4736 CHOLINESTERASE ACTIVITIES IN THE CHICK EMBRYO LIVER. *(Fr.)* Houssaint, E. (Fac. Sci. Nantes, France) and N. LeDouarin. *C R Acad Sci* 270(1):131-133, 1970.

4737 GLUCOSE 6-PHOSPHATE DEHYDROGENASE ASSAY IN LIVER AND BLOOD. *(E.)* Dror, Y. (Fac. Agric., Hebrew U. Jerusalem, Rehovot, Israel), H. F. Sassoon, J. J. Watson and B. C. Johnson. *Clin Chim Acta* 28(2):291-298, 1970.

4738 TRYPTOPHANYL-tRNA SYNTHETASE OF BEEF PANCREAS: CHARACTERISTICS OF INTRINSIC AND EXTRINSIC CHROMOPHORES IN RELATION TO THE CONFORMATION OF THE ENZYME AND ITS ACTIVE SITE. *(Fr.)* Cittanova, N. (Fac. Med. Paris, France) and A. Alfsen. *Europ J Biochem* 13(3):539-547, 1970.

4739 PREPARATION AND PURIFICATION OF MITOCHONDRIA OF GUINEA PIG LIVER WITH RESPECT TO A STUDY OF THEIR NUCLEIC ACIDS. *(Fr.)* Derumez, P. (Fac. Med. Pharm. Lille, France), M. L. Delfanne and E. Puvion. *C R Acad Sci* 270(14):1841-1844, 1970.

4740 ERYTHROCYTIC ORIGIN OF THE MOLECULAR FORM OF GLUCOSE-6-PHOSPHATE-DEHYDROGENASE (G-6-PDH) PRESENT IN RAT LIVER EXTRACTS. *(Fr.)* Failly, C. (Inst. Res. Sci. Cancer, Villejuif, France) and J. Uriel. *C R Acad Sci* 270(14):1825-1828, 1970.

4741 HISTOCHEMICAL LOCALIZATION OF AN ADENOSINE TRIPHOSPHATASE (ATP'ase) IN HEPATOCYTE CULTURES. *(Fr.)* Verne, J. (Fac. Med., Paris, France), S. Hebert, M. Gefroy and N. Marchi. *C R Soc Biol* 163(11):2246-2249, 1969.

4742 EVIDENCE OF A GALACTOSYL-TRANSFERASE IN AN ACELLULAR SYSTEM FROM THE INTESTINAL MUCOSA OF THE RAT. *(Fr.)* Frot-Coutaz, J. (Fac. Med., Lyon, France), P. Louisot and R. Got. *Bull Soc Chim Biol* 52(4):447-449, 1970.

4743 INDUCTION OF THE HEPATIC MICROSOMAL HYDROXYLASES: I. PRESENCE, REVERSIBILITY, REPRODUCIBILITY OF THE INDUCTION IN THE MOUSE PRETREATED WITH PHENOBARBITAL. *(Fr.)* Buchel, L. (Fac. Med. Paris, France) and J. Levy. *Therapie* 25(1):91-106, 1970.

4744 INDUCTION OF THE HEPATIC MICROSOMAL HYDROXYLASES: II. REVERSIBILITY, REPRODUCIBILITY OF THE INDUCTION IN THE RAT PRETREATED WITH PHENOBARBITAL. *(Fr.)* Buchel, L. (Fac. Med. Paris, France) and J. Levy. *Therapie* 25(1):107-123, 1970.

4745 SUPPRESSION OF PYRUVATE CARBOXYLASE BY GLUCOSE IN THE PERFUSED RAT LIVER. *(E.)* Wimhurst, J. M. (Dept. Biochem., U. Coll. London, England) and K. L. Manchester. *FEBS Letters* 8(2):91-94, 1970.

4746 EFFECTS OF THE HEPATIC PERIARTERIAL NEURECTOMY ON HEPATIC ULTRASTRUCTURE IN NORMAL AND PATHOLOGICAL STATES. *(Fr.)* Mallet-Guy, P. (Hosp. Eduoard Herriot, Lyon, France), J. Feroldi, Y. Mallet-Guy and G. Yoshitomi. *Lyon Chir* 66(1):38-41, 1970.

4747 PEROXIDASE ACTIVITY IN RAT LIVER MICROBODIES AFTER AMINO-TRIAZOLE INHIBITION. *(E.)* Wood, R. L. (Dept. Anat., U. Minnesota, Minneapolis) and P. G. Legg. *J Cell Biol* 45(3):576-585, 1970.

4748 TERMINAL DEOXYRIBONUCLEOTIDYLTRANSFERASE FROM NUCLEI OF RAT INTESTINAL MUCOSA. *(E.)* Leung, F. Y. T. (Dept. Biochem., U. British Columbia, Vancouver, Canada) and S. H. Zbarsky. *Canad J Biochem* 48(5):537-540, 1970.

4749 PANCREAS-SCANNING AGENTS: I. REINVESTIGATION OF THE DISTRIBUTION OF TRITIATED BERBERINE HYDROCHLORIDE IN MOUSE PANCREAS. *(Jap.)* Tamemasa, O. (Shizuoka Coll. Pharm., Japan), T. Fujita and T. Kimura. *J Pharmaceut Soc Jap* 90(3):405-407, 1970.

4750 A MECHANISM OF THE IRREVERSIBLE INACTIVATION OF BOVINE PANCREATIC RIBONUCLEASE BY DIETHYLPYROCARBONATE: A GENERAL REACTION OF DIETHYLPYROCARBONATE WITH PROTEINS. *(E.)* Wolf, B. (Dept. Botany, U. Illinois, Urbana), J. A. Lesnaw and M. E. Reichmann. *Europ J Biochem* 13(3):519-525, 1970.

4751 A HISTOCHEMICAL STUDY OF ADENOSINE TRIPHOSPHATASE IN THE TOAD *(BUFO SPINULOSUS)* GASTRIC MUCOSA. *(E.)* Koenig, C. (Dept. Anat., Catholic U. Chile, Santiago) and J. D. Vial. *J Histochem Cytochem* 18(5):340-352, 1970.

4752 FINE STRUCTURE OF THE QUAIL COMMON BILE DUCT EPITHELIUM. *(E.)* Yamada, K. (Nagoya U. Sch. Med., Japan). *Acta Anat* 74(1):76-87, 1970.

4753 THE INFLUENCE OF PREGNANCY AND LACTATION ON THE MORPHOLOGY AND ABSORPTIVE CAPACITY OF THE RAT SMALL INTESTINE. *(E.)* Craft, I. L. (Chelsea Hosp. Women, London, England). *Clin Sci* 38(3):287-295, 1970.

o P:Absorp (4770)
o P:Secr:Stom (4808)(4810)
o P:Secr:Panc (4814)(4816)(4817)
o P:Secr:Hepatobil (4818)(4827)(4831)(4832)(4841)(4845)(4846)(4850)(4857)(4858)(4862)
o P:Secr:Int (4864)(4865)(4869)(4870)
o P:Gen (4882)
o Diagproc (4915)(4932)(4939)(4944)(4951)
o D:Stomduo (4977)(5003)(5006)(5014)
o D:Stomduo:Peptulc (5020)
o D:S.Intest (5053)(5057)
o D:S.Intest:Malabs (5073)
o D:L.Intest (5095)(5096)
o D:L.Intest:Ulccol (5131)
o D:Pancreas (5147)
o D:Pancreas:Pancreat (5148)
o D:Livbil (5165)(5166)(5167)(5168)(5169)(5171)(5174)(5175)(5176)(5177)(5182)(5183)(5184)(5187)(5203)(5207)
o D:Livbil:A.Nonv.Hep (5221)(5224)(5225)(5226)(5228)(5229)(5230)(5233)(5235)(5246)(5248)(5249)
o D:Livbil:A.V.Hep (5252)(5253)(5258)(5259)(5264)(5266)
o D:Livbil:Cirrh (5293)
o D:Gen (5355)(5367)(5382)

4754 DIRECT ASSESSMENT OF THE IMPORTANCE OF CONJUGATION FOR BILIARY TRANSPORT OF SULFOBROMOPHTHALEIN SODIUM. *(E.)*

Whelan, G. (U. Texas Southwestern Med. Sch., Dallas), J. Hoch and B. Combes. *J Lab Clin Med* 75(4):542-557, 1970.

The importance of the conjugation step for optimal transfer of BSP from blood into bile was examined directly by comparison of the biliary excretion of dye when either free or conjugated BSP was administered i.v. to mature Sprague-Dawley rats and Maxwell guinea pigs. Conjugated BSP was prepared *in vivo* by harvesting the BSP-glutathione conjugate from paper chromatograms of bile collected from rats receiving a constant infusion of BSP, and by *in vitro* synthesis and isolation in a pure form. In guinea pigs injected with free BSP at a dose of 12 μmole per 100 g, a maximal dye excretion rate of 0.85 ± 0.24 μmoles/100 g/10 min was achieved, while synthetic conjugated BSP at the same dosage produced an excretion rate of 1.63 ± 0.35 μmoles/100 g/10 min. Maximal rates of biliary excretion of dye in rats were measured at 1.24 ± 0.20 μmoles/100 g/10 min when free BSP (12 μmoles/100 g) was given, and at 3.17 μmoles/100 g/10 min when conjugated BSP was given. In both animal species there was a slower initial rate of uptake of the conjugated dye. In the guinea pig with patent bile ducts, the hepatic content of dye at 2 min after injection of free BSP averaged 0.28 μmole per g of liver, compared with 0.10 μmole per g of liver when conjugated BSP was administered. In the rat, hepatic dye content at 2.5, 5.5 and 10.5 min after injection of free BSP averaged 0.30, 0.51 and 0.88 μmoles per g of liver, and was 0.13, 0.19 and 0.26 μmoles per g of liver when conjugated BSP was given. The conjugation *in vivo* apparently is the rate limiting step in the overall transport of injected free BSP from blood to bile.

4755 DUODENAL FERRITIN SYNTHESIS DURING IRON ABSORPTION IN THE IRON-DEFICIENT RAT. *(E.)*

Brittin, G. M. (U. Texas D. M. Anderson Hosp. Tumor Inst., Houston) and D. Raval. *J Lab Clin Med* 75(5): 811-817, 1970.

The incorporation of ^{14}C-DL-leucine into ferritin (isolated immunologically from duodenal homogenates) was measured in normal and iron-deficient rats before and 1, 3 and 5 hr after intraduodenal administration of iron (1 mg). The homogenates from iron-deficient animals contained hardly any ferritin (less than 2.0 μg/g gut) compared to the controls (18.6) but 5 hr after the iron administration the level increased to the base-line level of the controls (17.5) and both the deficient and control animals exhibited roughly the same net increases. The iron deficient rats had more incorporation of ^{14}C-DL-leucine (39.8 cpm/g gut), higher ^{14}C specific activity (2.1 cpm/μg protein), and higher iron absorption (26.6% of administered dose) compared to the controls (34.3, 1.11 and 1.8, resp.). When a second dose of iron was given 5 hr after the first dose, duodenal ferritin doubled in 3 hr (12.4 to 25.5) while radioiron absorption decreased (25 to 14%). Pretreatment with iron (0.25 mg i.v.) decreased absorption (25 to 20.5%) but did not affect ferritin content or radioiron incorporation. Ferritin does not seem to be important in the regulation of iron absorption.

4756 SMALL BOWEL ABSORPTION IN HYPOPHYSECTOMIZED RATS. *(E.)*

Levitan, R. (VA Westside Hosp., Chicago, Ill.) and A. Righetti. *Amer J Dig Dis* 15(3): 218-225, 1970.

An *in vivo* perfusion technique was used to measure sodium, chloride, water, and glucose absorption from an isotonic test solution from the entire small bowel (ligament of Treitz to the ileocecal valve) in normal, sham-operated, and hypophysectomized male albino Charles River rats, 5, 10, 15, and 21 days after operation. There was no difference between normal and sham-operated rats (200.62 and 189.58 mg/hr for glucose) but the hypophysectomized rats showed a 50% decrease in all 4 substances (106.35 mg/hr after 5 days for glucose). In all experiments (operated and normal rats) mean chloride absorption was greater than that of sodium. Sodium flux into and out of the intestinal lumen measured by using ^{24}Na was lower by approximately 44% in 5 hypophysectomized rats than in 7 control rats 15 days after operation. The mean and dry intestinal weights were 33% lower in the hypophysectomized rats than in normals; there were no differences between normal and sham-operated rats. The mucosal DNA measurements showed no significant difference between normal and sham-operated rats but statistically significant differences occurred between control and hypophysectomized rats. A hormonal deficiency, not only a decrease in surface area, seemingly is responsible for the observed decreased absorption in hypophysectomized rats.

4757 ABSORPTION AND EXCRETION OF AN ORAL DOSE OF TRITIATED VITAMIN K_1 IN MAN. *(E.)*

Shearer, M. J. (Guy's Hosp. Med. Sch., London, England), P. Barkhan and G. R. Webster. *Brit J Haemat* 18(3):297-308, 1970.

The absorption of Vitamin K_1 from the gastrointestinal tract into the blood and its excretion in the urine and feces was measured (by lipid extraction and chromatography) in two normal men after administration of an oral dose of tritiated vitamin K_1 (50-100 μC). Radioactivity in the plasma was detected within 30 min, and in lipid-soluble phase it reached a peak of 5000 d.p.m. per 100 ml plasma and then declined rapidly to less than 1300 d.p.m. within 12 hr; a low level of activity of less than 100 d.p.m. persisted for 96 hr. Thin-layer chromatography studies showed that over 92% of the total radioactivity was due to lipid-soluble Vitamin K_1, and the remaining plasma radioactivity was due to water-soluble material. Ultracentrifugation of serum at the time of peak absorption showed that 65.3% of the radioactivity could be floated to the top of the centrifuge (in a medium of density 1.21), and appeared in the void volume on gel filtration through Sephadex G-200. Fecal excretion of radioactivity was maximal in the first 2 days, and was complete after 5 days. During the first five days in both subjects a total of 49.5% and 54.7%, resp., of the ingested dose was present in the lipid phase, and only 2.7% and 1.9% was present in the aqueous phase. At least half of the ingested dose of labeled

Vitamin K_1 was absorbed. Excretion of radioactivity in the urine was greatest in the first 24 hr and from 8% to 19% of the dose of labeled Vitamin K_1 was recovered from the urine after 3 days.

4758 TRANSPERITONEAL EXCHANGE: V. NET WATER SHIFT ASSOCIATED WITH THE EXCHANGE OF SOLUTES BETWEEN BLOOD AND INTRAPERITONEAL 5% GLUCOSE SOLUTION. *(E.)* Aune, S. (Ulleval Hosp., Oslo, Norway). *Scand J Gastroent* 5(4):253-260, 1970.

The transperitoneal exchange of solute and water between the plasma and hyperosmolar peritoneal compartment content (induced by i.p. administration of a 5% glucose solution) was studied in rabbits. In 5 experimental rabbits, 100 ml of 5% glucose solution was given i.v., peritoneal samples were collected every 5-15 min and blood samples were collected every 20-50 min for up to 4 hr. In 3 rabbits, following 5% glucose injection, the total i.p. fluid was drained repeatedly and the time course of fluid influx was evaluated. Normal serum concentration of Na was 144 mEq/l (range: 136-150) and osmolarity was 311 mOsm/l (range: 309-314), while for peritoneal fluid, Na concentration was 144 mEq/l (range: 140-147) and osmolarity was 308 mOsm/l (range: 304-313). Peritoneal instillation of the slightly hypotonic (278 mOsm/l) 5% glucose was followed by an increased peritoneal osmolarity, exceeding serum by 20-30 mOsm/l in the course of 25-100 min. There was a concomitant net water influx from plasma into the peritoneal compartment. In one animal, 103 ml of water was transferred from the circulation into the peritoneal cavity at 0.45 ml/min on the average. Of this, 0.15 ml/min represented normal hydrodynamic production of peritoneal fluid and 0.30 ml/min was due to osmosis. Peritoneal fluid volume had increased maximally by 130 ml about 25 min after instillation of glucose, and osmolarity had increased by 30 mOsm/l at this time. The present experiments failed to demonstrate a solvent drag effect by osmosis.

4759 WATER MOVEMENT ACROSS THE CECAL WALL OF THE GERMFREE RAT. *(E.)* Loeschke, K. (U. Kentucky Coll. Med., Lexington) and H. A. Gordon. *Proc Soc Exp Biol Med* 133(4):1217-1222, 1970.

Water transport across the cecal walls was compared *in vivo* in germfree and conventional male Fischer 344 and Charles River rats. Following introduction of isotonic saline into cecal sacs (eventually ligated and placed back into abdominal cavity), absorption of fluid in germfree rats was significantly larger than conventional rats; germfree rats absorbed 20 times as much as the controls, the fluid uptake in both groups being essentially independent of volume initially present in the sac (germfree rats, mean fluid transport at 3 hr was 8.4 ± 1.2 ml and in conventional rats, 0.4 ± ml). Little change in osmotic permeability of the cecal walls of both groups was observed. In germfree and conventional rats, osmolarity of perfusion fluids in hypo- and hypertonic conditions showed a graded increase and decrease resp. Plasma osmolarity changed little during hypotonic perfusion (initial 308 ± 3 to final 311 ± 3 and 320 ± 10 mOsm/kg in germfree and conventional animals, resp.) and increased slightly in hypertonic studies (initial 308 ± 3 to 331 ± 10 and 324 ± 11 mOsm/kg in germfree and conventional animals, resp.). Osmotic water permeability was not significantly different between both groups of rats. Retention of water in cecal lumen of intact germfree rats seemingly is due to presence of osmotically active substances to which cecal mucosa is impermeable; sodium-coupled water transport appears to be increased as a compensatory mechanism.

4760 THE EFFECT OF ADENOSINE TRIPHOSPHATE ON THE TRANSMURAL POTENTIAL IN RAT SMALL INTESTINE. *(E.)* Kohn, P. G. (Dept. Physiol. Med. Res., U. Sheffield, England), H. Newey and D. H. Smyth. *J Physiol* 208(1):203-220, 1970.

The *in vivo* and *in vitro* effects of ATP on the transmural potential in the small and large intestine were studied in female albino Sheffield rats. *In vitro*, ATP in either the mucosal or serosal fluid caused a transient increase in the potential difference and short-circuit current across the wall of the jejunum, ileum and colon, with the serosal solution becoming more positive (*in vivo* preparations of small intestine yielded similar results). Although the response was relatively specific for ATP, the rapid hydrolysis of extracellular ATP could not explain the transient nature of the response. The response was inhibited by high concentrations of K^+ in the mucosal medium, serosal ouabain or mucosal 2,4-dinitrophenol without altering the time course while no significant inhibition occurred in the presence of ADP or in Mg^{2+}-free saline solutions. Theophylline (2 mM) in the mucosal medium caused the time to reach the peak increase to be doubled and the decay to be slightly slower. The presence of hexoses in the mucosal fluid (concentrations of either 2 mM or 28 mM) inhibited the ATP potential except for galactose at low concentrations, and when hexoses were present in the serosal fluid (at 222 mM), only fructose inhibited the potential to a significantly greater extent than the osmotic control (mannitol).

4761 EXPERIMENTAL OBSERVATIONS AND MATHEMATICAL CONSIDERATIONS ON THE MECHANISM OF TRANSPORT OF URIC ACID ACROSS HUMAN GASTRIC MUCOSA. *(E.)* Mertz, D. P. (Med. Polyclin. U. Frieburg, Germany). *Pfluger Arch* 316(2):132-139, 1970.

The mechanism involved in the transport of uric acid across the gastric mucosa was studied in 38 adult subjects (31 men, 7 women, 18- to 44-yr-old) in whom quantitative collections of gastric secretion and acid output were made following i.v. histalog stimulation (either 50 mg/hr or 2 mg/kg/hr). Gastric uric acid concentration declined as a hyperbolic function with increasing acidity and this decrease in uric acid concentration was compensated by a simultaneous stimulation of the gastric secretory volume rate. The gastric secretory rate of uric acid was found individually to be largely constant; collective uric acid secretion was independent of the gastric acid output. In both normal and hyperuricemic conditions, the concentration ratio of uric acid between gastric juice and plasma was 0.2-0.4. A gastric transport of uric acid by nonionic diffusion seemingly exists in human gastric mucosa.

4762 EXCRETORY PHYSIOLOGY OF STEROIDAL HORMONES IN LIVER. *(E.)* Despopoulos, A. (Sch. Med., New Mexico, Albuquerque). *J Pharmacol Exp Ther* 173(1):43-47, 1970.

The excretion of steroidal hormones (estradiol, progesterone, testosterone, methyltestosterone and cortisone) by isolated perfused rat livers was studied following single doses (20 μm) and continuous infusions (100 μm) of ^{14}C labeled steroids (in the 4-carbon position). Isotope concentrations in the perfusion fluid fell rapidly with a half-time of approximately 2 min and with 90% disappearance in 8 min and 100% in 15 to 20 min. The appearance of the isotope in the bile was delayed with 90% completion only after 50 min and all the excreted material was shown (thin layer chromatography) to be more polar than the original injected materials. Following continuous infusion, radioisotope concentrations in the perfusion fluid remained constant as well as the rates of bile flow, biliary excretion of the isotopes and their concentrations in the bile. The ratio of bile isotope concentration to perfusion fluid isotope concentration was 1000, indicating the effective concentrating mechanism. Probenecid (0.5 mM) decreased the rate of excretion, the concentration and the bile flow by 45%, 36% and 10%, resp., suggesting a role of the steroid metabolites in hepatic transport of organic anions.

4763 INCREASE OF THE UTILIZATION OF ^{59}Fe BY THE SIMULTANEOUS INGESTION OF THIS ELEMENT WITH LACTOSE OR WITH MANNITOL. *(Fr.)* Bouvet, D. (no affil). *C R Acad Sci* 270(9):1264-1267, 1970.

The effect of lactose and mannitol on iron utilization was studied in 16 Wistar rats divided into groups that received a normal diet with 2 mC ^{59}Fe and 0.3 mg iron sulfate, with or without calciferol (10 IU) and with or without lactose (400 mg) or mannitol (400 mg). Lactose caused a doubling in iron retention in red blood cells (5.87 vs 3.66), spleen (1.73 vs 1.07), and liver (0.81 vs 0.44). Pretreatment with calciferol did not affect the action of lactose. Mannitol evoked an increase in iron retention after 24 hours in the spleen and liver; after 72 hours the red blood cells increased in Fe content at the expense of splenic iron which showed a marked decrease.

4764 EFFECT OF CHOLECYSTOJEJUNOSTOMY, ROUX-Y, ON INTESTINAL ABSORPTION OF LABELED FAT, LABELED PROTEIN AND XYLOSE. *(E.)* Shin, C. S. (Methodist Hosp., Brooklyn, N. Y.) and I. F. Enquist. *Bull Soc Int Chir* 29(1):21-27, 1970.

The effect of cholecystojejunostomy, Roux-Y on the intestinal absorption of carbohydrate, fat and protein was studied in healthy mongrel dogs of both sexes using xylose, ^{131}I-labeled triolein, and ^{131}I-labeled human serum albumin, resp. Postoperative studies showed minimal alterations in protein and carbohydrate absorption, and little change in fat absorption for the first 4 hr after ingestion; however, late specimens (6 hr) in the animals with the Roux-Y reconstructions were significantly lower than they were preoperatively. Serum alkaline phosphatase and serum bilirubin were not affected by the operation.

4765 TRANSPERITONEAL EXCHANGE: IV. THE EFFECT OF TRANSPERITONEAL FLUID TRANSPORT ON THE TRANSFER OF SOLUTES. *(E.)* Aune, S. (Ulleval Hosp., Oslo, Norway). *Scand J Gastroent* 5(4):241-252, 1970.

The effect of a concurrent fluid flow on the transperitoneal transport of solutes was studied in rabbits using two experimental methods. In the first method, the disappearance of urea, PAH, inulin and serum albumin from the peritoneal cavity was compared to previously established transport of these substances from the blood capillaries into the peritoneal compartment. Test compounds were administered in a radioactive solution (5000 counts/min/ml) of RISA, and rates of absorption were determined by measuring scintillation count changes at 20 minute observation periods. On an average, urea and PAH-absorption rates from the peritoneal compartment were 2.46 and 1.02 ml/min, resp., and transperitoneal plasma clearances of the same substances through the peritoneal membrane were 2.75 and 1.38 ml/min (the differences in absorption may be due to solvent drag). The second method recorded changes in the transperitoneal plasma clearance of solvent fluid shifts due to osmotic gradients between blood and peritoneal solution. Osmotic water movement in or out of the peritoneal compartment was induced by varying the osmolarity of the peritoneal solution and varied the exchange of urea, inulin, PAH and RISA proportional to the diffusibility of the solutes. Urea clearance (net fluid flow = 0) was calculated as 2.44 ml/min, PAH-clearance was 1.38 ml/min, inulin clearance was 0.38 ml/min and serum albumin clearance (RISA) was 0.07 ml/min. Osmosis had no direct dragging influence on solute transport.

4766 INFLUENCE OF BLOOD SUPPLY ON LIPID UPTAKE FROM MICELLAR SOLUTIONS BY THE RAT SMALL INTESTINE. *(E.)* Sylven, C. (Chem. Ctr., U. Lund, Sweden). *Biochim Biophys Acta* 203(3):365-375, 1970.

White male rats were used to study lipid absorption and the specificity mechanism of sterol absorption in preparations representing a gradual transition from conditions *in vitro* to *in vivo*. Different micellar solutions containing radioactive sterols (cholesterol, sitosterol), octadecane or oleic acid and monoolein were used to study uptake into small intestine slices *in vitro*; these solutions were also injected *in situ* into rat jejunal segments which had been tied off at either end during intact and interrupted blood supply. The uptake of the different lipids in jejunal segments with an intact blood supply varied between 8 and 30% thirty min after administration; octadecane had the most rapid rate of uptake followed by oleic acid, monoolein and cholesterol, resp. The rate of sitosterol uptake was approximately one third that of cholesterol. The uptake in jejunal segments with an interrupted blood supply decreased to 1.5 to 4.5% for all species of lipid; after 5 min there was no net uptake with time. Sitosterol uptake was one-seventh that of cholesterol in jejunal segments with an interrupted blood supply. Lipid uptake decreased when a micellar solution containing KCN was injected into a jejunal segment with an intact blood supply (similar to that produced by exclusion of the blood supply). In contrast to the low uptake by segments with an interrupted blood supply, the uptake of radioactive sterols by preparations *in vitro* increased markedly with time and sitosterol was taken up to the same extent as cholesterol. Intestinal lipid absorption apparently cannot be investigated by conventional methods *in vitro* since the penetration of lipid from micelle to mucosa epithelial cell seemingly is an active process.

4767 INTESTINAL ABSORPTION OF ENZYME PROTEINS *IN VITRO:* A STUDY ON THE EVERTED-SAC METHOD. *(Jap.)* Kimura, S. (Nagoya City U. Med. Sch., Japan). *J Nagoya City Univ Med Ass* 20(4):707-721, 1970.

4768 REGULATION OF CHOLESTEROL METABOLISM: II. *(E.)* Dietschy, J. M. (U. Texas Southwestern Med. Sch., Dallas) and J. D. Wilson. *New Eng J Med* 282(21):1179-1183, 1970.

4769 A MODEL TO EXPLAIN UPHILL WATER TRANSPORT IN THE MAMMALIAN STOMACH. *(E.)* Rehm, W. S. (U. Alabama Birmingham, Med. Ctr.), C. F. Butler, S. G. Spangler and S. S. Sanders. *J Theor Biol* 27(3):433-453, 1970.

4770 PERMEABILITY OF PANCREATIC ENDOTHELIUM TO HORSERADISH PEROXIDASE. *(E.)* Walters, M. N. I. (Dept. Path., U. Western Australia, Perth), J. M. Papadimitriou, T. A. Robertson and J. M. Archer. *J Path* 100(1):31-37, 1970.

4771 STIMULATION OF INTESTINAL SODIUM ABSORPTION BY SUGARS. *(E.)* Schultz, S. G. (U. Pittsburgh Sch. Med., Pa.) and P. F. Curran. *Amer J Clin Nutr* 23(4):437-440, 1970.

4772 A NEW METHOD FOR PANCREATIC JUICE COLLECTION. *(E.)* Caboclo, J. L. F. (Hosp. Estadual Carlos Chagas -- SUSEME, Guanabara, Brazil). *Folha Med* 60(2):125-129, 1970.

4773 PHYSIOPATHOLOGY OF FAT DIGESTION AND ABSORPTION. *(E.)* Rey, J. (Hosp. Child. Dis., Paris, France). *Rev Europ Etud Clin Biol* 15(3):255-257, 1970.

4774 FORMAL KINETICS OF WATER AND SOLUTE ABSORPTION WITH REGARD TO INTESTINAL BLOOD FLOW. *(E.)* Winne, D. (Pharmacol. Inst., U. Tubingen, Germany). *J Theor Biol* 27(1):1-18, 1970.

4775 STRONTIUM INHIBITION OF VITAMIN D_3-INDUCED CALCIUM-BINDING PROTEIN (CaBP) AND CALCIUM ABSORPTION IN CHICK INTESTINE. *(E.)* Corradino, R. A. (New York St. Vet. Coll., Cornell U., Ithaca) and R. H. Wasserman. *Proc Soc Exp Biol Med* 133(3):960-963, 1970.

4776 A DISTINCT, Na^+-DEPENDENT GLYCINE TRANSPORT SYSTEM IN AVIAN SMALL INTESTINE. *(E.)* Lerner, J. (Dept. Biochem., U. Maine, Orono) and K. M. Nelson. *Biochim Biophys Acta* 203(2):434-444, 1970.

4777 A TECHNIQUE FOR THE PREPARATION OF AN INTESTINAL LOOP IN THE RAT FOR THE STUDY OF DIALYSIS OF THE JEJUNUM AS A TREATMENT FOR UREMIA. *(Fr.)* Hamburger, J. (Hosp. Necker, Paris, France), L. Donovski and C. Marche. *Path Biol* 18(7-8):403-406, 1970.

4778 EFFECT OF TETRACYCLINES ON THE ABSORPTION OF DRUGS FROM THE INTESTINE: I. EFFECT OF TETRACYCLINE ON THE ABSORPTION OF SULFANILIC ACID. *(Jap.)* Nadai, T. (Fac. Pharm., Meijo U., Nagoya, Japan), K. Nishi and A. Tatematsu. *J Pharmaceut Soc Jap* 90(3):262-266, 1970.

4779 HELVETICOSOL-^{3}H-ACETONIDE: ABSORPTION, TISSUE DISTRIBUTION AND BILIARY EXCRETION IN GUINEA-PIGS. *(Ger.)* Schaumann, W. (Med. Coll. Hannover, Germany), F. Zielske and W. Voigtlander. *Naunyn Schmiedeberg Arch Pharmakol* 266(1):75-94, 1970.

4780 EFFECT OF TANNIC ACID ON INTESTINAL ABSORPTION IN THE MOUSE. *(Fr.)* Mitjavila, S. (Fac. Sci., Toulouse, France), G. DeSaint-Blanquat and R. Derache. *Food Cosmet Toxic* 8(1):27-33, 1970.

4781 MAXIMAL HEPATIC EXCRETION OF BILIRUBIN IN SHEEP. *(E.)* Upson, D. W. (Coll. Vet. Med., Kansas St. U., Manhattan), R. R. Gronwall and C. E. Cornelius. *Proc Soc Exp Biol Med* 134(1):9-12, 1970.

4782 THE EFFECT OF CATECHOLAMINES AND NICOTINE ON THE TRANSMEMBRANAL POTENTIAL OF FROG LIVER CELLS. *(E.)* Orozco, A. (Chicago Med. Sch., Ill.) and H. C. Sabelli. *Experientia* 26(1):48-49, 1970.

4783 EFFECT OF SALINE LOADING ON ABSORPTION FROM THE CAT ILEUM *IN VIVO*. *(E.)* Gutman, Y. (Hebrew U. Hadassah Med. Sch., Jerusalem, Israel) and F. Benzakein. *Israel J Med Sci* 6(2):195-199, 1970.

ABSORPTION–EXCRETION–TRANSPORT

4784 SMALL INTESTINAL ABSORPTION OF SIMPLE SUGARS AND WATER IN THE CAT. *(E.)* Levinson, R. A. (U. Utah Coll. Med., Salt Lake City) and E. Englert, Jr. *Experientia* 26(3):262-263, 1970.

4785 METABOLISM OF β-SITOSTEROL IN MAN. *(E.)* Salen, G. (Rockefeller U., New York, N. Y.), E. H. Ahrens, Jr. and S. M. Grundy. *J Clin Invest* 49(5):952-967, 1970.

o P:Morph (4713)(4753)
o D:S.Intest:Malabs (5071)(5075)
o D:Pancreas (5143)
o D:Livbil:A.Nonv.Hep (5221)
o D:Livbil:A.V.Hep (5251)
o D:Livbil:Cirrh (5279)

MOTILITY

4786 THE RELATIONSHIP BETWEEN OXYGEN CONSUMPTION AND THE FREQUENCY OF ELECTRICAL SLOW WAVE ACTIVITY IN THE ILEUM AND DISTAL COLON OF THE RABBIT DURING EXPERIMENTAL HYPOTHYROIDISM. *(Fr.)* Couturier, D. (Fac. Med. Paris, France), C. Roze, M. H. Couturier-Turpin and C. Debray. *J Physiologie* 61(6): 461-474, 1970.

The relationship between oxygen consumption and electrical slow wave activity in the ileum and distal colon was studied in 24 rabbits, 12 of which were made hypothyroid either chemically (^{131}I) or surgically. The mean values of O_2 consumption were 15.92 ml/min in controls, 15.47 in ^{131}I-treated animals, and 11.28 in surgically treated animals (i.e. 373, 316 and 256 μl/hr/g, resp.). Histological examination of the thyroids revealed radionecrotic lesions in all ^{131}I-treated rabbits. In the distal colon of normal controls slow waves were recorded during 6% of the total time of recording with a frequency of 14.4 c/min, while in hypothyroid animals slow waves occurred 4.7% of the time with a frequency of 11.8 c/min. The mean frequency of slow waves in the ileum was 15.9 c/min in controls and 14.6 c/min in treated animals. A correlation between the frequency of electrical slow waves in the ileum and the oxygen consumption was found, and this relation seemingly holds true for the entire small intestine.

4787 THE EFFECTS OF THE FOUR MAJOR ANTIBIOTICS ON THE MOTILITY OF THE ISOLATED RABBIT JEJUNUM. *(E.)* Guiti, N. (Dept. Exp. Med. Pharmacol., U. Teheran, Iran) and M. H. Kermani. *Chemotherapy* 15(2):65-69, 1970.

The effects of penicillin G (2.4 x 10^{-8} to 9.6 x 10^{-5} g/ml), streptomycin (4 x 10^{-8} to 2 x 10^{-3} g/ml). chloramphenicol (4 x 10^{-8} to 2 x 10^{-3} g/ml) and oxytetracycline (4 x 10^{-8} to 6 x 10^{-4} g/ml) on the motility of the rabbit isolated jejunum were studied *in vitro*. Either epinephrine (8 x 10^{-8} g/ml) or isoproternal (4 x 10^{-8} g/ml) were used as comparison drugs, and several other alpha and beta adrenergic agents (phentolamine, propanalol) and cholinergic agents (eserine) were added to challenge the antibiotics. Penicillin within the dose-range used did not alter the spontaneous motor activity of the isolated jejunum. Streptomycin produced a 30% reduction in gut motility at dose of 1 x 10^{-4} g/ml, and produced complete relaxation at a dose of 2 x 10^{-3} g/ml. Phentolamine and eserine did not block the antimotility effect of 2 x 10^{-3} streptomycin. Oxytetracycline had a minimal(22%) antimotility effect at a dose of 1 x 10^{-4} g/ml, and produced complete relaxation at a dose of 6 x 10^{-4} g/ml. Chloramphenicol reduced the amplitude of contraction of the isolated jejunum by 20% at 1.6 x 10^{-3} g/ml and produced 100% relaxation at a dose of 1 x 10^{-2} g/ml. $BaCl_2$ (1.2 x 10^{-4} g/ml) blocked by 53% the antimotility effect of a dose of 6 x 10^{-4} g/ml oxytetracycline and by 75% the maximal antimotility effect of chloramphenicol. Antibiotics appear to act upon a nonspecific receptor in the rabbit jejunum which is independent of the autonomous neuromuscular junctions.

4788 CHOLINERGIC MECHANISM FOR INTESTINAL HYPERMOTILITY CAUSED BY ARTERIAL OCCLUSION. *(E.)* Yamamoto, M. (Tohoku U. Sch. Med., Sendai, Japan), N. Taira and K. Hashimoto. *Jap J Physiol* 20(1): 145-153, 1970.

The mechanism for alteration of intestinal motility induced by occlusion of the superior mesenteric artery was studied in 16 unanesthetized spinal dogs. Intestinal motility and tone was increased in 23 of 32 observations during arterial occlusion and in 24 of 32 observations immediately after the release of occlusion which was maintained for 3 min. Arterial occlusion lasting for 30 sec produced no change in motility or tone, while that for 60 sec increased motility and tone with a 30 sec latency. Neither further prolongation of the period of occlusion nor bilateral vagotomy influenced the pattern of response. Tetrodotoxin (20 μg) and atropine (100 μg) abolished the intestinal response to arterial occlusion as well as to contractions produced by 1,1-dimethyl-4-phenylpiperazinium iodide (DMPP). Phenobarbital (3 to 10 mg) greatly reduced the intestinal responses to arterial occlusion and to 30 μg of DMPP, but the response to acetylcholine (30 μg) was unchanged after phenobarbital administration. Physostigmine (10 μg) markedly potentiated while hexamethonium (1 to 10 mg) had no effect on the intestinal response to arterial occlusion. The release of acetylcholine through excitation of the intramural cholinergic neurons due to hypoxia or the CO_2 increase during arterial occlusion is seemingly responsible for the increased intestinal motility.

4789 ELECTRICAL ACTIVITY OF THE CANINE ESOPHAGUS AND GASTROESOPHAGEAL SPHINCTER: ITS RELATION TO INTRALUMINAL PRESSURE AND MOVEMENT OF MATERIAL. *(E.)* Arimori, M. (Mayo Grad. Sch. Med., U. Minnesota, Rochester), C. F. Code, J. F. Schlegel and R. E. Sturm. *Amer J Dig Dis* 15(3):191-208, 1970.

In 10 intact dogs and 3 dogs with bilateral subhilar vagotomy, myogenic electrical activity of the sphincter and adjacent esophagus and stomach was measured by the chronic implantation of bipolar silver/silver chloride electrodes. At rest, the only electrical activity detected in the body of the esophagus was of cardiac origin. With deglutition, a burst of oscillating changes in electrical potential began in the orad esophagus, and then swept caudad along the esophagus. The frequency of the action potentials was 150-170 cycles/sec and the duration of the bursts was 2.5-7.0 sec in the lower esophagus and uniformly close to 2 sec in the cervical esophagus. The action potentials in the esophagus were synchronous with the peristaltic contractions detected in the lumen. The gastroesophageal sphincter and the adjacent gastric fundus exhibited continuous phasic activity, which was reduced in the sphincter with relaxation, and in the fundus with distention of the esophagus or stomach and during anesthesia. In the orad segment of the sphincter, the inhibition of phasic activity was followed after swallowing by sphincteric action potentials which were related to sphincteric contraction, while in the caudad segment, only the inhibition of phasic activity and its return occurred. Esophageal distention caused inhibition of action potentials in the esophagus distal to the distention as well as inhibition of the sphincteric continuous phasic activity which continued until the distention was terminated. After subhilar vagotomy, intraluminal pressures and myogenic action potentials were simultaneous and of lesser magnitude in the vagotomized segment of the esophagus. Vagotomy reduced the incidence of response to swallowing by about 50% but it did not alter the motor action of the gastroesophageal sphincter.

4790 EFFECTS OF MICROBIAL CONTAMINATION OF THE CECUM ENLARGEMENT OF GERMFREE RATS. *(E.)* Gustafsson, B. E. (Karolinska Inst., Stockholm, Sweden), T. Midtvedt and K. Strandberg. *Scand J Gastroent* 5(4):309-314, 1970.

The effects of microbial contamination on the cecum enlargement and on motility in response to acetylcholine and serotonin were studied in germfree rats (384-455 days old) contaminated with *Clostridium difficile* or with fecal suspension from conventional rats. After contamination with *Cl. difficile* cecum contents (g%) were reduced during the first week and then increased (0.3) for the remaining 15 weeks of the investigation; after contamination with a fecal suspension from conventional rats, cecum contents dropped to the normal level (0.05) within a week and remained there. Cecum wall weight (g%) dropped in both groups (approximately 0.02) but did not reach the normal level (0.15), water content of the cecum increased insignificantly during the first week for both groups and then was the same as that of conventional rats (82%), and water content of the cecum wall never varied (75 to 80%) in both groups. The low muscular activity of the germfree cecum in response to acetylcholine and serotonin was not affected by contamination and other smooth muscle organs of the germfree rats (duodenum, ileum, colon and uterus) did not exhibit low muscular sensitivity (although similar studies run with younger rats 21-24 days old indicated that the cecum muscular sensitivity of the germfree cecum after contamination resembled that of the conventional rat). Cecum wall sensitivity to other smooth muscle stimulants (with different modes of action) and to barium and potassium chloride reflected a parallelism irrespective of microbial status with variable responses.

4791 MOTOR ACTIVITY *IN VITRO* OF SMALL INTESTINE FOLLOWING WHOLE-BODY X-IRRADIATION. *(E.)* Kagnoff, M. F. (Boston U. Med. Ctr., U. Hosp., Mass.). *Radiat Res* 42(3):565-576, 1970.

The contractions of small intestinal segments (duodenum, jejunum, ileum) from adult Sprague-Dawley rats were studed *in vitro* for up to 30 days following exposure of the rats to whole body radiation. Sham-irradiated rats served as controls. Jejunal segments of sham-irradiated rats exhibited an irregular contraction pattern with intermittant brief regular periods. There was a significant increase in contraction regularity 2 and 3 days after 700 R (60% regularity), 1500 R (88% regularity) and 100 R (58% regularity), compared with 25 R (30% regularity) and sham irradiation (30% regularity). Also exposures with 1500 R and 700 R increased contraction amplitude to 0.12 mm and 0.07 mm, resp., compared with a sham-irradiated amplitude of 0.05 mm. Segments of proximal duodenum showed an increase in regularity to 46% (compared with a sham-irradiated duodenal value of 16.7% regularity) 2 and 3 days following a dose of 1500 R. Ileal segments showed no significant increase in irregularity. Also the gradient of contraction frequency (duodenum > jejunum > ileum) was maintained, but the gradient for contraction regularity (ileum > jejunum > duodenum) was abolished following whole body exposure of rats to doses of 1500 R.

4792 EFFECT OF HETERONIUM BROMIDE ON GASTRIC ACID SECRETION AFTER HISTAMINE AND ON GASTRIC EMPTYING MEASURED BY RADIO-VIATMIN B_{12} AS AN INDICATOR. *(E.)* Bennett, R. (New York Med. Coll., New York) and G. B. Jerzy Glass. *Amer J Gastroent* 53(4):330-338, 1970.

The effect of graded doses of heteronium bromide on gastric output stimulated by augmented histamine test and on gastric emptying (as measured by the radioactive-Vitamin B_{12} marker technique) were determined in 18 patients with miscellaneous gastrointestinal disorders. Following the administration of heteronium bromide (total dose 6.4-9.6 mg) one and two hr prior to histamine, total output of acid and gastric juice were reduced as a function of dose of heteronium bromide with little change in acid concentration of the juice. Heteronium bormide in doses of 4.8, 6.4, or 8.0 mg reduced the mean volume of the standard (psyllium) meal emptied from the stomach in 11 of the 12 patients from 264 ml (control) to 137, 152 and 147 ml, resp., when given 2 to 2½ hr prior to the meal. Statistical analysis of the differences between the mean gastric juice volume emptied for any dose of heteronium bromide (1.6 to 8.0 mg) and no drug controls (83.0 mg) proved them to be significantly different ($p < 0.001$). Secretory volume was decreased from 160 ml/min to 46, 40 and 68 ml/min, resp., for the aforementioned doses.

4793 ANALYSIS OF THE SITE OF NICOTINE ACTION ON GASTRIC ANTRAL AND DUODENAL CONTRACTILE ACTIVITY. *(E.)* Bass, P. (Parke Davis Co. Res. Lab., Ann Arbor, Mich.), G. M. Carlson, B. W. Ruddon, C. C. Hug, Jr. and S. K. Schmiege. *J Pharmacol Exp Ther* 172(2):377-383, 1970.

An analysis of the site of nicotine action on gastric antral and duodenal contractile activity was conducted in 102 anesthetized mongrel dogs with acutely implanted extraluminal strain gauge force transducers. Close intra-arterial infusions of nicotine, 5-25 µg/kg/min, produced initial variable stimulation followed by inhibition of contractile activity of both gastric antrum and duodenum. Nicotine-induced spontaneous contractile activity in 5 anesthetized dogs was completely abolished by intra-arterial injection of 10 µg of tetrodotoxin. I.V. administration of nicotine, 100 µg/kg produced initial inhibition of contractile activity followed by stimulation. Inhibition produced by i.v. nicotine was decreased by adrenalectomy (38%), vagotomy combined with splanchnicotomy (26%) and vagotomy combined with spinal anesthesia (49%). Secondary stimulation of contractile activity induced by i.v. nicotine was abolished by adrenalectomy. Inhibition of contractile activity by i.v. nicotine was attributed to activation of adrenergic systems. Adrenergic mediators released by nicotine seemingly act on neuronal elements rather than directly on smooth muscle since nicotine inhibited vagal-stimulated but not metacholine-induced contractile activity.

4794 EFFECT OF THE C-TERMINAL OCTAPEPTIDE OF CHOLECYSTOKININ ON GUINEA PIG ILEUM AND GALL-BLADDER *IN VITRO. (E.)* Hedner, P. (U. Hosp. Lund, Sweden). *Acta Physiol Scand* 78(2):232-235, 1970.

The effects of C-terminal octapeptide of cholecystokinin were studied in guinea pig ileum and gallbladder *in vivo*. Octapeptide regularly produced a submaximal gallbladder contraction at 0.5 ng/ml and comparable responses were obtained by cholecystokinin, 0.015 units/ml, and by pentagastrin, 1 µg/ml. Octapeptide responses were resistant to acetylcholine and tetrodotoxin. The lowest effective dose of octapeptide that produced contraction in the longitudinal muscles of ileum was 0.5 ng/ml. The contractile response with 2 µg/ml of pentagastrin was similar to that induced by 1 ng/ml of octapeptide. Both responses were reduced slightly (20%) or not at all by hexamethonium (16 µg/ml) and were completely inhibited by tetrodotoxin (0.4 µg/ml), which did not affect the response to acetylcholine (0.02 µg/ml). Atropine (0.08 µg/ml) completely blocked responses to acetylcholine, cholecystokinin, pentagastrin and to octapeptide. In circular muscles, propagated contractions were obtained by increasing intraluminal volume, by acetylcholine (0.01 µg/ml), by octapeptide (down to 0.1 ng/ml) and by cholecystokinin (down to 0.003 units/ml); hexamethonium (8 µg/ml) inhibited response to increased intraluminal volume, to acetylcholine and sometimes to lowest effective doses of octapeptide and cholecystokinin but not to higher doses (over 1.0 ng/ml and 0.03 units/ml resp). Overall molar activity of octapeptide was comparable to caerulein and about 3 times that of cholecystokinin and 1000 times that of pentagastrin. C-terminal octapeptide of cholecystokinin seemingly is the most active gallbladder contracting agent known at present with molar activity 100 times that of acetylcholine, histamine or bradykinin.

4795 THE ACTION OF ANGIOTENSIN ON THE HUMAN COLON *IN VITRO. (E.)* Fishlock, D. J. (London Hosp. Med. Coll., England) and A. Gunn. *Brit J Pharmacol* 39(1):34-39, 1970.

The action of angiotensin *in vitro* on longitudinal and circular muscle strips was studied using specimens dissected from the distal half of the human colon and mounted in a 10 ml bath containing Krebs solution (37°) gassed with 95% O_2 and 5% CO_2. The muscle preparations were treated with acetylcholine, angiotensin II, atropine sulfate (10 µg/ml), hexamethonium bromide (20 µg/ml), lidoflazine (500 ng/ml) and procaine HCl (50 µg/ml), and the response contractions were recorded with an isotonic direct-writing lever on a smoked drum. Because angiotensin caused prolonged tachyphylaxis, the intervals between additions of angiotensin were 50-60 min, and frequent washouts were interspersed. All longitudinal and circular muscle strips contracted in response to acetylcholine and angiotensin. The ED50 value (g/ml) for acetylcholine was 1.6×10^{-6} in circular muscle and 1.1×10^{-6} for longitudinal muscle, and for angiotensin were 8.7×10^{-8} and 3.1×10^{-8}, resp. Although angiotensin caused a sustained contraction due to prolonged tachyphylaxis, there was no cross tachyphylaxis between angiotensin and acetylcholine. Procaine and hexamethonium had no effect on the responses of the smooth muscle to either agonist while exposure to atropine sulfate reduced responses of muscle to acetylcholine (ED50 $= 6.17 \times 10^{-6}$) but had no effect on responses to angiotensin. A concentration of 50 ng/ml of lidoflazine applied for 90 min did not affect response to acetylcholine or angiotensin but above this dose, lidoflazine reduced smooth muscle responses to both agonists, but there was no significant difference between the antagonist effects on the actions of angiotensin and acetylcholine.

4796 A METHOD OF RECORDING THE GASTRIC ELECTRICAL ACTIVITY IN MAN. *(E.)* Monges, H. (Hosp. Nord, Marseilles, France) and J. Salducci. *Amer J Dig Dis* 15(3):271-276, 1970.

Electrical activity in the gastric antrum of 40 healthy adults (28 men, 12 women) fasted for 12 hr and placed in a supine position was recorded with electrodes that were introduced p.o. into the gastric cavity and applied by suction to the mucosa. The electrical activity was recorded in a bipolar method with two stainless steel needle electrodes placed 2 mm apart in a rubber cup together with a pressure balloon placed near the cup. The electrodes were run into the rubber cup in order to lie transverse to the gastric longitudinal muscle layer. During the investigation the electrodes were positioned under fluoroscopic control and a catheter in communication with the cavity of the rubber cup was connected with a suction pump by which a negative pressure (-100 mg Hg) was applied to the cavity of the rubber cup. Electrical activity, pressure and respiration were simultaneously recorded on an 8-channel recording apparatus. Good recordings were made of the pacesetter potential and the fast spiking activities during the contractions.

4797 THE EFFECT OF PROSTAGLANDIN E_1 AND BRADYKININ ON NORMAL AND DEPOLARIZED ISOLATED DUODENUM OF THE RAT. *(E.)* Turker, R. K. (Fac. Med., U. Ankara, Turkey) and A. Ozer. *Agent Action* 1(3):124-127, 1970.

The relaxing effect of prostaglandin E_1 (PGE_1) and bradykinin on rat isolated normal and KCl-depolarized duodenum was studied and compared with that of isoprenaline. PGE_1, bradykinin and isoprenaline relaxed the rat isolated duodenum in normal Tyrode's solution; bradykinin and PGE_1 showed a linear dose-response relationship. The minimal effective concentration of bradykinin was 0.1 ng/ml, that of PGE_1 was 5 ng/ml and that of isoprenaline 2 ng/ml. PGE_1 and bradykinin produced a contraction and isoprenaline produced relaxation when the duodenum was depolarized by isotonic KCl-Tyrode's solution. No tachyphylaxis was observed with the contractile effect of PGE_1 and bradykinin. The relaxing effect of isoprenaline was diminished but not abolished when the duodenum was depolarized in calcium-free isotonic KCl-Tyrode's solution, while the contractile effect of bradykinin, but not that of PGE_1 in depolarized medium was dependent on calcium content of external medium. PGE_1, bradykinin, and KCl seemingly act on the pool of adrenergic neurons and produces a liberation of catecholamines. In addition to catecholamine release, KCl apparently causes depolarization of the cell membrane of smooth muscle.

4798 HUMORAL FACTORS WHICH CONTROL THE MOTOR-FUNCTION OF PEDUNCULATED AND FREE TRANSPLANTED GASTROINTESTINAL TUBES FOR ESOPHAGEAL RECONSTRUCTION. *(E.)* Yukimori, S. (Kyoto U. Med. Sch., Japan). *Arch Jap Chir* 38(6):777-795, 1969.

4799 MOTILITY OF THE DIGESTIVE TRACT AFTER ADMINISTRATION OF MEDIUM CHAIN TRIGLYCERIDES (MCT) AS COMPARED WITH LONG CHAIN TRIGLYCERIDES (LCT). *(E.)* Pirk, F. (Inst. Human Nutrit., Prague, Czechoslovakia) and I. Skala. *Digestion* 3(2):73-80, 1970.

4800 THE TRANSMUCOSAL ELECTRIC POTENTIAL DIFFERENCE OF RECTUM IN THE UNANESTHETIZED MAN. *(E.)* Dalmark, M. (Commun. Hosp., Copenhagen, Denmark). *Scand J Gastroent* 5(4):277-282, 1970.

4801 EFFECTS OF NICOTINE ON GASTRIC ANTRAL AND DUODENAL CONTRACTILE ACTIVITY IN THE DOG. *(E.)* Bass, P. (Parke Davis Co. Res. Lab., Ann Arbor, Mich.), G. W. Carlson, R. W. Ruddon and C. C. Hug, Jr. *J Pharmacol Exp Ther* 172(2):367-376, 1970.

4802 DEFECATION AND CONTINENCE: SOME NEW CONCEPTS. *(E.)* Scharli, A. F. (U. Pittsburgh Sch. Med., Pa.) and W. B. Kiesewetter. *Dis Colon Rectum* 13(2):81-107, 1970.

4803 IONIC DETERMINANTS OF ELECTRICAL POTENTIAL IN THE *IN VIVO* SMALL INTESTINE. *(E.)* Jacobson, E. D. (U. Oklahoma Med. Ctr., Oklahoma City), A. C. Brown and R. L. Vick. *Gastroenterology* 58(3):363-370, 1970.

4804 EFFECT OF NEOSTIGMINE AND ATROPINE ON MOTOR ACTIVITY OF ILEUM, COLON, AND RECTUM OF ANESTHETIZED SUBJECTS. *(E.)* Wilkins, J. L. (London Hosp., England), J. D. Hardcastle, C. V. Mann and L. Kaufman. *Brit Med J* 1(5699):793-794, 1970.

o P:Secr:Panc (4815)
o P:Gen (4877)
o Diagproc (4898)(4939)
o D:Stomduo:Peptulc (5032)
o D:L.Intest (5090)
o D:Gen (5338)

SECRETION AND METABOLISM

Stomach

4805 THE EFFECT OF KININ HORMONES UPON GASTRIC SECRETION: III. ACTION OF SYNTHETIC ELEDOISIN. *(Ger.)* Mertz, D. P. (Med. Polyclin. U. Freiburg, Germany), W. Poppe and G. Poser. *Med Klin* 65(12):548-551, 1970.

The effect of synthetic eledoisin, as a peripheral vasodilator upon the gastric juice was studied during submaximal acid stimulation (50 mg Histalog/hr) in 12 fasting males by gastric biopsy, roentgenography or gastroscopy. Immediately following the start of a 10 min infusion of eledoisin (0.005-0.01 μg/min/kg, i.v.), there was a transitory, light but significant increase in volume rate, hydrogen, chloride and potassium ion concentration (14-22%), which decreased (with continuing eledoisin) in the next 20 min to initial values. During and following the discontinuation of eledoisin, magnesium ions and gastric juice decreased significantly. Because eledoisin did not increase mesenteric circulation, it evidently occupies a position between angiotensin and bradykinin. Blood circulation and secretory production of the gastric mucosa is decreased by angiotensin and increased by bradykinin.

4806 PEPTIDES OF NORMAL HUMAN GASTRIC JUICE. *(E.)* Heathcote, J. G. (U. Salford, England) and R. J. Washington. *Int J Protein Res* 2(2):117-126, 1970.

The isolation and characterization of gastric peptides was performed in pooled resting samples of normal human gastric juice. Samples contained a decapeptide of low chromatographic mobility. The sequential structure of the peptide was, Leu-Ala-Ala-Gly-Lys-Val-Glu-Asp-Ser-Asp and the approximate molecular weight ranged from 1000 to 1020 by various methods. Two of five gastric samples also contained a peptide of slightly higher Rf value in smaller quantities. The peptide was tentatively identified as a nonapeptide with alanine as the N-terminal amino acid. The acid composition was otherwise identical with that of decapeptide, N-terminal leucine being the only amino acid absent. These 2 peptides had not been previously reported to be present in normal human gastric juice; they were not observed in samples from pernicious anemia patients.

4807 INHIBITION OF THE PENTAGASTRIN-STIMULATED GASTRIC ACID SECRETION IN THE RAT BY ANTI-GASTRIN-LIKE SUBSTANCE. *(E.)* Varro, V. (U. Med. Sch., Szeged, Hungary) and J. Nafradi. *Scand J Gastroent* 5(4):273-275, 1970.

The inhibitory effects of 2-phenyl-(2-pyridil) thioacetamide (antigastrin) on the pentagastrin-stimulated (0.5 μg/100 g body weight i.v.) gastric acid secretion was studied by gastric perfusion of Wistar rats. When given 20 min before pentagastrin, antigastrin at doses of 1 to 35 mg/kg i.v. caused no inhibition while at doses of 40 to 100 mg/kg it caused total inhibition (partial inhibition was noted in 1 animal at 50 mg/kg and in 2 animals at 66 mg/kg), and the inhibition at the higher doses (70 to 100 mg/kg) lasted 180 to 270 min. Antigastrin given 10 min after the test dose of pentagastrin shortened the secretory response.

4808 GASTRIN, AN ANTRAL HORMONE OF THE STOMACH. *(Fr.)* Halter, F. (U. Clin. Med. Int., Berne, Switzerland) and P. Kerkhoven. *Rev Med Suisse Roman* 90(3):247-260, 1970.

4809 ACTION OF NICOTINE ON H^+ SECRETION, POTENTIAL AND RESISTANCE IN ISOLATED BULLFROG GASTRIC MUCOSA. *(E.)* Nakajima, S. (U. Alabama Med. Ctr., Birmingham). *Proc Soc Exp Biol Med* 133(4):1228-1231, 1970.

4810 CARBOXYL-TERMINAL SEQUENCE OF HUMAN GASTRICSIN AND PEPSIN. *(E.)* Huang, W. Y. (U. Oklahoma Sch. Med., Oklahoma City) and J. Tang. *J Biol Chem* 245(9):2189-2193, 1970.

4811 CHANGES IN STOKES RADIUS ON BINDING OF VITAMIN B_{12} TO HUMAN INTRINSIC FACTOR AND TRANSCOBALAMINS. *(E.)* Hippe, E. (Bispebjerg Hosp., Copenhagen, Denmark). *Biochim Biophys Acta* 208(2):337-339, 1970.

P:Secr:Stom

- P:Morph (4706)(4734)(4751)
- P:Absorp (4761)
- P:Motil (4789)(4792)
- Diagproc (4910)(4935)
- D:Stomduo (4998)
- D:Stomduo:Peptulc (5019)(5033)
- D:S.Intest:Malabs (5071)
- D:Gen (5382)

SECRETION AND METABOLISM

Pancreas

4812 AUTOMATIC DETERMINATION OF AMYLASE IN DUODENAL JUICE. *(Fr.)* Bourse, R. (Hosp. Purpan, Toulouse, France), N. Vaysse and D. Augier. *Rev Med Toulouse* 6(1):89-94, 1970.

4813 EFFECT OF FASTING ON EXTERNAL PANCREATIC SECRETION IN VOLUNTEERS. *(E.)* Bucko, A. (Inst. Human Nutrit., Bratislava, Czechoslovakia), Z. Kopec, M. Ovecka and J. Grunt. *Nutr Metab* 12(2):87-95, 1970.

4814 INHIBITION OF PANCREATIC LIPASE BY TETRACYCLINES. *(E.)* Shalita, A. R. (Dept. Derm., New York U. Sch. Med., N. Y.) and V. Wheatley. *J Invest Derm* 54(5):413-415, 1970.

4815 TRIBUTYRINE AS A SUBSTRATE FOR DETERMINATION OF LIPASE ACTIVITY OF PANCREATIC JUICE AND SMALL INTESTINAL CONTENT. *(E.)* Erlanson, C. (Chem. Ctr., U. Lund, Sweden) and B. Borgstrom. *Scand J Gastroent* 5(4):293-295, 1970.

4816 MECHANISM OF AMYLASE SECRETION BY THE PANCREAS OF THE PIGEON. *(E.)* Dandrifosse, G. (Dept. Biochem., U. Liege, Belgium). *Comp Biochem Physiol* 34(1):229-235, 1970.

4817 HYDROLYSIS OF MONOMOLECULAR FILMS OF TRIOCTANOIN BY PORCINE PANCREATIC LIPASE. *(E.)* Garner, C. W. (Baylor Coll. Med., Houston, Texas) and L. C. Smith. *Biochem Biophys Res Commun* 39(4):672-682, 1970.

o P:Morph (4738)(4749)(4750)
o P:Absorp (4770)(4772)
o P:Secr:Hepatobil (4837)
o D:Gen (5360)

SECRETION AND METABOLISM

Hepatobiliary Tract

4818 COINDUCTION OF RAT LIVER BRANCHED CHAIN α-KETO ACID DEHYDROGENASE ACTIVITIES. *(E.)* Wohlheuter, R. M. (Dept. Biochem., U. Wisconsin, Madison) and A. E. Harper. *J Biol Chem* 245(9):2391-2401, 1970.

A branched chain α-keto acid dehydrogenase assay, using carboxyl-labeled keto acids, was used to measure the tissue and subcellular distribution of α-ketoisocaproate dehydrogenase activity in the rat, and the coinduction of the branched chain keto acid dehydrogenase activities of α-ketoisocaproic, α-ketoisovaleric and α-keto-β-methylvaleric acids by several amino acids and by increased dietary protein. Radioactive purity of the α-keto acids were checked by scanning paper chromatograms and α-keto acid dehydrogenase activities were estimated by measuring the $^{14}CO_2$ evolved during incubation with tissue preparations. The α-ketoisocaproic acid dehydrogenase was found almost exclusively in the liver (93% distribution of activity), while leucine-α-ketoglutarate amino-transferase was found predominantly in the kidney. In the liver, the α-ketoisocaproic, α-ketoisovaleric and α-keto-β-methylvaleric acid dehydrogenase-specific activities increased linearly and in constant proportion to each other as the protein content of the diet was increased from 0 to 30%. The average adjusted specific enzyme activity rose from a base level of 60 units at 0% casein in the diet to a maximum activity level of nearly 230 units when 30% casein was present in the diet (at higher concentrations of casein there was no further increase). The modulation of dehydrogenase activity appeared to result from the combined effects of a cycloheximide-sensitive mechanism which adapted to daily protein intake, and a cycloheximide-insensitive mechanism which involved a daily activation-deactivation cycle.

4819 EFFECT OF METHYLCOBALAMIN ON PROTEIN CONTENT IN LIVER AND SERUM OF PARTIALLY HEPATECTOMIZED RAT. *(E.)* Koizumi, T. (Osaka U. Med. Sch., Japan), T. Suematsu, K. Hiramatsu and H. Abe. *Experientia* 26(3):282-283, 1970.

The effect of methylcobalamin (20 µg/100 g/day, i.m.) on the serum and liver protein concentrations was determined in normal Sprague-Dawley rats, in rats with chronic hepatic damage (carbon tetrachloride inhalation) and in rats after partial hepatectomy, or healthy. Serum protein concentrations (g/l) were lower in the animals with liver damage (15) than in the normal controls (22) while liver protein concentrations (mg/g wet weight) were similar in the 2 groups (approximately 13). After partial hepatectomy, methylcobalamin showed no difference from untreated animals in serum or liver protein concentrations but after partial hepatectomy of rats with chronic hepatic damage, serum (21) and liver (17) protein concentrations were significantly higher than those of the control group (18 and 13, resp.). Methylcobalamin apparently increases protein synthesis and accelerates regeneration of the liver with chronic damage.

4820 PHOSPHOLIPID SYNTHESIS AND EXCHANGE IN ISOLATED LIVER CELLS. *(E.)* Jungalwala, F. B. (Agric. Res. Inst. Counc. Inst. Anim. Physiol., Cambridge, England) and R. M. C. Dawson. *Biochem J* 117(3):481-490, 1970.

Phospholipid synthesis and exchange was investigated in isolated liver cells of Wistar rats. $[^{32}P]$phosphate incorporated into phospholipids in liver cells was present in phosphatidic acid, to a smaller extent in phosphatidylinositol, and a lesser extent into nitrogen-containing phospholipids. Synthesis of nitrogen-containing phospholipids from $[^{32}\text{P}]$phosphate by whole cells was possible with addition of cell supernatant fraction to cell suspension during incubation. The supernatant fraction was incapable of synthesizing phospholipids on its own. After pulse-labeling with $[^{32}\text{P}]$phosphate both microsomal and mitochondrial phosphatidic acid showed a rapid fall in radioactivity within first 20 min and this fall in radioactivity and rise in that of mitochondrial phospholipids was interpreted as providing evidence of transfer of labeled phospholipid molecules from synthetic site (endoplasmic reticulum) to mitochondrial membranes in intact cells. Mitochondrial phosphatidylcholine, phosphatidylethanolamine and phosphatidylinositol formation seemingly occurs within the endoplasmic reticulum.

4821 THE EFFECT OF CYCLOHEXIMIDE ON RNA SYNTHESIS IN REGENERATING RAT LIVER.

(E.) Neal, G. E. (Marie Curie Mem. Found., Oxted, Surrey, England), M. Y. Ali-Khan and F. R. Mangan. *Biochim Biophys Acta* 209(1):257-259, 1970.

The effect of cycloheximide on RNA synthesis in regenerating rat liver was studied in male Sprague-Dawley rats. Cycloheximide (10 mg/100 g body wt, i.p.) reduced the *in vivo* level of incorporation of ^{3}H-leucine into hot (90°) 10% trichloroacetic acid-insoluble material to less than 10% of the control level of incorporation in both nuclear and cytoplasmic cell fractions. The effect of an *in vivo* injection of cycloheximide on the endogenous nuclear RNA polymerase activity, and on the nuclear template capacity of sham-operated and partially hepatectomized rats (measured *in vitro*), showed that the addition of 100 μg cycloheximide to the assay media had no effect, indicating that the inhibitor did not interfere with nucleotide polymerization. The enhanced nuclear template capacity, accompanied by increased sensitivity to cycloheximide *in vivo* developed (following partial hepatectomy) in chromatin already present in the cells within 6 hr, four hours before the onset of DNA synthesis.

4822 REDOX-DEPENDENT CONFORMATIONAL CHANGES OF RABBIT LIVER CYTOCHROME P-450.

(E.) Yong, F. C. (Dept. Chem., St. U. New York Albany), T. E. King, S. Oldham, M. R. Waterman and H. S. Mason. *Arch Biochem Biophys* 138(1):96-100, 1970.

The optical rotary density changes (induced by redox changes) of cytochrome P-450 from rabbit liver endoplasmic reticulum were measured as compared to corresponding conformational changes of cytochrome P-420. Cytochrome P-450 particles were prepared from livers of phenobarbital-treated rabbits and contained no other heme compound. The conversion of cytochrome P-450 to P-420 was carried out under anerobic conditions using a Thunberg-type cell and urea as converting agent. Optical rotary density changes were made with a Cary Model 60 spectropolarimeter programmed with fixed band width of 15 Å. The oxidized cytochrome P-450 showed a negative Cotton effect, with a minimum at 432.5 nm and a maximum at 410 nm. The inflexion point of the Cotton effect was close to the absorption maximum of oxidized cytochrome (418 nm) and the peak-trough was 124 x 10^3 degrees. The CO complex of the reduced cytochrome P-450 exhibited a Cotton effect with a negative low point at 465 nm and a positive peak at 447.5 nm, and an amplitude of 63 x 10^3 degrees. Reduction of dithionite abolished the Cotton effect completely. Treatment of P-450 particles with potassium iodide, cholate, PCMS or urea converted the cytochrome P-450 into cytochrome P-420, which in its oxidized, reduced, and reduced CO complex form exhibited no anomalous rotation in any form in the Soret region, and the entire dispersion curves were displaced toward levorotation.

4823 EFFECT OF ADRENALECTOMY ON THE RESPONSE OF RAT LIVER POLYRIBOSOMES TO WHOLE-BODY RADIATION.

(E.) Yatvin, M. B. (U. Wisconsin Med. Sch., Madison). *Experientia* 26(3):253-254, 1970.

The effect of bilateral adrenalectomy on the response of liver polyribosomes to whole body radiation (60 R/min with a 2000 ^{132}C source emitting 662 KeV gamma rays) was studied in male Badger rats. There was a marked shift in liver polyribosome species of intact rats 20 hr after whole-body gamma radiation, but no polyribosome response occurred in liver of adrenalectomized, irradiated rats, even when exposed to doses up to 10,800 R. The percentage ratio of heavy polyribosomes to total number of liver polyribosomes was 59.1 ± 3.6 in intact rats receiving 900 R of gamma radiation, compared with a preradiation ratio of 40.8 ± 2.1. Before irradiation, the percentage ratio in adrenalectomized rats was 41.7 ± 3.4, and was changed to only 40.8 ± 1.9 at 900 R and to 38.5 ± 2.8 at 10,800 R radiation level treatments. Twenty-four hr after administration of cortisone acetate (100 mg/kg) to adrenalectomized rats, the polyribosome distribution ratio shifted to a value of 65.7 ± 5.3, indicating that the failure to obtain a polyribosome response to the stress of radiation in adrenalectomized rats is a result of their inability to excrete adrenal corticoids.

4824 EFFECTS OF CORTISONE ON RIBOSOMAL RNA SYNTHESIS IN RAT LIVER.

(E.) Loeb, J. N. (Columbia U. Coll. Physicians Surgeons, New York, N. Y.) and E. M. Tolentino. *Endocrinology* 86(5): 1033-1040, 1970.

The effects of a single dose (12.5 mg i.p.) and repeated doses (5 mg/day for 15 days s.c.) of cortisone acetate on rat liver ribosomal RNA synthesis (isolated by sucrose density gradient) was studied. Two groups of fasted animals that had received single cortisone doses were given $^{32}PO_4$ (1 mC i.p.) and orotic acid -6-^{14}C (4.2 μC i.p.) resp. The greater apparent incorporation of phosphate (1640 cpm/A260 over the control value 361) compared to that of orotate (225 cpm/A260 over the control value 93) indicated that cortisone increases the specific activity of phosphate pools in the animals given $^{32}PO_4$ and that the effects of cortisone on the liver RNA content must be studied directly. Single cortisone doses increased both ribosomal and non-sedimentable RNA content (mg RNA/mg DNA) in both fed (3.70 to 4.62) and fasted rats (3.17 to 3.81) but repeated administration prevented increases in body weight and liver DNA, RNA, and protein.

4825 CATABOLISM OF HEME *IN VIVO*: COMPARISON OF THE SIMULTANEOUS PRODUCTION OF BILIRUBIN AND CARBON MONOXIDE.

(E.) Landaw, S. A. (U. California Med. Ctr., San Francisco), E. W. Callahan, Jr. and R. Schmid. *J Clin Invest* 49(5):914-925, 1970.

The quantitative relation between heme catabolism and formation of bilirubin and carbon monoxide was studied in untreated rats and Sprague-Dawley rats treated with phenobarbital or the porphyrogenic drug, allylisopropylacetamide. Quantitation of bilirubin-^{14}C and ^{14}CO was performed by use of a metabolic chamber permitting continuous bile and breath collection. After i.v. infusion of hematin-^{14}C, controls and phenobarbital-treated rats produced equimolar amounts of labeled bilirubin and CO (bilirubin recovery—controls, 49-61%, phenobarbital, 67%; CO recovery—controls, 48-59%, phenobarbital, 68%.). Equimolar amounts of labeled bilirubin and CO were observed after pulse-labeling with glycine-2-^{14}C; in phenobarbital-treated rats, both metabolites were formed at an increased rate compared to controls. Total ratio of the amount of isotope in bilirubin and CO was 1.01 and 1.02 in phenobarbital-treated animals. By contrast, allylisopropylacetamide treatment reduced fractional conversion of hematin-^{14}C to bilirubin and CO (ratio, 1.31 and 1.20). Recovery of labeled CO and bilirubin was less than controls, although total radioactivity in bile was comparable to untreated or phenobarbital-treated rats. Comparable results were obtained in allylisopropylacetamide-treated rats after glycine-2-^{14}C pulse labeling. Findings suggest that (1) in control and phenobarbital-treated rats, infused hematin and heme formed in liver are converted predominantly to bilirubin and CO (equimolar amounts) and only small amounts of hematin are degraded to other metabolites; (2) phenobarbital treatment results in proportional increase in bilirubin and CO formation (increased heme synthesis and degradation in liver); (3) treatment with allylisopropylacetamide shifts CO/bilirubin ratio in favor of gas, and enhances formation of nonbilirubin metabolites.

826 EFFECTS OF X-RADIATION ON AMINO ACID INCORPORATION INTO REGENERATING LIVER PROTEINS.

(E.) Ariyama, K. (Div. Biol. Med. Sci., Brown U., Providence, R. I.), N. Fausto, E. Tamvakopoulos and J. L. Van Lancker. *Radiat Res* 42(3):528-538, 1970.

The incorporation of ^{14}C-leucine and ^{14}C-lysine into nuclear and cytoplasmic proteins was investigated in irradiated and nonirradiated regenerating or normal Sprague-Dawley rat livers. X-irradiation interfered with incorporation of ^{14}C-lysine (but not with ^{14}C-leucine) into nuclear proteins of regenerating livers. X-irradiation also altered incorporation of ^{14}C-lysine into isolated nuclei obtained from regenerating liver of irradiated animals. Microsomes and ribosomes obtained from 24-hr regenerating livers of irradiated and nonirradiated rats were similar in contributing to the incorporation of ^{14}C-leucine or ^{14}C-lysine into protein in standard incubation mixture. A moderate degree of interference by irradiation was observed when incorporation of ^{14}C-lysine *in vitro* into nuclei from livers of irradiated rats were compared to incorporation into nuclei from nonirradiated rats. Nuclear RNA extracted from hot phenol from irradiated or nonirradiated regenerating liver, stimulated amino acid incorporation *in vitro* to the same degree whatever its source. Alteration in protein synthesis produced by X-irradiation seemingly is caused by a decrease in production of nuclear RNA and possibly, specific types of messenger RNA.

4827 EFFECTS OF THYROTOXICOSIS ON FOLATE COENZYMES AND RELATED ENZYMES IN RAT LIVER.

(E.) Pasquali, P. (Inst. Chem. Biol., Appl. Biol., U. Bologna, Italy), L. Landi, C. Bovina and M. Marchetti. *Endocrinology* 86(5):1163-1166, 1970.

The effects of thyroxine (500 μg/day s.c. for 10 days) on the distribution of folate derivatives and on the enzymic activities responsible for their synthesis were studied using rat liver homogenates. Concentrations of the derivatives (ng/g tissue) decreased from normal values (10-formyltetrahydrofolate 770 to 415, 5-methyltetrahydrofolate 4264 to 3464, 5-formyltetrahydrofolate 1643 to 1046, tetrahydrofolate 1100 to 650, and 5,10-methylenetetrahydrofolate 789 to 250). Tetrahydrofolate dehydrogenase activity decreased (3.22 nm dihydrofolate/min/mg protein) from the nontreated control (4.35), the enzymic activity converting folate to tetrahydrofolate decreased (0.82 nm tetrahydrofolate/40 min/mg protein) from the normal (1.17), serine hydroxymethyltransferase dropped (939 to 439 nm formate utilized/20 min/mg protein), formyltetrahydrofolate synthetase dropped (1216 to 545 nm 5,10-methylidynetetrahydrofolate/20 min/mg protein), and 5,10-methylenetetrahydrofolate dehydrogenase did not change significantly (262 to 312 nm 5,10-methylidynetetrahydrofolate/20 min/mg protein).

4828 THE METABOLISM OF NICOTINE AND COTININE BY A MOUSE LIVER PREPARATION.

(E.) Stalhandske, T. (Roy. Vetr. Coll., Stockholm, Sweden). *Acta Physiol Scand* 78(2):236-248, 1970.

The metabolism of nicotine and cotinine was studied in a 10,000X g fraction of mouse liver homogenate using ^{14}C-labeled compounds. Total metabolism of nicotine and cotinine measured were proportional to amount of protein added and linear with time up to at least 30 and 25 min of incubation resp. Optimal reaction velocity was approached at a nicotine concentration of 1.6 mM. During a radiochromatogram nicotine metabolism showed 5 separate radioactive metabolites; the chromatogram spots found had the same R_f values as reference substances cotinine (R_f = 0.52), γ-(3-pyridyl)-γ-oxo-N-methylbutyramide (R_f = 0.34) and hydroxycotinine (R_f = 0.21); three unidentified metabolites and ^{14}CO$_2$ were observed. The metabolism of nicotine was also found to be TPNH and O$_2$ dependent; the lack of O$_2$ during the experiment caused a significant decrease in amount of cotinine formation. The observed metabolites were also excreted in urine following i.p. nicotine administration. In cotinine metabolism studies, radiochromatograms showed 3 metabolites with R_f values corresponding to γ-(3-pyridyl)-γ-oxo-N-methylbutyramide and demethylcotinine (R_f = 0.34), hydroxycotinine (R_f = 0.22) and one unidentified metabolite. No formation of ^{14}CO$_2$ was observed.

Excreted urine collected for 4 hr contained 46% of radioactivity injected. A similar pattern of nicotine and cotinine metabolites observed in *in vitro* and *in vivo* experiments seemingly indicates that biotransformation of nicotine in the liver represents the major metabolic route *in vivo*.

4829 COMPARISONS BETWEEN NUCLEIC ACIDS, PROTEIN, ZINC, AND MANGANESE IN RAT LIVER: A RELATION BETWEEN ZINC AND RIBONUCLEIC ACID. *(E.)* Holt, A. B. (Johns Hopkins Hosp., Baltimore, Md.), E. D. Mellits and D. B. Cheek. *Pediat Res* 4(2):157-164, 1970.

The relations of total zinc, manganese, nucleic acids and protein were evaluated by regression analysis and analysis of covariance in the livers of control, calorie-restricted and hypophysectomized rats. Calorie-restricted rats had higher total RNA and protein for a given DNA value ($p < 0.001$) with an insignificant increase in total RNA for a given protein value while hypophysectomized rats had lower RNA relative to protein or DNA ($p < 0.001$) and a normal relation between protein and DNA. Calorie-restricted rats had normal zinc/RNA and zinc/protein values but zinc was high relative to DNA ($p < 0.001$) while hypophysectomized rats had normal zinc/RNA and zinc/DNA values and slightly higher values of zinc/protein ($p < 0.01$). Calorie-restricted rats had elevated manganese/DNA and manganese/protein values ($p < 0.001$) and manganese/RNA values ($p < 0.005$) while hypophysectomized rats had normal manganese/DNA and manganese/RNA levels and slightly reduced manganese/protein values ($p < 0.025$). A continuous relation between RNA and zinc in the livers of both the control and experimental animals was found suggesting that zinc is important in RNA synthesis and subsequent protein synthesis in mammalian tissues.

4830 REACTIVITY OF SOME TRANSITION METALS ON NUCLEAR PROTEIN BIOSYNTHESIS IN RAT LIVER. *(E.)* Weser, U. (Physiol. Chem. Inst., U. Tubingen, Germany) and J. Koolman. *Experientia* 26(3):246-247, 1970.

The reactivity of some transition metals (Mn^{++}, Fe^{3+}, Cr^{3+} and Hg^{++}) with nuclear protein biosynthesis was determined in an *in vitro* system using enzymatically active rat liver nuclei. After a 30 min incubation, Fe^{3+} and Mn^{++} incorporated 130 to 140% of the control value for ^{14}C-amino acids, Cr^{3+} incorporated more than 400%, and Hg^{++} incorporated only 30% (which is essentially an ice bath value indicating total inhibition of nuclear protein synthesis). Hg^{++} shows a tendency to react with sulphur and strongly inhibits nuclear protein biosynthesis while the other metals studied are preferably bound to oxygen and stimulate the ^{14}C-amino acid incorporation.

4831 EFFECT OF INHIBITORS OF PROTEIN SYNTHESIS ON DNA FORMATION IN LIVER. *(E.)* Brown, R. F. (Pittsburgh U. Sch. Med., Pa.), T. Umeda, S. I. Takai and I. Lieberman. *Biochim Biophys Acta* 209(1):49-53, 1970.

The effects of three inhibitors of protein synthesis (cycloheximide, sparsomycin, and pactamycin) were studied on the replication of liver DNA (measured by the incorporation of radioactive thymidine into nuclear DNA) in partially hepatectomized (removal of 70% of the liver) rats. Protein synthesis was measured by the incorporation of labeled leucine into liver protein. Cyclohexamide, sparsomycin and pactamycin all inhibited DNA replication in liver cells that were forming DNA, and over the wide ranges of the antibiotics tested *in vitro* (5 μg to 300 μg) DNA and protein synthesis were reduced to the same extent. Maximal inhibition (90%) of DNA and protein synthesis was achieved by cyclohexamide, sparsomycin and pactamycin at doses of 50 μg, 300 μg, and 75 μg, resp., and approximately 60% inhibition occurred at doses of 15 μg, 100 μg, and 30 μg. Inhibition of DNA replication was not due to reductions in the activities of the kinases that convert thymidine to thymidine triphosphopyridine nucleotide, nor to reductions of ribonuclease reductase. A level of injected cyclohexamide (2 mg/100 gm body weight) in the rat, that reduced DNA synthesis by 90%, had no effect on the conversion of thymidine to thymidine triphosphopyridine nucleotide or of cytidine to d-cytidine monophosphopyridine nucleotide. The antibiotic did not affect the synthesis of uridine triphosphopyridine nucleotide from orotate. When the incorporation of ^{14}C-labeled orotate into labeled liver DNA was measured (in a 7-min pulse period), the average count for the three control animals was 14,300 counts/min per g of wet liver while with three animals treated with antibiotic (2 mg/100 gm body weight) the comparable count was 12,200.

4832 THE EFFECT OF 3-AMINO-1,2,4-TRIAZOLE ON THE PHENOBARBITAL-INDUCED FORMATION OF HEPATIC MICROSOMAL MEMBRANES. *(E.)* Raisfeld, I. H. (New York U. Sch. Med., New York), P. Bacchin, F. Hutterer and F. Schaffner. *Molec Pharmacol* 6(3):231-239, 1970.

The structure (studied by electron microscopy) and chemistry (hydroxylase activity) of the hepatic endoplasmic reticulum were examined in male Sprague-Dawley rats after phenobarbital (50 mg/kg) and 3-amino-1,2,4-triazole (3 g/kg) administration (i.p.) alone or in combination to determine whether cytochrome P-450 biosynthesis induction affects microsomal membrane formation. Benzpyrene hydroxylase activity (μg/g liver) increased 3-fold over sodium chloride controls (183 to 530) after phenobarbital alone but did not change after aminotriazole alone or in combination with phenobarbital. Aniline hydroxylase activity (μm/g liver) increased 2.5-fold over the controls (1.01 to 2.64) after phenobarbital and 1.5-fold over the controls (1.01 to 1.58) after combined administration of phenobarbital and aminotriazole but did not change after the administration of aminotriazole alone. Cytochrome P-450 levels (nm/g liver) rose 5-fold (74 to 372) after phenobarbital and 2-fold (74 to 131) after phenobarbital plus aminotriazole while dropping to approximately 70% of control values (74 to 51) after aminotriazole alone. Structurally, phenobarbital produced proliferation of smooth endoplasmic reticulum, decreased glycogen content and did not affect mitochondria size while aminotriazole did not produce proliferation of endoplasmic reticulum or decrease glycogen content but produced mitochondria of varying size. Combined administration of phenobarbital and aminotriazole produced proliferation of endoplasmic reticulum (although less pronounced than with phenobarbital alone), varied mitochondrial size and a loss of glycogen. Levels of cytochrome P-450 and the lipoprotein portion of the endoplasmic reticulum membrane may be controlled separately.

4833 EXCRETION OF SULFOBROMOPHTHALEIN BY PERFUSED RAT LIVER AS INFLUENCED BY STEROIDAL HORMONES. *(E.)* Despopoulos, A. (Sch. Med. U. New Mexico, Albuquerque). *J Pharmacol Exp Ther* 173(1): 37-42, 1970.

Eight steroids and stilbestrol (0.1 mM in dimethyl sulfoxide) were studied for their effect on hepatobiliary excretion of BSP using the isolated perfused rat liver. Control values for bile flow (82 ml/10 min period), BSP concentration (131 µm/ml), and BSP excretion (102% of infused dose) were obtained using dimethyl sulfoxide (0.1 ml). Cortisone decreased BSP concentration (50) and excretion (53) and increased bile flow (117), norethandrolone, Norlutin and norethynodrel decreased BSP excretion (76, 75 and 75, resp.) and bile flow (72, 72 and 67, resp.) while maintaining BSP concentration (98, 90 and 120 resp.) at the control levels; testosterone, methyltestosterone, progesterone, estradiol and stilbestrol decreased bile flow (72, 43, 46, 60 and 27, resp.) while BSP excretion and concentrations dropped drastically and then returned to control levels. Oxygen consumption by liver slices was unaffected by any of the steroids at 0.1 mM concentrations.

4834 EFFECT OF CORTISOL *IN VIVO* ON AMINO ACID INCORPORATION INTO PROTEIN BY RAT LIVER RIBOSOMES *IN VITRO*. *(E.)* Omata, S. (Tottori U. Sch. Med., Japan) and S. Ichii. *Endocr Jap* 16(6):569-576, 1969.

Homogenized livers from male Wistar rats injected with cortisol (5 mg/100 mg i.p.) were used to study the changes in amino acid incorporation into protein *in vitro* by liver ribosomes. Immediately after hormone treatment, the polysome region in the postmitochondrial supernatant fractions was reduced and recovered to the control level 1 hr later. A significant increase in heavier polysomes with a concomitant decrease of the monomer peak was observed at 4 hr after hormonal treatment. The incorporation of ^{14}C-phenylalanine by ribosomes from control and hormone-treated rats in the presence of poly-uridylic acid was almost linear and proportional to the concentration of ribosomes in the incubation mixture while in the absence of poly-uridylic acid very little incorporation was noticed. Ribosomes from the livers of adrenalectomized and cortisol-treated rats showed a higher activity than those from adrenalectomized rats and preincubation of purified ribosomes in a complete amino acid incorporating system did not abolish the effect of cortisol treatment on the incorporating activity. Sedimentation profiles of purified polysomes derived from livers of cortisol-treated rats was essentially similar to that from control rats, although amount of polysomes per weight of the tissue was greater in the cortisol-treated rats.

4835 STUDY OF THE ACTION OF FOLIC ACID IN EXPERIMENTAL HEPATIC REGENERATION. *(Fr.)* Molimard, R. (Hosp. Paul Brousse, Villejuif, France) and M. Benozio. *Path Biol* 18(7-8):425-427, 1970.

The action of folic acid (25 mg i.p.) on liver regeneration, after 2/3 partial hepatectomy, in male rats (19 pairs, Wistar) was studied. Regeneration (5 days postoperatively) was not significantly increased (controls: 66.78%; treated: 76.99%) in the folic acid-treated rats. Various degrees of compensatory hypertrophy were found in 6 animals, which appears not to be due to the folic acid. Liver regeneration probably does not occur as a result of folic acid treatment.

4836 GLYCOGEN SYNTHESIS IN BIOTIN-DEFICIENT RAT LIVER. *(E.)* Patel, M. S. (Temple U. Sch. Med., Philadelphia, Pa.) and S. P. Mistry. *Proc Soc Exp Biol Med* 134(1):264-268, 1970.

The levels of synthesis of hepatic glycogen were studied in Sprague-Dawley rats during various stages of biotin deficiency induced by feeding the animals a basal diet containing 20% spray-dried egg white for 4 to 9 weeks. A control group of rats was cured of biotin deficiency after 7 weeks on the diet by injection of 100 g of biotin three times a week for 2 weeks. A glycogenic dose of labeled glucose-U-^{14}C was given intragastrically to animals fasted for 24 hr, and glycogen synthesis in the liver was measured after 3 hr (scintillation technique), at 6, 7 and 9 week intervals. Livers of biotin-deficient rats, at 6 weeks, contained significantly less glycogen (39 ± 6.2 mg/g) than control rat livers (54 ± 2.6 mg/g) when the animals were sacrificed during the day. There was no significant difference in rat liver glycogen (68 ± 4.7 mg/g for biotin-deficient livers; 65 ± 4.6 mg/g for control livers) when animals were sacrificed at night (6 P.M. to 6 A.M.). Overall, the deficient animals on the basal diet for 6 weeks were able to synthesize the same amount of hepatic glycogen as that by the controls. The decrease in glycogen synthesis observed during the day was the result of diurnal variation, possibly augmented by experimental stress.

4837 INHIBITION BY INSULIN OF VALINE TURNOVER IN LIVER: EVIDENCE FOR A GENERAL CONTROL OF PROTEOLYSIS. *(E.)* Mortimore, G. E. (Milton S. Hershey Med. Ctr., Hershey, Pennsylvania) and C. E. Mondon. *J Biol Chem* 245(9):2375-2383, 1970.

The mechanism of action of insulin in either promoting urea production or inhibiting proteolysis in liver was assessed by measuring the valine turnover between protein and free amino acid pools in the perfused livers of non-fasted male Osborne-Mendel strain rats. Proteolysis was assessed during perfusion of isolated livers from the turnover of free valine, measured after single pulse additions of L-valine-1-^{14}C to the perfusate and from the release of label from livers previously labeled *in vivo*, and then perfused with 15 mM unlabeled valine to minimize reincorporation. In control experiments, free valine showed an initial slow cumulative increase during perfusion followed by a rapid increase. At the start of perfusion the extracellular pool contained 2.5 μmoles of valine and in isolated livers the intracellular content of valine averaged 1.02 ± 0.10 μmoles per liver. After 90 min of perfusion, the extracellular pool showed a net increase of nearly 15 μmoles/liver of free valine, while the average intracellular valine content increased by only 1.5 μmoles free valine. The presence of insulin *in vitro* completely inhibited the spontaneous net increase in free valine and also inhibited release of label from previously labeled livers. When insulin was infused continuously into the medium at a rate of 2.4 μg per hour, the free valine concentration of the perfusate after 30 min of perfusion was 0.11 μmoles/ml and rose to only 0.18 μmoles/ml after 60 min of perfusion, while the untreated perfusate which was also nearly 0.11 μmoles/ml of free valine content at 30 min rose to a value of 0.35 μmoles/ml in 60 min. The inhibiting effect of insulin was sustained for periods of up to 180 min of perfusion and was estimated to represent 1.0% of total liver protein per hr.

4838 HEPATIC LIPID METABOLISM IN HYPOPHYSECTOMIZED AND GROWTH HORMONE-TREATED HYPOPHYSECTOMIZED RATS. *(E.)* Liberti, J. P. (Med. Coll. Virginia, Richmond), R. S. Navon, E. S. Longman and P. F. Jezyk. *Proc Soc Exp Biol Med* 133(4):1346-1350, 1970.

Hepatic lipid metabolism was studied in hypophysectomized and growth hormone-treated hypophysectomized Sprague-Dawley rats. Incorporation of glycerol into total lipids by liver slices from hypophysectomized rats decreased rapidly following hypophysectomy. Glycerol incorporation was 74% of normal value at 1 week postoperation, 46% at 2 weeks and remained diminished, from 32-43% at 3-8 weeks. The decrease in incorporation of glycerol into neutral lipid, cephalin, and lecithin fractions, but not acidic lipid was noted following hypophysectomy. Synthesis of acidic lipids was not significantly affected by hypophysectomy but labeling of other lipids, particularly triglycerides, was diminished. Daily administration of bovine growth hormone for 10 days to animals (4 weeks posthypophysectomy) resulted in 75% increase in total lipid synthesis. Incorporation of label into lecithin (78%) and cephalin (70%) fractions exhibited the greatest increase in lipid fractions studied during the first 5 days of bovine growth hormone treatment.

4839 EXPERIMENTS ON THE METYRAPONE REDUCING MICROSOMAL ENZYME SYSTEM. *(E.)* Kahl, G. F. (Pharmacol. Inst. U. Mainz, Germany). *Naunyn Schmiedeberg Arch Pharmakol* 266(1):61-74, 1970.

Metyrapone reduction was studied in the isolated perfused rat liver (male Sprague-Dawley) and in rat liver microsomes using chromatographic and ultraviolet-absorption spectra analysis. The microsomal metyrapone reductase which required NADPH as a cofactor and was active under aerobic conditons reduced metyrapone at the aliphatic keto group. Fifty-nine percent of the metyrapone was converted into reduced metyrapone within a 2-hr perfusion period as determined by redistribution processes and the reductive activity of the liver. Reduced metyrapone was not metabolized further by microsomal preparations. Little relative activity (6%) was found in the 105,000 x g-supernatant, but the 9,000 x g-supernatant showed a relative activity of 72%. The time course of the reduction was almost linear over an incubation period of 60 min, and the K_m for metyrapone was determined to be 1.39×10^{-3} M.

4840 MEASUREMENT OF ACUTE CHANGES IN LIVER FUNCTION AND BLOOD FLOW. *(E.)* Andersen, M. N. (E. J. Meyer Mem. Hosp., Buffalo, N. Y.) and K. Kuchiba. *Arch Surg* 100(5):541-545, 1970.

Closely-spaced, serial measurements of acute changes in liver function and blood flow were obtained in normal subjects by recording injected indocyanine green dye concentrations with an earpiece densitometer. A dose of 0.25 mg/kg of injected dye produced satisfactory clearance curves, although with present equipment optimal results occurred at 0.5 mg/kg. Up to 4 determinations were performed with indocyanine green injections at intervals of 10 min or longer without production of artifacts by "loading" of liver cells; loading occurred with injections given at 6-min intervals. When time between tests was lengthened to 20 min, at least 5 tests were performed before a loading effect developed. In studies on pigs, tests at 40 min intervals showed good reproducibility with 12 injections. Calculations of cardiac output were obtained from same dye curve thereby permitting measurement of hepatic function, hepatic blood flow, and cardiac output from a single study. No adverse effects (including skin discoloration) were observed with injections repeated up to 7 times during a 2-hr period. Highly consistent and reproducible results are seemingly achieved with this method and therefore it provides a useful tool for serial estimation of acute changes in liver function.

4841 THE KINETICS OF ^{32}P INCORPORATION INTO THE PHOSPHOLIPIDS OF HEPATIC ROUGH AND SMOOTH MICROSOMAL MEMBRANES OF MALE AND FEMALE RATS. *(E.)* Holtzman, J. L. (Natl. Cancer Inst., Natl. Inst. Hlth., Bethesda, Md.), T. E. Gram and J. R. Gillette. *Arch Biochem Biophys* 138(1):199-207, 1970.

The kinetics of ^{32}P incorporation into the phospholipid fractions of rough and smooth hepatic microsomal membranes were studied in the livers of male and female Sprague-Dawley rats. Rats were given 0.2 mC of ^{32}P in 0.9% NaCl via the caudal vein and were sacrificed at 10, 40, 120, 360 and 1440 min following injection. Livers were homogenized, rough and smooth microsomal fractions were prepared and radioactivity of supernatent solutions and successive homogenates were determined by scintillation technique. The disappearance of ^{32}P from the serum of male and female rats followed a biphasic curve with a short half-life ($t_{1/2}$) of 55 min in males and 40 min in females, and a long half-life of 960 min in males and 880 min in females. There was a rapid uptake activity into the soluble liver fraction ($t_{1/2}$ = 47 min in males and 59 min in females) and in both sexes the total smooth and rough microsomal fractions showed the same specific activities at each time interval. There were marked differences in the turnover rates of the three components: phosphatidylcholine plus phosphatidylserine, phosphatidylethanolamine, and sphingomyelin. The incorporation rate in male rats at 40 min into the phosphatidylethanolamine was 10 times the specific activity of any other component, and this component reached equilibration with inorganic phosphate at 360 min, while phosphatidylcholine was not equilibrated until 1440 min. In female rats the specific activities of phosphatidylethanolamine and sphingomyelin at 6 hr were lower in the smooth than in the rough membranes. At 6 hr, the rate constant for synthesis of total hepatic microsomal phospholipid phosphorus (soluble Pi as precursor) was 10.40 x 10^{-4}/min in males and 3.22 in females. *In vitro*, the microsomes from male rats incorporated 4.1 x 10^{-4}ng of P (min-ng phospholipid P) from γ-^{32}P-ATP (mainly into phosphatidylethanolamine) into rough membranes, and only 2.9 x 10^{-4} into smooth membranes.

4842 REDUCED BREAKDOWN *IN VIVO* OF LIVER MICROSOMAL RIBONUCLEIC ACID AND PROTEIN IN RATS TREATED WITH CORTISONE. *(E.)* Ottolenghi, C. (Inst. Gen. Physiol., U. Ferrara, Italy) and O. Barnabei. *Endocrinology* 86(5):949-954, 1970.

The effect of chronic cortisone treatment (5 mg/100 g body weight i.p.) on the breakdown *in vivo* of liver microsomal RNA (labeled with ^{14}C- of ^{3}H-orotic acid) and protein (labeled with ^{14}C arginine) was studied in adrenalectomized rats. The radioactivity in liver RNA labeled with a single dose (2 µc/100 g i.p.) of 6-^{14}C-orotic acid after daily cortisone decreased at a slower rate than in the controls (when radioactivity in the controls reached 50% of the initial values, the cortisone treated values still retained 75% of the peak radioactivity). When microsomal protein was labeled with L-arginine-guanido-^{14}C (12.5 µC/100 g i.p.) and microsomal RNA with ^{3}H-orotic acid (10 µC/100 g i.p.) the radioactivity of both microsomal protein and RNA decreased with the protein half-life of 6.8 days (control value, 4.0 days) and the RNA half-life of 7.4 to 8.4 days (control 4.7 to 4.9 days).

4843 THE KINETICS OF TRICARBOXYLATE ANION OXIDATION BY RAT LIVER MITOCHONDRIA IN RELATION TO THE AVAILABILITY OF L-MALATE. *(E.)* Robinson, B. H. (Dept. Biochem., U. Toronto, Ontario, Canada) and J. B. Chappell. *Biochim Biophys Acta* 205(2): 300-303, 1970.

The kinetics of tricarboxylate anion oxidation by rat liver mitochondria were studied using the Lineweaver-Burk and velocity versus substrate concentration plots. The K_a for L-malate was found to be independent of tricarboxylate anion concentration but V_{max} was dependent on the isocitrate concentration and the K_m for isocitrate was independent of L-malate concentration while V_{max} was dependent. K_m values obtained for citrate, cis-aconitate, and isocitrate were 90, 77 and 67, resp. The mitochondrial enzymes, assayed in the same proportions as they existed in the rat liver mitochondria (to assess permeability barrier factors), yielded a K_m of 90 for aconitate acting on citrate, 13 for the hydratase acting on cis-aconitate, 2.5 for NADP-isocitrate dehydrogenase acting on threo-D_s-isocitrate, and 280 for NAD-isocitrate dehydrogenase acting on threo-D_s-isocitrate. For citrate, the limitation imposed by aconitate hydratase is greater than that imposed by membrane permeability as long as L-malate is saturating but for cis-aconitate and isocitrate the membrane limits oxidation rates even in the presence of saturating L-malate.

4844 MENTHOL AND BILIRUBIN INHIBITION OF 4-METHYLUMBELLIFERONE GLUCUROCONJUGATION *IN VITRO* BY RAT AND HUMAN LIVER. *(Ger.)* Hohenwallner, W. (U. Child. Clin., Innsbruck, Austria). *Clin Chim Acta* 28(2):225-231, 1970.

The effect of menthol on glucuronyl transferase, in rat and human liver homogenates, was investigated to discover whether or not 4-methylumbelliferone conjugates both bilirubin and menthol. Normal glucuronyl transferase activity (units/mg protein) at 15 min and 30 min was 120.8 and 248.4, resp., in rat liver and 121.5 and 187.5, resp., in human liver. The activity (with the addition of increasing quantities of menthol or bilirubin) was evaluated at 15 and 30 min incubation time. A highly significant difference was found between the 2 test substances (both decreased glucuronyl transferase activity), and between the different concentrations, which applies to either species. Bilirubin was conjugated more than menthol. The metabolism of increasing doses, in terms of differences in time of incubation, was significantly different between species. The existence of a single enzyme which conjugates both bilirubin and menthol apparently exists.

4845 REGULATION OF GLUTAMATE PYRUVATE TRANSAMINASE IN THE AMPHIBIAN *(RANA HEXADACTYLA)* KIDNEY AND LIVER HOMOGENATES. *(E.)* Reddi, A. S. (Dept. Zool., Sri Venkateswara U., Tirupati, India) and K. S. Swami. *Experientia* 26(1):19-20, 1970.

4846 GLYCEROL KINASE AND GLYCEROL UTILIZATION IN TROUT *(SALMO GAIRDNERI)* LIVER. *(E.)* Lech, J. J. (Marquette Sch. Med., Milwaukee, Wisc.). *Comp Biochem Physiol* 34(1):117-124, 1970.

4847 A SIMPLE MICRO METHOD FOR THE DIRECT DETERMINATION OF δ-AMINO [^{14}C] LEVULINIC ACID PRODUCTION IN MURINE SPLEEN AND LIVER HOMOGENATES. *(E.)* Ebert, P. S. (Natl. Cancer Inst., Natl. Inst. Hlth., Bethesda, Md.), D. P. Tschudy, J. N. Choudhry and M. A. Chirigos. *Biochim Biophys Acta* 208(2):236-250, 1970.

4848 INVESTIGATIONS ON THE CARBOHYDRATE METABOLISM IN THE LIVER DURING GESTATION. *(Ger.)* Rathgen, G. H. (U. Gynec. Clin., Mainz, Germany), W.

Baumann, C. Schumichen and V. Friedberg. *Arch Gynaek* 208(4):353-372, 1970.

4849 A REFERENCE FOR DETERMINATION OF BILIRUBIN CONCENTRATION IN SERUM USING BILIRUBIN IN CYAMIDE-FORMAMIDE FOR ENRICHMENT OF SERUM. *(E.)* Dybkaer, R. (Inst. Med. Microbiol., U. Copenhagen, Denmark) and H. Hertz. *Scand J Clin Lab Invest* 25(2):151-160, 1970.

4850 INHIBITION OF RAT LIVER ADENYL CYCLASE BY ADENOSINE AND ADENINE NUCLEOTIDES. *(E.)* Moriwaki, K. (Sinai Hosp., Detroit, Michigan) and P. P. Foa. *Experientia* 26(1):22, 1970.

4851 ACTION OF A PAPAIN PROTEASE UPON EXPERIMENTAL HEPATIC REGENERATION. *(Fr.)* Paraf, A. (Hosp. Paul Brousse, Villejuif, France), M. Benozio and R. Molimard. *Path Biol* 18(7-8):421-423, 1970.

4852 STUDY OF THE SPLEEN DURING HEPATIC REGENERATION FOLLOWING PARTIAL HEPATECTOMY. *(Fr.)* Molimard, R. (Hosp. Paul Brousse, Villejuif, France) and M. Benozio. *Path Biol* 18(7-8):429-432, 1970.

4853 ENDOCRINE FACTORS CONTROLLING THE CIRCADIAN RHYTHM AND THE BIOSYNTHESIS OF BILE ACIDS. *(Fr.)* Gielen, J. (Lab. Chem. Med., U. Liege, Belgium), B. Robaye, J. Van Canfort and J. Renson. *Arch Int Pharmacodyn* 183(2):403-405, 1970.

4854 CORTICOSTERONE METABOLISM IN THE RAT *IN VIVO:* II. A STUDY OF THE METABOLITES EXCRETED IN THE BILE. *(Fr.)* Guillemant, S. (Hosp. Paris, France), F. Masson-Boras, C. Barthelemy-Freneaux and P. Desgrez. *Bull Soc Chim Biol* 52(1):35-49, 1970.

4855 EXPERIMENTAL HEPATIC REGENERATION. *(Fr.)* Benozio, M. (Hosp. Franco-Musulman, Bobigny, France) and A. Paraf. *Path Biol* 18(7-8):441-449, 1970.

4856 EFFECTS OF 1,3-PROPANEDIOL BIS(-*p*-CHLOROPHENOXYISOBUTYRATE) (CLY-503) ON CHOLESTEROL BIOSYNTHESIS IN THE RAT. *(Jap.)* Nakanishi, M. (Yoshitomi Pharmaceut. Lab., Tokyo, Japan), H. Imamura, E. Matsui and Y. Kato. *J Pharmaceut Soc Jap* 90(3):267-271, 1970.

4857 SACCHAROPINE CLEAVAGE BY A DEHYDROGENASE OF HUMAN LIVER. *(E.)* Hutzler, J. (New York U. Sch. Med., New York) and J. Dancis. *Biochim Biophys Acta* 206(2):205-214, 1970.

4858 TWO-SUBSTRATE KINETICS OF DRUG-METABOLIZING ENZYME SYSTEMS OF HEPATIC MICROSOMES. *(E.)* Alvares, A. P. (Wellcome Res. Lab., Burroughs Wellcome Co., Tuckahoe, N. Y.) and G. J. Mannering. *Molec Pharmacol* 6(3):206-212, 1970.

4859 THE EFFECTS OF NEWER SULFONAMIDES ON THE PROTEIN BINDING OF BILIRUBIN. *(E.)* Uy, F. (De Paul Hosp., Norfolk, Virginia), D. Zubas-Adams and F. T. Given, Jr. *Curr Ther Res* 12(5):306-310, 1970.

4860 EFFECT OF SKF 525-A ON BILIARY FUNCTION. INFLUENCE OF BODY TEMPERATURE. *(E.)* Levine, W. G. (Albert Einstein Coll. Med., Yeshiva U., Bronx, N.Y.). *Life Sci* 9(8):437-442, 1970.

4861 GLYCOGEN SYNTHESIS OF LABELED PRECURSORS IN THE LIVER OF IRRADIATED MICE. *(Ger.)* Berndt, J. (Radiol. Inst. U. Freiburg, Germany), K. Krebber and E. Kofler. *Strahlentherapie* 139(2):209-216, 1970.

4862 THE INTERACTION OF THE NUCLEOSIDE ANALOGUES, FORMYCINS A AND B, WITH XANTHINE OXIDASE AND HEPATIC ALDEHYDE OXIDASE. *(E.)* Sheen, M. R. (Procter Dept. Food Leather Sci., U. Leeds, England), H. F. Martin and R. E. Parks, Jr. *Molec Pharmacol* 6(3):255-265, 1970.

- P:Morph (4688)(4691)(4695)(4697)(4699)(4700)(4702)(4708)(4710)(4712)(4715)(4716)(4717)(4719)(4720)(4724)(4725)(4727)(4728)(4732)(4733)(4735)(4736)(4737)(4739)(4740)(4741)(4742)(4743)(4744)(4745)(4747)
- P:Absorp (4754)(4762)(4779)(4781)(4782)
- P:Secr:Stom (4811)
- P:Gen (4883)
- Diagproc (4932)
- D:Livbil (5171)(5180)(5182)(5186)(5203)(5205)(5211)
- D:Livbil:A.Nonv.Hep (5224)(5225)(5227)(5228)(5235)(5238)(5239)(5241)(5246)(5248)(5249)
- D:Livbil:A.V.Hep (5252)(5254)(5255)(5256)(5264)(5266)
- D:Livbil:Gallb (5301)

Intestine

4863 STUDY OF THE OIL AND MICELLAR PHASES DURING FAT DIGESTION IN THE NORMAL CHILD. *(E.)* Ricour, C. (Hosp. Child. Dis., Paris, France) and J. Rey. *Rev Europ Etud Clin Biol* 15(3):287-293, 1970.

The distribution of fats between the oil and micellar phases and relative concentrations of triglycerides, diglycerides, monoglycerides, and free fatty acids were studied during fat digestion in 6 normal children. The average lipid content for the oil phase was 6.5 ± 4.8 mg/ml and for the micellar phase 2.8 ± 2.4 mg/ml of intestinal fluid. Percentage of lipids solubilized in micelles was between 5 and 85% and there was no correlation between this value and the total lipid concentration. The oil phase contained almost entirely triglycerides and diglycerides; Their percentages by weight were 30.9 ± 9.8 and 22.3 ± 5.0 resp., and their molar percentage was practically identical (15.4 ± 5.6 and 15.5 ± 4.8) and varied at the same rate (R = +0, 77) inversely to the proportion of micellar phase. The molar percentage of monoglycerides was constant (10.6 ± 4.3) as long as sufficient quantities of tri- and diglycerides in the total phase and micellar phase were not predominant; the percentage decreased to 0 when micellar phase increased to over 60%. Free fatty acid concentration increased in subsequent stages of digestion and varied between 51 and 78%. The micellar phase contained only traces of tri- and diglycerides while the monoglyceride and free fatty acid percentages by weight were 26.7 ± 8.3 and 68.8 ± 9.7, resp. The free fatty acid and monoglyceride proportion (3.0 ± 0.7) remained constant as long as some monoglyceride remained in the oil phase.

4864 EFFECT OF CORTISONE ON THE DEVELOPMENTAL PATTERN OF THE NEUTRAL AND THE ACID β-GALACTOSIDASE OF THE SMALL INTESTINE OF THE RAT. *(E.)* Koldovsky, O. (Stanford U. Med. Sch., Cal.) and P. Sunshine. *Biochem J* 117(3):467-471, 1970.

The effects of cortisone on the developmental pattern of neutral and acid-β-galactosidase were studied in the small intestine of postnatal Wistar rats. After birth (before milk consumption), acid β-galactosidase activity increased rapidly in the ileum, but decreased slightly in jejunum. On day 16 after birth, activity in ileum began to decrease and on day 22, low adult values were observed in small intestine. Activity of neutral β-galactosidase in both jejunum and ileum was greater in suckling period than in later life but between day 20 and 25 after birth, activity in both areas fell rapidly to reach adult values. In adult animals, neutral β-galactosidase activity in jejunum was slightly higher than in ileum while in 12- to 20-day-old rats, activity in both parts was essentially the same. In adult animals, jejunal activity exceeded ileal activity four- to five-fold. Cortisone (0.5, 2.0 or 5.0 mg/100g/day for 4 days) did not affect the activity of neutral or acid β-galactosidase in 60-day-old rats. Acid β-galactosidase activity was decreased after cortisone treatment in 8-, 12-, 16- and 18-day-old rats, with sensitivity to cortisone increasing with approach of weaning. Neutral β-galactosidase activity was increased after cortisone treatment in the ileum of 8-, 12-, 16- and 18-day-old rats but only in the jejunum of 8- and 12-day-old rats.

4865 CANINE COPRO-IMMUNOGLOBULINS. *(E.)* Reynolds, H. Y. (Nat. Inst. Allergy Infect. Dis., Nat. Inst. Hlth., Bethesda, Md.) and J. S. Johnson. *J Infect Dis* 121(supp.):S118-S123, 1970.

4866 SUPPRESSION OF GASTRIC ACID SECRETION BY THE DUODENUM AND SMALL BOWEL. *(E.)* Bowes, K. L. (U. Alberta Fac. Med., Edmonton, Canada) and R. C. Harrison. *J Surg Res* 10(6):277-282, 1970.

4867 ANTIGEN DOSE-RESPONSE RELATIONSHIPS IN GUINEA-PIG ILEUM ANAPHYLAXIS. *(E.)* Okpako, D. T. (Postgrad. Sch. Stud. Pharmacol., U. Bradford, Yorkshire, England). *Int Arch Allerg* 38(5):474-481, 1970.

4868 INTESTINAL VASODILATATION AFTER MECHANICAL STIMULATION OF THE JEJUNAL MUCOSA. *(E.)* Biber, B. (Dept. Physiol., U. Goteborg, Sweden), M. Jodal, O. Lundgren and J. Svanvik. *Experientia* 26(3):263-264, 1970.

4869 INTESTINAL ENZYMES IN THE DIGESTION OF CARBOHYDRATES. *(Fr.)* Lasfargues, G. (no affil), M. Etienne and J. L. Fontaine. *Therapeutique* 46(2):139-144, 1970.

4870 INTESTINAL ENZYMES IN THE DIGESTION OF FATS. *(Fr.)* Guy-Grand, B. (Hosp. Hotel-Dieu, Paris, France) and H. Bour. *Therapeutique* 46(2): 145-152, 1970.

o P:Morph (4692)(4698)(4703)(4713)(4721)(4722)(4723)(4730)(4748)(4753)
o P:Absorp (4766)(4771)(4774)(4775)(4776)(4777)(4778)(4780)
o P:Motil (4795)(4797)(4800)(4803)
o P:Secr:Panc (4815)
o P:Gen (4871)(4886)
o D:Gen (5370)

4871 EFFECT OF POTASSIUM CHLORIDE ON INTESTINAL BLOOD FLOW. *(E.)* Chou, C. (Dept. Physiol., Michigan St. U., East Lansing), J. M. Dabney, T. A. Baker, W. T. Chen and F. J. Haddy. *J Lab Clin Med* 75(5):729-741, 1970.

The effect of luminal placement of a dose of KCl on local intestinal blood flow was studied in mongrel dogs in which a loop of ileum or jejunum was exteriorized and divided so that blood flow from each segment was drained by a single vein. While venous outflow was measured for 60 to 70 min, various combinations of KCl (975 mg dose), hydrochlorothiazide-KCl, hydrochlorothiazide (Diuril), NaCl (1 g), and glass beads were placed into the 2 adjacent segments (experimental vs control) of the dog small bowel. Also, luminal pressure was monitored in closed segments of intestine containing aqueous solutions of KCl or polyethylene glycol. The placement of KCl in the gut lumen caused an initial rise in venous blood flow from a baseline level of 13.60 g/min to 17.50 g/min in 5 min, followed by a fall in blood flow to 6.45 g/min in 60 min. Similarly, hydrochlorothiazide-KCl caused an increase in venous blood from a baseline level of 6.54 g/min to 8.22 g/min in 5 min, followed by a decrease to 3.05 g/min at 60 min. Placement of KCl in the gut lumen cuased a progressive rise in potassium concentration of venous plasma from the segment from a baseline level of 3 mEq/L to 16 mEq/L in 70 min. Both KCl and hydrochlorothiazide-KCl increased tonic contractions of the segment and increased luminal pressure. Glass beads or tablets with hydrochlorothiazide (Diuril) had little effect on these parameters. Placement of sodium chloride in the lumen increased venous blood flow from a baseline level of 18 g/min to 28 g/min in less than 5 min, and the increased blood flow was maintained at a level of 22 g/min for at least 1 hr with no observed changes in the motility of the segment.

4872 THE INFLUENCE OF PVNO (POLYVINYLPYRIDINE-N-OXIDE) ON THE PHAGOCYTIC CAPACITY OF THE LIVER-RES. *(Ger.)* Leonhardt, L. (Med. Coll. Hannover, Germany). *Nuclearmedizin* 9(1):98-100, 1970.

The effect of polyvinylpyridine-N-oxide (1.25 mg/kg, daily for 7 days) upon the specific tissue activity of spleen/liver (%) was studied in 21 male rabbits. Blocking (measured as impulse rate/min/g tissue, 1 hr after ^{198}Au injection) of liver reticuloendothelial cells (as an expression of spleen/liver activity), seen between the 2nd and 24th hr after polyvinylpyridine-N-oxide administration was increased to 60%, gradually falling to near normal (15%) at the end of 7 days. The storage of polyvinylpyridine-N-oxide in reticuloendothelial cells did not correlate in duration with that of the suppression of phagocytic activity in the reticuloendothelial system, probably because of a renewal of phagocyte activity with the reactive proliferation of new reticuloendothelial cells, as evidenced by a diminished blockade of the RES tissue 2 or 3 days after the injection of polyvinylpyridine-N-oxide.

4873 HEPATIC BLOOD FLOW AND BILIGRAFIN EXCRETION DURING INTRAVENOUS CHOLANGIOGRAPHY. *(E.)* Watson, A. (Manchester Roy. Infirm., England), J. G. B. Russell and H. B. Torrance. *Brit J Radiol* 43(508):248-250, 1970.

4874 EXPERIMENTAL INVESTIGATIONS OF THE HEMODYNAMIC EFFECTS OF NERVE RESECTION IN THE LIVER. *(Fr.)* Mallet-Guy, P. (Hosp. Eduoard Herriot, Lyon, France), P. Espinasse, P. Braconnot, G. Yoshitomi and T. Debiec. *Lyon Chir* 66(1):34-37, 1970.

4875 IDENTIFICATION OF $C_{19}O_2$ AND $C_{21}O_2$ STEROIDS IN THE MONO- AND DISULPHATE FRACTIONS OF HUMAN FECES. *(E.)* Laatikainen, T. (Helsinki, Finland) and R. Vihko. *Europ J Biochem* 13(3):534-538, 1970.

4876 ELECTRON MICROSCOPE INVESTIGATIONS OF BACTERIAL FLORA IN THE ALIMENTARY TRACT OF *ACYRTHOSIPHON PISUM* (HARRIS). *(E.)* Sandner, H. (Sch. Med. Warsaw, Poland) and H. Seryczynska. *Bull Acad Pol Sci* 17(11-12):661-664, 1969.

4877 STUDIES ON INTESTINAL DIGESTION IN THE SHEEP: III. NET MOVEMENTS OF CERTAIN INORGANIC ELEMENTS IN THE DIGESTIVE TRACT ON RATIONS CONTAINING DIFFERENT PROPORTIONS OF HAY AND ROLLED BARLEY. *(E.)* Pfeffer, E. (Dept. Anim. Physiol., Vetr. Med., U. Gottingen, Germany), A. Thompson and D. G. Armstrong. *Brit J Nutr* 24(1):197-204, 1970.

4878 EFFECT OF EXPOSURE RATE ON THE GASTROINTESTINAL LD_{50} OF MICE EXPOSED TO ^{60}Coγ RAYS OR 250 kVp X-RAYS. *(E.)* Krebs, J. S. (Stanford Res. Inst., Menlo Park, Calif.) and G. F. Leong. *Radiat Res* 42(3):601-613, 1970.

4879 NOURISHMENT OF THE RABBIT. *(Fr.)* Lebas, F. (no affil). *Aliment Vie* 57(10-11-12):245-268, 1969.

4880 A STOOL SURVEY FOR ENTERIC ORGANISMS IN ASPEN, COLORADO. *(E.)* Gleason, N. N. (Hlth. Serv. Mental Hlth. Admin., U. S. Publ. Hlth. Serv., Atlanta, Ga.), M. S. Horowitz, L. H. Newton and G. T. Moore. *Amer J Trop Med Hyg* 19(3):480-484, 1970.

4881 CHEMOPROPHYLAXIS IN LARGE BOWEL SURGERY: II. *IN VITRO* STUDY OF PENICILLIN ON PENICILLIN-RESISTANT ORGANISMS. *(E.)* Batchelder, E. J. (Austin Hosp., Melbourne, Australia), S. D. Rubbo, K. J. Hardy and E. S. R. Hughes. *Med J Aust* 57(8):367-368, 1970.

382 THE EFFECT OF β RADIATION ON MESENTERIC PACINIAN CORPUSCLE RESPONSE. *(E.)* Talbott, . E. (U. Oregon Med. Sch., Portland). *Radiat Res* 2(3):539-551, 1970.

383 REGULATION OF LIPID METABOLISM. *(E.)* Goodman, H. M. (Harvard Med. Sch., Boston, ass.). *Physiologist* 13(2):75-88, 1970.

384 ENTEROPATHOGENIC FACTORS OF FOOD-POISONING *CLOSTRIDIUM PERFRINGENS* TYPE A. *(E.)* auschild, A. H. W. (Res. Lab. Food Drug Directorate, ept. Nat. Hlth. Welfare, Ottawa, Canada), L. Niilo d W. J. Dorward. *Canad J Microbiol* 16(5):331-338, 70.

385 EVIDENCE OF THE PRESENCE OF METHYL ESTERS OF FATTY ACIDS IN THE ALIMENTARY TRACT THE RABBIT UNDER A CONTROLLED DIET. *(Fr.)* acques, C. (Physiol. Lab., U. Inst. Technol., Lyon, ance) and J. P. Perret. *C R Acad Sci* 270(14): 307-1810, 1970.

4886 STUDIES ON THE VARIATIONS IN DENSITY OF THE MICROORGANISMS IN THE COLON OF THE DOMESTIC RABBIT. *(Fr.)* Bonnafous, R. (Inst. Physiol., U. Toulouse, France) and P. Raynaud. *Experientia* 26(1):52-53, 1970.

o P:Absorp (4774)
o P:Motil (4788)
o P:Secr:Hepatobil (4840)(4848)(4852)
o P:Secr:Int (4868)
o D:Pancreas:Pancreat (5148)
o D:Livbil:Gallb (5310)
o D:Gen (5370)(5374)(5396)
o D:Gen:Parasit (5406)

DIAGNOSTIC PROCEDURES

4887 DIAGNOSTIC VALUE OF ROUTINE LIVER SCANNING IN ECCHINOCOCCUS DISEASE OF THE LIVER: A COMPARISON OF SCINTIGRAPHIC AND SURGICAL FINDINGS IN 100 CONSECUTIVE CASES. *(E.)* Ikkos, D. (Evangelismos Hosp., Athens, Greece), S. Gonticas and P. Gatsou. *Nuclearmedizin* 9(1):5-16, 1970.

The findings from liver scanning in the diagnosis of the presence, number, size and location of cysts were compared to surgical findings in 100 adult patients operated upon for hydatid cysts of the liver. Diagnosis by scanning was accurate in 90 of these cases (66 completely and 24 relatively) and inaccurate in 10 (falsely positive in 1 and falsely negative in 9). Eight of the 10 inaccurate diagnoses occurred in cases with a single cyst suggesting that the chances for a flase scan diagnosis are higher in these cases. Correct diagnosis occurred in all 19 cases where the cysts were located in the left lobe while 8 out of the 67 cases with cysts in the right lobe were incorrectly diagnosed reflecting the thinness and anterior location of the left lobe.

4888 PREDICTABILITY AND STATUS OF GASTROSCINTIGRAPHY WITH TECHNETIUM 99m. *(Ger.)* Locher, J. (Distr. Hosp. Basel, Switzerland), R. Fridrich and G. Englehart. *Deutsch Med Wschr* 95(11):547-551, 1970.

A diagnostic gastric scanning technique with Technetium 99 (i.v. injection of 2 mC and scintigraphy) was compared with the usual methods of preoperative diagnosis (intubation, endoscopy, biopsy) in 134 gastric patients. Accuracy of scintigraphic diagnosis was referred to autopsy findings, and those of surgical intervention. In 58 cases, a tumor diagnosis by scintigram was found in 43% (histologically established), with a false positive found in 9% of 12 cases, and a false negative in 5% of 7 cases. Analysis of scintigraphic disparities with radiological examination revealed 14 of 32 cases correctly diagnosed by scanning, and only 8 by radiology; while in 10 cases both methods failed. A positive diagnosis by scanning was incorrect in 4% of cases of gastric carcinoma; tumors were overlooked in 2% of cases. As evidenced from 35 autopsy findings (with 26 carcinomas), scintigraphic scans diagnosed 31 correctly; while from surgical findings, 39 of 51 were correctly diagnosed. Although scanning is technically simple and not stressful to patients, it is probably inadequate for serial investigations but is of diagnostic value in detecting extent of malignant gastric carcinoma.

4889 RADIOISOTOPE SCANNING IN THE DIAGNOSIS OF LIVER ABSCESS. *(E.)* Pai, S. T. (Dept. Surg., U. Malaya, Kuala Lumpur, Malaysia) and Y. W. Bakk. *Amer J Surg* 119(3):330-333, 1970.

Radioisotope scanning of the liver was carried out in 29 of 72 confirmed cases of liver abscess, using 150 to 200 μc of radioactive colloidal gold (i.v. injection) and scanning by either Photo-Scanner or a Color-Scanner. Of the 29 cases of liver abscess, 17 were amebic, 10 pyogenic, and 2 mixed in etiology. In 25 of 29 cases (86.2%) liver scanning demonstrated a space-occupying lesion in the liver suggestive of an abscess while in the remaining four cases the diagnosis was missed because of negative findings in the scan (in one of these four cases the scan showed a characteristic cirrhosis pattern). Liver scanning showed abscess patterns in 14 (83.0%) of 17 patients with amebic abscess, in 10 (100%) of 10 patients with pyogenic abscess and in 1 (50%) of 2 patients with mixed etiology abscess. Patients who received liver scans had a shorter duration of hospitalization of 19.2 days and a lower operative mortality rate of 3.5%, than patients who did not receive liver scans, and whose average hospital confinement was 26.1 days and mortality rate was 9.3%. The most important advantage of liver scanning is determination of the exact number and location of abscesses, so that individual therapeutic decisions may be made.

4890 CYTOLOGY OF MALIGNANT LYMPHOMAS OF THE STOMACH. *(E.)* Prolla, J. C. (Dept. Med., U. Chicago, Ill.), S. Kobayashi and J. B. Kirsner. *Acta Cytol* 14(5):291-296, 1970.

In 42 cases with lymphomatous involvement of the stomach, adequate cytologic examinations were made in 39, and in 27 of the 42 patients (64%) a positive cytodiagnosis was achieved and the lymphomatous nature of the malignancy was identified correctly. In addition to increased lymphocytes, 3 main types of malignant cells were noted: lymphoid, reticulum, and Reed-Sternberg. It appears that diagnostic cytology by gastric washing and Papanicolaou staining can facilitate a positive diagnosis of malignant lymphoma in a fairly high number of cases but cannot distinguish between the histologic types of lymphoma. Among over 3,000 examinations performed on patients with benign conditions and with adenocarcinoma of the stomach, 2 errors were made: in one case of lymphoid hyperplasia (pseudo-lymphoma) the large number of lymphocytes (some of them immature-appearing) led to a false positive report; and in one case of anaplastic adenocarcinoma the presence of only small, single malignant cells was mistaken for lymphoma.

4891 TWO-STAGE SCINTISCANNING IN THE DIFFERENTIAL DIAGNOSIS OF VASCULARIZED AND NON-VASCULARIZED INTRAHEPATIC SPACE-OCCUPYING LESIONS. *(E.)* Lubin, E. (Tel Aviv U. Med. Sch., Israel), J. Laor, A. Shimeoni, Z. Lewitus, A. I. Pick, U. Kadish, M. Dintsman and I. Garti. *Nuclearmedizin* 9(1):17-24, 1970.

The effectiveness of 2-stage liver scanning in differentiating vascular and avascular space-occupying lesions was tested in 5 patients with intrahepatic lesions. When a space-occupying lesion was found in an initial scan using ^{198}Au colloid, ^{131}I Rose Bengal, ^{99m}Tc colloid or ^{113m}In, a second scan (using ^{113m}In (20 μC/kg i.v.) as the blood pool label) was performed. Diagnosis by this method was proven accurate by surgery and/or selective celiac angiography in 2 cases with highly vascularized lesions (hemoangioma), 1 case with slight vascularization (adenocarcinoma), and 2 cases with avascular lesions (liver cyst and amoebic abscess).

4892 EVIDENCE OF LIVER CHANGES WITH ULTRASONIC SCANNING PROCEDURES. *(Ger.)* Kratochwil, A. (2nd U. Women's Clin., Vienna, Austria), W. Waldhausl and F. Wewalka. *Wien Z Inn Med* 51(1):37-44, 1970.

Detection of liver disease (18 liver cirrhosis, 6 primary liver carcinoma, 8 liver metastases, 5 hepatic steatosis, 9 virus hepatitis, 1 congested liver, 1 Wilson's disease) by two-dimensional ultrasonography was investigated. Eighteen healthy subjects served as controls. Normal livers were sonorously homogenous (up to 64 db); increasing the frequency revealed some echo patterns, seen in diseased livers at lower frequencies. The normal liver reflects ultrasonic waver caused by the great vessels (hepatic porta). In 17/18 cirrhotics, echo complexes were diffuse and reflected parenchymal damage. With accompanying ascites involvement, a homogenous area between peritoneum and liver capsule was observed. Patterns found in primary liver carcinoma and liver metastases were comparable to cirrhosis. Homogenous patterns were found also in chronic hepatitis, hepatic steatosis, congestion and Wilson's disease. Liver carcinomas, 7/8 liver metastases and 1/9 virus hepatitis were detectable by ultrasonography. The method is recommended for its simple application without danger to the patient.

4893 SOME PROBLEMS OF THE ULTRASONIC DIAGNOSIS OF BILE STONES. *(E.)* Smoldas, J. (2nd Med. Clin., Palacky U., Olomouc, Czechoslovakia). *Digestion* 3(2):65-72, 1970.

Several modifications of the A-scanning ultrasonic method of diagnosing bile stones (the impulse reflection passage ultrasonic method using 2 transducers) were used to test specimens from 60 healthy patients, 70 patients with abnormal affected liver parenchyma and 946 suffering from cholelithiasis, and the results compared with radiological, surgical and histological findings. Ultrasonic exploration revealed the optimal operating frequency to be about 2 MH_z with a silent area at a frequency of 2.3 MH_z with no marked echoes in normal patients. Hepatic tumors, abscesses, and cirrhosis were found to produce echoes dispelled in a wider interface which did not correspond to the boundary of external biliary pathways, and adipose gallbladder walls, cholecystic abscesses and infiltration, or gallbladder tumors produced echoes which could not be differentiated from those of bile stones. Measurements made in 946 patients with bile stones were positive in 85.89% of the cases compared to 82.87% positive findings with x-ray; and ultrasonic diagnosis showed positive reflections in 87.64% of 162 patients found negative using x-ray. Positive reflections may only indicate the presence of a tissue locality of ordinary properties, and this locality need not be bile stones.

894 PSEUDOTUMOROUS RADIOGRAPHIC FINDINGS ON THE COLON. *(Ger.)* Mateev, B. (Inst. Cancer es., Berlin, Germany) and K. H. Rotte. *Radiol Diagn* 0(6):573-585, 1969.

he double contrast method of radiography was used to nvestigate 1060 patients (65.7% normal, 15.2 with arcinoma, 5.3% with polyps, 6.3% with diverticuli, 4.8% with colitis, 2.6% with pseudotumors) suspected of having intestinal carcinoma. Sites of pseudotumors included the sigmoid flexure, cecum, descending colon and transverse colon (19, 4, 3, 1, resp.). Chronic diverticulitis was accompanied (in 8%) by sigmoid pseudotumors, with compression of the intestinal lumen (intestinal stenosis may be the start of a tumorous process). Pseudotumors of the large intestine may be caused by extracolonic tumors or adhesions and diagnosed by palpation or radiography. Adhesions subsequent to inflammatory process or surgery are predominantly found in the cecum and are evident by signs of deformity. Differentiation of this from a carcinoma is possible with the double contrast method, for in carcinoma, infiltration of the wall is irregular, and growth in the lumen more well defined.

4895 RESULTS OF SIMULTANEOUS X-RAY EXAMINATION OF THE GALLBLADDER, STOMACH AND DUODENUM. *(Ger.)* Becker, C. (Radiol. Clin., Martin Luther U., Halle-Wittenberg, Germany), H. W. Becker and I. Schleiff. *Radiol Diagn* 10(6):557-563, 1969.

4896 DIAGNOSTIC AND PHYSIOPATHOLOGICAL EVIDENCE THROUGH MICROLIPID DETERMINATIONS IN LIVER BIOPSIES. *(Ger.)* Jaross, W. (Med. Acad. Carl Gustav Carus, Dresden, Germany), M. Hanefeld and H. Stolzner. *Z Ges Inn Med* 25(7):300-304, 1970.

4897 CLINICAL APPLICATION OF PNEUMOPERITONEUM, PARIETOGRAPHY AND TOMOGRAPHY: ESPECIALLY FOR DIAGNOSIS OF ABDOMINAL TUMOR AND FOR OBSERVATION OF CHANGE IN ITS GROWTH RATE ELICITED BY RADIOTHERAPY. *(E.)* Ishimoto, M. (Sch. Med., Gunma U., Maebashi, Japan). *Gunma J Med Sci* 17-18(1-4):145-168, 1969.

4898 GASTROINTESTINAL TRACT ROENTGENOLOGY WHILE USING MOTILITY ACCELERATING AGENTS. *(Ger.)* Vido, J. (Med. Clin. Policlin., U. Gottingen, Germany), J. Emmrich and H. J. Severidt. *Med Klin* 65(20):987-993, 1970.

4899 ASSESSMENT OF THE DUODENAL ULCER PATIENT AS A SURGICAL CANDIDATE. *(E.)* Braasch, J. W. (Lahey Clin., Boston, Mass.), E. Max and R. E. Welling. *Surg Clin N Amer* 50(3):619-629, 1970.

4900 EMERGENCY RADIOGRAPHY IN DIGESTIVE HEMMORRHAGE OF THE SMALL INTESTINE, COLON AND RECTUM. *(Fr.)* Hernandez, C. (Hosp. Paris, France). *Ann Gastroent Hepat Hotel Dieu* 6(2): 139-151, 1970.

4901 HEMORRHAGES OF THE SMALL INTESTINE, COLON AND RECTUM IN EMERGENCY PATHOLOGY: SYMPTOMATOLOGY AND ETIOLOGICAL DIAGNOSIS. *(Fr.)* Monod-Broca, P. (Hosp. Bicetre, France). *Ann Gastroent Hepat Hotel Dieu* 6(2):153-163, 1970.

4902 UROGENITAL EVALUATION OF PATIENTS WITH COLORECTAL DISORDERS. *(E.)* Dowd, J. B. (Lahey Clin., Boston, Mass.). *Surg Clin N Amer* 50(3):729-735, 1970.

4903 PALPATION OF THE PANCREAS IN THE DIAGNOSIS OF SURGICAL INDICATIONS AND POSTOPERATIVE CARE. *(Fr.)* Grott, J. W. (Acad. Med. Lodz, Poland) and E. Grott-Swiezawska. *Chir Gastroent* 4(1):35-44, 1970.

4904 DEMONSTRATION OF HEPATIC ANEURYSMS IN POLYARTERITIS NODOSA BY ARTERIOGRAPHY. *(E.)* Bron, K. M. (Presbyterian-U. Hosp., Pittsburgh, Pa.) and A. Gajaraj. *New Eng J Med* 282(18):1024-1025, 1970.

4905 THE DIAGNOSIS OF ACUTE PANCREATITIS. *(It.)* Battistini, C. (Dept. Surg., U. Parma, Italy), F. Bini, G. Bacchini and B. Dell'Anna. *Ateneo Parmense* 40(6):651-695, 1969.

4906 RADIOLOGICAL TECHNIQUES OF THE EXPLORATION OF THE BILE DUCT. *(Fr.)* Cherigie, E. (CHU St. Antoine, Paris, France), D. Doyon and R. Bigot. *Rev Prat* 20(15):2503-2519, 1970.

4907 IMMUNOLOGICAL DIAGNOSIS OF HEPATIC DISTOMATOSIS WITH *FASCIOLA HEPATICA*. PERSONAL ACCOUNT OF 430 OBSERVATIONS. COMPARATIVE STUDY WITH 3 DIAGNOSTIC TECHNIQUES: IMMUNOELECTROPHORESIS, COMPLEMENT FIXATION AND IMMUNOFLUORESCENCE. *(Fr.)* Capron, A. (INSERM, France), A. Vernes and J. Fruit. *Rev Path Comp Med Exp* 70(1):31-38, 1970.

4908 LAPAROSCOPY IN HEPATIC DISTOMATOSIS. *(Fr.)* Paolaggi, A. (no affil). *Rev Path Comp Med Exp* 70(1):39-40, 1970.

4909 LAPAROSCOPY IN CLOSED ABDOMINAL TRAUMATA. *(Fr.)* Tostivint, R. (Dreux, France), H. Rozenberg, L. Chauveinc and M. F. Sanchez. *Chirurgie* 96(4):286-290, 1970.

4910 THE ASSESSMENT OF GASTRIC SECRETION IN MAN. *(E.)* Piper, D. W. (Roy. North Shore Hosp., Sudney, Australia), R. P. Herrmann and A. Clarke. *Med J Aust* 57(11):549-553, 1970.

4911 THE SURGICAL DIAGNOSIS OF ABDOMINAL HODGKIN'S DISEASE. *(E.)* Enright, L. P. (Stanford U. Med. Ctr., Calif.), H. W. Truebloos and T. S. Nelsen. *Surg Gynec Obstet* 130(5):853-858, 1970.

4912 RECTAL EVALUATION WITH RADIOACTIVE PHOSPHORUS. *(E.)* Lanza, F. L. (U. Texas M. D. Anderson Hosp. Tumor Inst., Houston) and R. S. Nelson. *Geriatrics* 25(4):96-102, 1970.

4913 THE USE OF SORBITOL IN THE INVESTIGATION OF THE SMALL BOWEL. *(E.)* Reid-Smith, A. (Victoria Hosp., London, Ontario, Canada). *J Canad Ass Radiol* 21(1):35-38, 1970.

4914 AN UNUSUAL ABDOMINAL MASS IN AN INFANT—A CASE FOR DIAGNOSIS. *(E.)* Snarr, J. W. (Child. Hosp. Winnepeg, Manitoba, Canada) and R. I. Macpherson. *J Canad Ass Radiol* 21(1):53-56, 1970.

4915 CHANGING CONCEPTS IN THE HISTOPATHOLOGICAL DIAGNOSIS OF POLYPOID LESIONS OF THE COLON. *(E.)* Behringer, G. E. (Massachusetts Gen. Hosp., Boston). *Dis Colon Rectum* 13(2):116-120, 1970.

4916 TOLBUTAMIDE TEST IN LIVER PATIENTS. *(Jap.)* Kurihara, H. (Nihon U. Sch. Med., Japan). *Nihon Univ Med J* 29(2):108-120, 1970.

4917 MODERN RADIODIAGNOSTIC PROCEDURES FOR THE BILE DUCTS. *(It.)* Bracchi, G. F. (Hosp. Circolo, Legnano, Italy). *Ateneo Parmense* 40(6): 696-700, 1969.

4918 CHOLECYSTOGRAPHY AND THE FREQUENCY OF GALLSTONES. *(Sw.)* Hedenberg, I. (Central Hosp., Lidkoping, Sweden). *Lakartidningen* 67(16):1801-1804, 1970.

4919 PROBLEMS OF DIAGNOSIS IN A WOMAN WITH ICTERUS AND ANEMIA. *(Dut.)* Sybesma, J. P. H. B. (U. Clin. Utrecht, Netherlands). *Nederl T Geneesk* 114(21):875-880, 1970.

4920 X-RAY DIAGNOSIS OF ABDOMINAL TRAUMA IN CHILDREN. *(Sw.)* Eklof, O. (Karolinska Hosp., Stockholm, Sweden) and A. Nordenstrand. *Lakartidningen* 67(19):2146-2152, 1970.

4921 DIAGNOSIS OF THE ZOLLINGER-ELLISON SYNDROME BY BIOASSAY. *(It.)* Cavina, E. (Inst. Gen. Clin. Surg., U. Pisa, Italy), G. F. Caldarelli, R. Minervini and R. Scarselli. *Chir Gastroent* 4(1): 16-23, 1970.

4922 EVIDENCE OF LIVER METASTASES BY MEANS OF FUNCTION TESTS AND PHOTOSCANNING WITH RADIOACTIVE SUBSTANCES. *(Ger.)* Dembski, J. C. (Radiol. Inst. U. Ruhr, Essen, Germany) and M. W. Strotges. *Deutsch Med Wschr* 95(7):313-316, 1970.

4923 A COMPARISON OF THE GASTRO-CAMERA INVESTIGATION WITH GASTROSCOPY. *(Ger.)* Oshima, H. (Surg. Clin. Polyclin. Free U. Berlin, Germany). *Deutsch Med Wschr* 95(7):346-347, 1970.

4924 EMERGENT ENDOSCOPY IN A VOLUNTARY HOSPITAL. *(E.)* Gang, M. J. (no affil) and R. S. McCray. *Gastroint Endosc* 16(4):231-233, 1970.

4925 A COMPARISON OF THREE SUBSTANCES USED FOR BOWEL PREPARATION PRIOR TO RADIOLOGICAL EXAMINATION. *(E.)* Dickie, J. (Scarborough Gen. Hosp., Toronto, Canada), W. B. James, R. Hume and D. Robertson. *Clin Radiol* 21(2):201-202, 1970.

4926 PRE-ENDOSCOPIC MEDICATION: PARENTERAL DIAZEPAM USED ADJUNCTIVELY. *(E.)* Mayes, G. R. (San Francisco Gen. Hosp., California), E. L. Kehoe, E. Friedman and H. Belber. *Gastroint Endosc* 16(4):187-193, 1970.

4927 CLINICAL USE OF THE OLYMPUS FIBERESOPHAGOSCOPE. *(E.)* Morrissey, J. F. (Dept. Med., U. Wisconsin, Madison), H. Koizumi, M. N. Sultan and S. E. Rockman. *Gastroint Endosc* 16(4):207-209, 1970.

4928 EVALUATION OF PROBLEMS OF THE PROXIMAL STOMACH AND ESOPHAGUS. *(E.)* Adams, H. D. (Lahey Clin., Boston, Mass.). *Surg Clin N Amer* 50(3):611-617, 1970.

4929 THE EARLY DIAGNOSIS OF GASTRIC CANCER. *(E.)* Melgar, A. (El Paso, Texas). *Southwest Med* 51(5):106-110, 1970.

4930 SIGNIFICANCE OF IMPRINT SMEAR IN CYTOLOGIC DIAGNOSIS OF MALIGNANT TUMORS OF THE STOMACH. *(E.)* Yoshii, Y. (Achi Cancer Ctr. Hosp., Nagoya, Japan), J. Takahashi, Y. Yamaoka and T. Kasugai. *Acta Cytol* 14(5):249-253, 1970.

4931 ABDOMINAL ANGIOGRAPHY. *(E.)* Graeb, D.(no affil). *U Toronto Med J* 47(3):96-101, 1970.

932 THE PHYSIOPATHOLOGICAL AND CLINICAL SIGNIFICANCE OF THE MOST IMPORTANT LABORATORY INVESTIGATIONS IN HEPATITIS AND CIRRHOSIS. *(Ger.)* ommerell, B. (Med. Clin. U. Heidelburg, Germany) and . Stiehl. *Med Welt* 21(15):672-676, 1970.

933 ASPECTS OF ENZYME DIAGNOSIS. *(Ger.)* Schmidt, E. (Med. Coll. Hanover, Germany) nd F. W. Schmidt. *Med Welt* 21(18):805-816, 1970.

934 SELECTIVE ARTERIOGRAPHY OF THE CELIAC TRUNK IN HYDATID CYSTS OF THE LIVER. *(Fr.)* amoun, A. (no affil), H. Ayari, M. Fourati and K. ochev. *Tunisie Med* 47(5):351-358, 1970.

935 FUNCTIONAL EXPLORATION OF GASTRIC SECRETION BY MEANS OF HISTAMINE, GASTRIN AND THEIR DERIVATIVES. *(Fr.)* Pascal, J. P. (Hosp. Purpan, Toulouse, France). *Rev Med Toulouse* 6(1):69-77, 1970.

4936 THE VALUE OF THE MEASUREMENT OF γ-GLUTAMYLTRANSPEPTIDASE IN THE DETECTION OF LIVER METASTASES. *(Fr.)* Huguet, C. (Hosp. St. Antoine, Paris, France) and O. Azzopardi. *Rev Medicochir Mal Foie* 45(2):113-117, 1970.

4937 SERUM TRANSAMINASE ACTIVITY AFTER ERGOMETRIC LOADING IN PATIENTS WITH LIVER DISEASE. *(Ger.)* Zwirner, K. (St. Hosp., Saarbrucken, Germany). *Acta Hepatosplen* 17(2):97-103, 1970.

4938 LABORATORY DIAGNOSIS IN PANCREATIC DISEASE IN GENERAL PRACTICE. *(Ger.)* Marki, H. H. (Winterthur Canton Hosp., Switzerland) and R. Baumgartner. *Ther Umsch* 27(4):199-202, 1970.

4939 ROENTGENOLOGICAL AND MICROSCOPIC FINDINGS IN UPPER SMALL INTESTINE. *(Ger.)* Dombrowski, H. (Med. U. Clin. Marburg, Germany) and E. O. Riecken. *Radiologie* 10(1):25-29, 1970.

4940 THE VALUE OF THE INVESTIGATION OF PORTAL BLOOD CIRCULATION FOR THE PROGNOSIS OF CIRRHOTIC HEMORRHAGE. *(Ger.)* Deimer, E. (Inst. Radiol. Diag., U. Vienna, Austria). *Wien Z Inn Med* 51(3):102-105, 1970.

4941 DIAGNOSIS AND SURGICAL MANAGEMENT OF OBSTRUCTIVE JAUNDICE. *(Ger.)* Grozinger, K. H. (Surg. U. Clin. Heidelberg, Germany), G. Kolig and W. Wenz. *Therapiewoche* 20(13):519-522, 1970.

4942 VALUE OF THE HYPER-GLYCO-AMYLASEMIA TEST IN THE DIAGNOSIS OF PANCREATIC DISEASE. *(Fr.)* Thomas, M. (Hosp. Bichat, Paris, France), A. Lapegue and Y. Le Quintrec. *Presse Med* 78(2):69-70, 1970.

4943 PRE- AND POSTOPERATIVE SUBMAXIMAL BETAZOL-TEST IN SELECTIVE GASTRIC VAGOTOMY AND PYLOROPLASTY. *(Ger.)* Rehner, M. (Marien Hosp., Hamburg, Germany), H. Van Ackeren, A. Knipper, R. Eichen and W. Koch. *Chirurg* 41(4):166-169, 1970.

4944 AN INSTRUMENT FOR TRANSDUODENAL SPHINCTEROTOMY AND A BIOPSY SPECIMEN FROM VATER'S PAPILLA. *(Ger.)* Larmi, T. K. I. (Surg. U. Clin. Oulu, Finland). *Chirurg* 41(4):189, 1970.

4945 IMMUNOELECTROPHORETIC EVIDENCE OF "HEPATITIS-ASSOCIATED" ANTIGEN (Au/SH ANTIGEN). *(Ger.)* Pesendorfer, F. (I. Med. U. Clin. Vienna, Austria), O. Krassnitzky and F. Wewalka. *Klin Wschr* 48(1):58-59, 1970.

4946 THE VALUE OF SCINTIGRAPHY IN THE DIAGNOSIS OF HYDATIC CYSTS OF THE LIVER. *(Fr.)* Mantecon, R. L. (Zaragosa, Spain) and F. M. Gorriz. *J Radiol* 51(3-4):169-171, 1970.

4947 THE SYSTEMATIC RADIOLOGICAL DETECTION OF CANCERS OF THE DIGESTIVE TRACT AND OF THE THORAX. *(Fr.)* Gallina, M. F. (Fac. Med. U. Perugia, Italy). *J Radiol* 51(3-4):163-168, 1970.

4948 DIRECT RADIOLOGICAL INVESTIGATIONS OF THE PANCREAS. *(Ger.)* Bessler, W. (Winterthur Canton Hosp., Switzerland), A. Jucker and H. Kappeler. *Ther Umsch* 27(4):203-209, 1970.

4949 ABDOMINAL ANGIOGRAPHY: TECHNIQUE, PATHOMORPHOLOGY, INDICATIONS. *(Ger.)* Wenz, W. (Surg. U. Clin. Heidelberg, Germany), D. Beduhn, F. J. Roth, G. Van Kaick and H. Czembirek. *Roentgenpraxis* 23(5):97-124, 1970.

4950 ORALLY INDUCED HYPERAMMONIEMIA TEST IN GASTRECTOMIZED PATIENTS. *(Fr.)* Peter, B. (C. H. U. Strasbourg, France), M. Imler, R. Bockel and J. Stahl. *J Med Strasbourg* 1(1):33-50, 1970.

4951 THE DIAGNOSIS OF HEPATIC METASTASES BY MEANS OF RADIOISOTOPES. *(Fr.)* Delaloye, B. (Clin. Med. U. Lausanne, Switzerland). *Praxis* 59(12):440-442, 1970.

4952 THE CONTRIBUTION OF ANGIOGRAPHY IN THE DIAGNOSIS OF TUMORS. *(Fr.)* Essinger, A. (Canton Hosp., Lausanne, Switzerland). *Praxis* 59(12):433-436, 1970.

4953 EXPERIENCE WITH CONVENTIONAL UPPER GASTROINTESTINAL ENDOSCOPY: A 13-YEAR STUDY. *(E.)* McBroom, G. L. (Ontario, Canada). *Gastroint Endosc* 16(4):213-223, 1970.

4954 GASTROSCOPY AS A DIAGNOSTIC AID IN UPPER GASTROINTESTINAL BLEEDING. *(E.)* Morse, W. H. (Wayne St. U. Coll. Med., Detroit, Mich.). *Amer J Gastroent* 53(4):323-329, 1970.

o P:Motil (4803)
o D:Esoph (4956)
o D:Stomduo (5003)
o D:L.Intest (5107)
o D:L.Intest:Ulccol (5125)(5132)
o D:Livbil:A.V.Hep (5252)
o D:Livbil:Gallb (5310)
o D:Gen (5331)

GASTROINTESTINAL DISEASES

ESOPHAGUS

955 THE IATROGENIC ESOPHAGUS PERFORATIONS. *(Ger.)* Sailer, R. (Surg. Clin. U. Ruhr, ssen, Germany), E. Muller and D. Moschinski. *eutsch Med Wschr* 95(7):330-339, 1970.

956 DIAGNOSIS AND TREATMENT OF ATRESIA OF THE ESOPHAGUS. *(Fr.)* Jaubert De Beaujeu, M. no affil) and P. Mollard. *Rev Prat* 20(8):1099-1110, 970.

957 MALIGNANT AND BENIGN TUMORS OF THE ESOPHAGUS AND OF THE STOMACH. *(Ger.)* Heberer, G. Cologne Surg. U. Clin Molyclin., Germany), A. Larena nd V. Zumtobel. *Chirurg* 41(3):107-116, 1970.

958 INDICATIONS FOR SODIUM OXYFERRISCORBONE IN ESOPHAGEAL PATHOLOGY: PEPTIC ESOPHAGITIS, REPARATION FOR ESOPHAGEAL ENDOSCOPY. *(Fr.)* Bouali, . (C. H. U. Angers, France). *Ouest Med* 23(1):59-61, 970.

959 PERFORATION OF THE ESOPHAGUS. *(E.)* Wichern, W. A., Jr. (Roosevelt Hosp., New York, . Y.). *Amer J Surg* 119(5):534-536, 1970.

960 ESOPHAGOSCOPIC DIAGNOSIS OF SCLEROSIS OF THE LUMEN. *(Ger.)* Wodak, E. (Vienna, ustria). *Wien Z Inn Med* 51(3):116-118, 1970.

61 RELATIONSHIPS BETWEEN WEATHER CONDITIONS AND THE INCIDENCE OF THE ONSET OF VARICEAL EMORRHAGE OF THE ESOPHAGUS. *(Ger.)* Stefenelli, N. st Med. U. Clin., Vienna, Austria) and W. Undt. *en Z Inn Med* 51(3):93-94, 1970.

62 CANCER OF THE ESOPHAGUS SIMULATING A MEDIASTINAL TUMOR. *(Fr.)* Rousseau, J. (C. H. U. moges, France), J. P. Dupuy and A. Picot. *Sem Hop* (7):461-464, 1970.

63 ACHALASIA OF THE CARDIA IN CHILDREN WITH PYLORIC SPASM AND GASTRIC ECTASIA. PHRENO- LORIC SYNDROME. *(Ger.)* Bofinger, H. (Aschersleben sp., Germany) and W. Nietzsch. *Z Kinder Chir* 1-2):44-49, 1970.

64 ESOPHAGOGRAPHIC FINDINGS FOLLOWING ESOPHAGEAL SURGERY. *(Ger.)* Romaniuk, P. A. ed. Fac. Humboldt U., Berlin, Germany), G. Thomas d M. Hammerlein. *Radiologie* 10(1):1-11, 1970.

65 ESOPHAGOGRAPHIC FINDINGS FOLLOWING ARTIFICIAL ESOPHAGUS INTUBATION. *(Ger.)* maniuk, P. A. (Med. Fac. Humboldt U. Berlin, Ger- ny), G. Thomas and M. Hammerlein. *Radiologie* (1):11-16, 1970.

4966 HEMORRHAGE OF ESOPHAGEAL VARICES. *(Ger.)* Zeitlhofer, J. (Kaiser Franz Joseph Hosp., Vienna, Austria). *Wein Z Inn Med* 51(3):90-92, 1970.

4967 FUNCTIONAL DISORDERS OF THE ESOPHAGUS AND STOMACH IN CARDIAC INFARCT. *(Ger.)* Schneider, R. (no affil). *Med Welt* 21(15):676-678, 1970.

4968 DISEASES OF THE ESOPHAGUS: PRESENT CONCEPTS. *(E.)* Zboralske, F. F. (Stanford U. Sch. Med., Calif.) and G. W. Friedland. *Arizona Med* 27(1):33-51, 1970.

4969 SPONTANEOUS RUPTURE OF THE ESOPHAGUS. *(Ger.)* Wolter, J. (Path. Inst. U. Freiburg, Germany) and R. Lesch. *Med Welt* 21(18):817-820, 1970.

4970 ESOPHAGEAL RUPTURE ASSOCIATED WITH AN INCARCERATED PARAESOPHAGEAL HERNIA AND PYLORIC OBSTRUCTION. *(E.)* Leininger, B. J. (Edward Hines Jr. VA Hosp., Hines, Ill.) and C. B. Puestow. *Amer J Surg* 119(3):348-351, 1970.

4971 ESOPHAGEAL ATRESIA WITH TRACHEO-ESOPHAGEAL FISTULA. *(E.)* Slim, M. S. (American U. Hosp., Beirut, Lebanon) and W. M. Bickers. *Arch Surg* 100(5):577-581, 1970.

4972 FAMILIAL ACHALASIA. *(E.)* Guth, P. H. (Wadsworth Hosp., VA Ctr., Los Angeles, Calif.) and L. Polonsky. *Amer J Dig Dis* 15(3):291-295, 1970.

4973 EXPERIENCE WITH THE SENGSTAKEN-BLAKEMORE TUBE FOR BLEEDING ESOPHAGEAL VARICES. *(E.)* Hermann, R. E. (Cleveland Clin. Found., Ohio) and D. Traul. *Surg Gynec Obstet* 130(5):879-885, 1970.

4974 DELAYED CANCER IN STENOSIS OF THE ESOPHAGUS. *(Fr.)* Chassagnon, C. (no affil), J. Rechatin and E. Saubier. *J Med Lyon* (1189):681-683, 1970.

4975 A LITTLE-KNOWN ACCIDENT OF ANESTHESIA: PERFORATION OF THE CERVICAL ESOPHAGUS DURING TRACHIAL INTUBATION. *(Fr.)* Dubost, C. (Paris, France), G. Thomeret and C. Potter. *Chirurgie* 96(4):268-274, 1970.

o P:Motil (4798)
o Diagproc (4927)(4928)
o D:S.Intest (5049)

4976 RELATIONSHIP OF β-GLUCURONIDASE ACTIVITY IN GASTRIC JUICE TO THE HISTOLOGY OF THE GASTRIC MUCOSA. *(E.)* Russell, R. I. (Roy. Infirm., Glasgow, Scotland), R. MacAllister and R. Campbell. *Gastroenterology* 58(3):352-357, 1970.

Normal histology was found in 19, superficial gastritis in 5, and atrophic gastritis in 12, of 36 suitable gastric mucosa biopsy specimens from the fundus of the stomach obtained from 12 symptomless subjects, 9 patients with non-specific dyspepsia, 2 with duodenal ulcer, 1 each with malabsorption, normocytic anemia, and carcinoma of the colon; and 10 from patients with chronic iron deficiency anemia. Of the 10 patients with chronic iron deficiency anemia, 3 were found to have superficial gastritis and 7 atrophic gastritis. A significant increase of β-glucuronidase activity was found in the gastric juice of the group with atrophic gastritis and in the gastritis group as a whole. Increased levels of β-glucuronidase in the gastric juice in gastric carcinoma may be a reflection of the high incidence of associated histological gastritis or intestinal metaplasia, and high β-glucuronidase levels in patients with gastritis possibly may indicate those patients where gastric mucosa may be at risk of undergoing neoplastic change.

4977 ENZYME DISTRIBUTION AND HISTOLOGY OF THE GASTRIC MUCOSA. *(Ger.)* Kessler, F. (St. Med. Ctr., Munich, Germany) and O. Kunz. *Z Gastroent* 8(2):75-79, 1970.

The distribution of the indicator enzymes in microsomes, mitochondria, lysosomes and cell membrane structures in normal and pathological human gastric mucosa (obtained by suction biopsies) was investigated by electron microscopy. Mitochondrial succinic dehydrogenase activity in normal mucosa was found mostly in the parietal cells with only a slight amount of activity in the chief cells and mucous cells; glutamate dehydrogenase activity was not detected and LDH activity was concentrated mostly in the parietal cells. In the mucosa in chronic atrophic gastritis, an occasional decrease in enzyme activity in the parietal cells and loss of activity in the globular cells was seen. Lysosomal acid phosphatase and microsomal unspecific esterase activities were distributed equally in the chief cells and mucous cells where they were intensely positive in normal mucosa and decreased in pathological mucosa. ATPase and alkaline phosphatase activities were increased in the membranes and in capillary walls in normal mucosa and were increased in the capillaries in atrophic gastritis; ATPase activity in the interstitial tissues was increased due to a mesenchymal reaction in the mucosa in atrophic gastritis.

4978 DOES ALCOHOL CAUSE CHRONIC GASTRITIS? *(E.)* Wolff, G. (Robert Rossle Hosp., Berlin, Germany). *Scand J Gastroent* 5(4):289-291, 1970.

4979 LYMPH NODE REMOVAL IN GASTRIC CANCER. *(E.)* Daido, R. (Maizuru Nat. Hosp., Kyoto, Japan), M. Kano, N. Nakajima, M. Funada and M. Nakamura. *J Abdom Surg* 12(5):73-77, 1970.

4980 CARCINOMA OF THE RESIDUAL STOMACH AFTER BILLROTH-II-RESECTION FOR A FIBROMYOMA OF THE GASTRIC WALL. *(Ger.)* Uhlmann, W. (Marienberg Hosp., Germany). *Z Aetrzl Fortbild* 64(2):63-68, 1970.

4981 SPONTANEOUS CLOSURE OF A RETROPERITONEAL DUODENAL FISTULA FOLLOWING NEPHRECTOMY AND TREATMENT WITH ENZYME INHIBITORS. *(Ger.)* Krosegk, G. (Dist. Hosp. Potsdam, Germany). *Z Aertzl Fortbild* 64(2):81-83, 1970.

4982 PROBLEMS IN GLUCOSE REGULATION IN PATIENTS WITH GASTRECTOMIES. *(Fr.)* Meilhac, B. (no affil). *Progres Med* 98(5-6):87-91, 1970.

4983 THERAPY OF DUODENAL STUMP INSUFFICIENCY. *(Ger.)* Richter, H. (Dist. Hosp. Potsdam, Germany). *Z Aertzl Fortbild* 64(2):58-60, 1970.

4984 GASTRIC PERFORATION BY POTASSIUM CHLORIDE TABLETS. *(Fr.)* Aoustin, J. (Prov. Hosp., Paris, France) and A. Abdalahoui. *Chirurgie* 96(2):172-173, 1970.

4985 FORTY-FIVE CASES OF SO-CALLED BENIGN GASTRIC TUMORS. *(Fr.)* Mouchet, A. (Ctr. Med. Surg. Foch, Suresnes, France), J. Marquand, M. Guivarch, J. P. Benoist and G. Saglier. *Ann Chir* 23(25-26):1297-1308, 1970.

4986 ON FREQUENCY AND X-RAY PICTURE OF TRANSPYLORIC PROLAPSE OF THE GASTRIC MUCOSA. *(Ger.)* Taubert, W. (Radiol. Clin., Karl Marx U. Leipzig, Germany) and W. Prager. *Radiol Diagn* 10(6):565-571, 1969.

4987 PEDUNCULATED NEURINOMA OF THE STOMACH. *(It.)* Aveni, F. (Dept. Surg. U. Trieste, Italy), R. Domeniconi and D. Tondi. *Chir Gastroent* 4(1):45-53, 1970.

4988 SIGNIFICANCE OF DURATION OF SYMPTOMS IN THE PROGNOSIS OF GASTRIC CARCINOMA. *(Jap.)* Miyawaki, H. (Kobe Munic. Kosei Hosp., Japan), K. Ueno and T. Chihara. *Arch Jap Chir* 38(6):840-843, 1969.

4989 276 CASES OF PYLORIC STENOSIS IN HAWAII: II. RACIAL ASPECTS. *(E.)* Shim, W. K. T. (U. Hawaii Sch. Med., Honolulu), A. Campbell and S. W. Wright. *Hawaii Med J* 29(4):292-295, 1970.

4990 ANTRAL MUCOSAL DIAPHRAGM IN THE ADULT. *(E.)* McBee, J. W. (VA Hosp., Houston, Texas) and L. B. North. *Gastroint Endosc* 16(4):196-199, 1970.

4991 IMMUNOLOGY OF STOMACH CANCER IN JAPANESE: II. SERA OF STOMACH CANCER. *(E.)* Yamamoto, T. (U. Hawaii Sch, Med., Honolulu), S. Chandor, M. Yokoyama, T. Kasugai, K. Kobayashi, K. Inoguchi and K. Tsunematsu. *Hawaii Med J* 29(4):288-291, 1970.

4992 CARCINOMA OF THE STOMACH AT KUAKINI HOSPITAL (1960-1964). *(E.)* Oishi, R. H. (Kuakini Hosp., Honolulu, Hawaii). *Hawaii Med J* 29(4):284-287, 1970.

4993 OBSERVATIONS ON SUBTOTAL GASTRECTOMY WITH PEAN (BILLROTH I) GASTRODUODENAL ANASTOMOSIS. *(Fr.)* Kuhlmann, N. (C. H. U. Oran, Algeria), F. Renaud, M. Billieres, A. Kazdali, S. Hammou, A. Aissaoui and F. Lopez Rodriguez. *Strasbourg Med* 20(9): 815-822, 1969.

4994 MASSIVE HEMORRHAGES OF GASTRODUODENAL ORIGIN: PORTAL HYPERTENSION EXCLUDED. *(Fr.)* Vayre, P. (Hosp. Vaugirard, Paris, France) and J. C. Levasseur. *Presse Med* 78(5):237-240, 1970.

4995 GASTRIC LEIOMYOSARCOMA: ROENTGENOLOGIC AND CLINICAL FINDINGS. *(E.)* Phillips, J. C. (Dept. Radiol., U. Tennesee, Memphis), J. W. Lindsay and J. A. Kendall. *Amer J Dig Dis* 15(3): 239-246, 1970.

4996 POLYPOID EOSINOPHILIC GASTRITIS. *(E.)* Thomford, N. R. (Ohio St. U. Coll. Med., Columbus) and F. M. Beman. *Amer J Dig Dis* 15(3): 296-300, 1970.

4997 ENTEROLITHS AND PERFORATION OF DUODENAL DIVERTICULA. *(E.)* Cavanagh, J. E. (Portsmouth Hosp., N.H.). *Arch Surg* 100(5):614-618, 1970.

4998 EFFECTS OF NICOTINE AND TOBACCO SMOKE ON GASTRIC SECRETION IN RATS WITH GASTRIC FISTULAS. *(E.)* Thompson, J. H. (Dept. Pharmacol., U. California, Los Angeles). *Amer J Dig Dis* 15(3): 209-217, 1970.

4999 PATHOLOGY OF STENOSIS OF THE PAPILLA OF VATER. *(E.)* Puente, J. L. (Fac. Med., U. Santiago de Compostela, Spain) and J. Potel. *Int Surg* 53(6):411-419, 1970.

5000 PRIMARY CARCINOMA OF THE DUODENUM: A CASE REPORT. *(E.)* Hussain, S. A. (Wayne St. U., Dept. Surg., Detroit, Mich.) and S. Northrup. *Amer J Gastroent* 53(4):360-364, 1970.

5001 BENIGN NONCHROMAFFIN PARAGANGLIOMA OF THE DUODENUM: REPORT OF A CASE AND REVIEW OF THE LITERATURE. *(E.)* Wietzner, S. (U. New Mexico Sch. Med., Albuquerque). *Amer J Gastroent* 53(4): 365-369, 1970.

5002 THE PYLORIC "CERVIX SIGN" IN ADULT HYPERTROPHIC PYLORIC STENOSIS. *(E.)* Schuster, M. M. (Baltimore City Hosp.) and V. M. Smith. *Gastroint Endosc* 16(4):210-211, 1970.

5003 SIMULTANEOUS GASTROSCOPIC, PHOTOGRAPHIC AND HISTOLOGIC STUDY OF COMMON TYPES OF GASTRITIS: A PRELIMINARY REPORT. *(E.)* Wenger, J. (VA Hosp., Atlanta, Ga.), A. M. Petty, and J. Mendeloff. *Gastroint Endosc* 16(4):234-236, 1970.

5004 SEMEIOTICS OF PROLAPSE OF THE GASTRIC MUCOSA INTO THE DUODENAL BULB. *(It.)* Rigamonti, P. P. (Dept. Surg., U. Parma, Italy). *Ateneo Parmense* 40(6):591-614, 1969.

5005 IMMUNOLOGICAL PHENOMENA IN PERNICIOUS ANEMIA AND IN CHRONIC ATROPHIC GASTRITIS. *(Ger.)* Hartl, W. (Med. U. Klin. Tubingen, Germany). *Internist* 11(1):30-36, 1970.

5006 HISTOPATHOLOGICAL CLASSIFICATION OF GASTRIC POLYPS WITH SPECIFIC CONSIDERATION OF THEIR MALIGNANT DEGENERATION. *(Ger.)* Nakamura, T. (Yoiku-in Hosp., Tokyo, Japan). *Chirurg* 41(3): 122-130, 1970.

5007 PRESENTATION OF A MODERATED GASTRIC HYPOTHERMIC TECHNIQUE WITH DIRECT FLUSHING OF THE STOMACH WITH REFRIGERATED FLUID. *(Fr.)* Otteni, J. C. (Ctr. Hosp. U., Strasbourg, France), J. J. Kohler and M. Gillet. *Ann Chir* 23(25-26):1355-1359, 1969.

5008 CARCINOMA OF THE STOMACH IN A LARGE COMMUNITY HOSPITAL. *(E.)* Sinha, V. N. (Youngstown Hosp. Ass., Ohio), E. A. Shorten and B. Katz. *Amer J Surg* 119(3):256-260, 1970.

5009 ROENTGENOLOGIC STUDIES ON DISEASES OF THE STOMACH: II. EARLY GASTRIC CANCER. *(E.)* Saito, S. (Gunma U. Sch. Med., Maebashi, Japan), N. Toda, M. Ishimoto, M. Matsumoto, K. Yamashina and T. Tobe. *Gunma J Med Sci* 17-18(1-4):31-40, 1969.

5010 MULTIPLE CYSTS OF THE STOMACH ASSOCIATED WITH POLYP AND CHRONIC GASTRITIS: A CASE REPORT. *(E.)* Saito, S. (Gunma U. Sch. Med., Maebashi, Japan), N. Toda, M. Ishimoto and M. Matsumoto. *Gunma J Med Sci* 17-18(1-4):138-144, 1969.

5011 EXTENSIVE GASTRIC PERFORATION BY A TUMOR (2 MONTH SURVIVAL): A CASUISTIC OBSERVATION. *(Ger.)* Dittrich, M. (Med. U. Clin., Polyclin., Cologne, Germany). *Med Welt* 21(19):899-901, 1970.

5012 RADIOLOGICAL FINDINGS IN DUODENAL TUMORS. *(Ger.)* Grundner, H. G. (Med. Clin. Polyclin. U. Giessen, Germany) and E. Nagele. *Radiologie* 10(1):29-36, 1970.

5013 DUODENAL ATRESIAS AND STENOSES. *(Fr.)* Boureau, M. (Hosp. Bretonneau, Paris, France). *Rev Prat* 20(8):1113-1123, 1970.

5014 MYOID TUMORS OF THE STOMACH. *(Fr.)* Murat, J. (Fac. Med. Lyon, France), D. Delorme, J. Feroldi and R. Guillet. *Lyon Med* 223(11):609-611, 1970.

5015 THE GASTRIC LEIOMYOMA *(Ger.)* Markgraf, E. (Surg. U. Clin. Jena, Germany), K. Pitzler and E. Baudisch. *Zbl Chir* 95(9):297-301, 1970.

5016 LATENT GASTRIC CANCER OF THE HEMOPATHIC TYPE IN A TWENTY-FIVE-YEAR-OLD WOMAN. *(Fr.)* Olmer, J. (no affil), J. J. Moutaffian and Navatel. *Marseilles Med* 107(2):169-174, 1970.

5017 BENIGN GASTRIC TUMORS AND THEIR MECHANICAL COMPLICATIONS. *(Fr.)* Lecomte, P. (no affil), J. A. Inglesakis, H. Duplay, R. Giacobi and K. J. Kermarec. *Marseilles Med* 107(2):157-158, 1970.

5018 DISCUSSION OF GASTROPTOSIS, ENTEROPTOSIS AND THEIR TREATMENT. *(Ger.)* Kohler, G. (Bremen, Germany). *Z Allgemeinmed* 46(2):80-82, 1970.

- P:Motil (4801)
- P:Secr:Int (4866)
- Diagproc (4888)(4890)(4910)(4923)(4928)(4930)(4935)(4943)(4950)
- D:Esoph (4957)(4963)(4967)(4970)(4973)
- D:Stomduo:Peptulc (5040)
- D:S.Intest:Malabs (5073)(5079)(5080)
- D:Pancreas (5147)
- D:Pancreas:Pancreat (5155)
- D:Livbil:Gallb (5317)(5318)(5322)(5330)
- D:Gen (5382)

STOMACH AND DUODENUM

Peptic Ulcers

5019 PENTAGASTRIN AS A STIMULANT IN ROUTINE CLINICAL TESTING OF GASTRIC ACID SECRETION. *(E.)* Pedersen, S. A. (Odense County City Hosp., Denmark). *Digestion* 3(2):81-89, 1970.

The effect of the synthetic pentapeptide, pentagastrin, as a stimulant of gastric acid secretion for routine clinical testing was studied in 150 patients with duodenal, prepyloric or corpus ulcer, gastric cancer or X-ray negative gastric dyspepsia. Peak acid output (PAO; expressed in mEq H^+/hr) after stimulation with pentagastrin at 6 and 9 mg/kg s.c. was 33.4 and 33.6, resp., indicating that the lower concentration caused a maximal response. PAO after stimulation with histamine (40 mg/kg s.c.) was 34.7 compared to the effect of pentagastrin (6 mg/kg s.c.) of 36.0 (with 9.9% average deviation from the highest value in duplicate examinations). Only 3 patients experienced side effects (slight and of short duration) and did not affect the study.

5020 GASTRIC MUCOSAL ULCERATION FOLLOWING VASOACTIVE AGENTS: A NEW EXPERIMENTAL METHOD. *(E.)* Pfeiffer, C. J. (Presbyterian-U. Pennsylvania Med. Ctr., Philadelphia), S. Sethbhakdi and J. L. A. Roth. *Amer J Dig Dis* 15(3):261-270, 1970.

The comparative ulcerogenicity of vasoactive cathecholamines (epinephrine and norepinephrine) on the gastric glandular mucosa was studied in male Sprague-Dawley rats. Administration of the two catecholamine in pyloric-occluded rats consistently produced hemorrhagic lesions in the fundic portion of the glandular mucosa, along the greater curvature and sometimes along the entire fundic mucosa. Histological examination showed congestion, hemorrhage and varying degrees of necrosis and erosion of the superficial layer of the mucosa. The muscalaris mucosa remained intact but the submucosa generally became edematous. In the control group (given saline injections), no lesions developed but small fundic eruptions occasionally appeared in a control group that was treated with sham operation and epinephrine. In the catecholamine-treated groups, the area of fundic mucosa covered with lesions reached a maximum of 43% when the pre-epinephrine administration period was 4 hr and when the epinephrine administration time and dose level were kept constant. Increasing the epinephrine administration time from 1 to 2 hr failed to augment the appearance of lesions when the pre-epinephrine administration time was more than 3 hr. When the pre-epinephrine administration time was shorter, fundic ulceration and hemorrhage appeared more extensively with a longer epinephrine administration time. Vagotomy protected the rats from epinephrine-induced lesions. A magnesium-aluminum hydroxide antacid gel (Maalox) protected 61% of the experimental animals from the occurrence of gross lesions and reduced the experimentally-induced ulcers in the remaining 39% to a negligible size. Titratable acidity and volume output varied directly with the total time of the assay; titratable acidity output was inversely related to the total exposure time to epinephrine.

5021 THE ACTION OF α- AND β-RECEPTOR ANTAGONISTS UPON GASTRIC ULCERATION INDUCED IN THE RAT BY PHENYLEPHRINE HYDROCHLORIDE. *(Fr.)* Djahanguiri, B. (Fac. Med., U. Teheran, Iran) and A. Pousti. *Arch Int Pharmacodyn Ther* 184(1):121-123, 1970.

The effects of an α-receptor blocking agent (phentolamine) and a β-receptor blocking agent (MJ 1999) on phenylephrine hydrochloride induced gastric ulceration was studied in 70 white rats (35 males, 35 females) fasted for 24 hr before the initiation of the experiment. Rats injected with phenylephrine hydrochloride (33 mg/kg i.p.) exhibited a 60% incidence of gastric ulcer (no ulcers were observed in serum injected controls), and of the rats treated with phenylephrine hydrochloride (33 mg/kg) and MJ 1999 (10 mg/kg), 65% had gastric ulcers. Phenylephrine hydrochloride (33 mg/kg) and phentolamine (2 mg/kg) reduced the incidence of gastric ulcer to 15%.

5022 THE PRESENT VIEWPOINT IN DAKAR REGARDING THE TREATMENT OF GASTRODUODENAL ULCERS: 250 CASES FROM 1963 TO 1968. *(Fr.)* Chabal, J. (no affil) and R. Izarn. *Afr Med J* 19(1):30-33, 1970.

5023 RECESSES OF THE GREATER CURVATURE OF THE STOMACH. *(Fr.)* Ledoux-Lebard, G. (C. H. U., Cochin, France), J. F. Moreau and B. Tassin. *Progres Med* 98(5-6):73-80, 1970.

5024 REPARATIVE SURGERY FOLLOWING OPERATION FOR GASTRIC ULCER: INDICATIONS, TECHNIQUE, AND RESULTS. *(Ger.)* Kronberger, L. (Surg. U. Clin. Graz, Germany). *Prakt Chir* 84:1-76, 1970.

5025 108 CASES OF DUODENAL ULCER. (1947 TO 1969). *(Fr.)* Buffat, J. D. (Lausanne, Switzerland). *Praxis* 59(11):390-393, 1970.

5026 CURRENT CONCEPTS OF THE SURGICAL MANAGEMENT OF THE DUODENAL ULCER. *(Fr.)* Jost, A. (Lausanne, Switzerland). *Rev Med Suisse Rom* 90(2):167-178, 1970.

5027 RECURRENT ULCER FOLLOWING SURGERY FOR PEPTIC ULCER. *(E.)* Kirk, R. M. (Hampstead Gen. Hosp., London, England). *Brit J Clin Pract* 24(5):191-196, 1970.

5028 A TECHNIQUE OF PYLOROPLASTY IN PERFORATED DUODENAL ULCER. *(E.)* Sarma, K. P. (Bristol Roy. Infirm., England). *Brit J Clin Pract* 24(5):201-205, 1970.

5029 CIGARETTE SMOKING AND BODY FORM IN PEPTIC ULCER. *(E.)* Monson, R. R. (Harvard Sch. Publ. Hlth., Boston, Mass.). *Gastroenterology* 58(3):337-344, 1970.

5030 GASTRIC VAGOTOMY OF THE PARIETAL CELL MASS IN DUODENAL ULCER. *(Nor.)* Amdrup, E. (Copenhagen Commun. Hosp., Denmark) and H. E. Jensen. *Nord Med* 83(20):621-624, 1970.

5031 GASTROCOLONIC FISTULA DUE TO SPONTANEOUS ULCER OF GREATER CURVATURE OF THE STOMACH. *(Fr.)* Perrotin, J. (Hosp. Lariboisiere, Paris, France), J. Testart, C. Perol and A. Galian. *Ann Chir* 24(3-4):221-227, 1970.

5032 GASTROENTERIC MOTILITY OF PATIENTS OPERATED FOR GASTRODUODENAL ULCER. *(Por.)* Rosenberg, D. (Fac. Med. U. Campesinas, Portugal), F. Secaf, N. Carvalho and L. R. Aratangy. *Rev Paul Med* 75(4):243-250, 1969.

5033 OBSERVATIONS ON ACID COMPONENT OF GASTRIC SECRETION AND BASAL ACIDITY IN NORMAL SUBJECTS OR WITH DUODENAL ULCER. *(It.)* Fincato, M. (Hosp. Fatebenefratelli, Fatebenesorelle Ciceri Agnesi, Milan, Italy), L. Vincenzi, G. Ubezio and C. Corsi. *Chir Gastroent* 4(1):3-15, 1970.

5034 ULCER HEMORRHAGE FROM THE GASTRODUODENAL ARTERY. *(Ger.)* Roding, H. (Med. Acad. Magdeburg, Germany). *Z Aertzl Fortbild* 64(2):60-63, 1970.

5035 SIMPLIFICATION OF ANTI-ULCER THERAPY: THE USE OF DOGMATIL IN GASTRODUODENAL ULCERS. *(Fr.)* Grenaudier, J. L. (Paris, France). *Therapeutique* 46(2):199-200, 1970.

5036 ERRONEOUS INDICATIONS FOR SURGICAL TREATMENT OF DUODENAL ULCERS: AVOIDANCE THROUGH MODERN SECRETION TESTS. *(Ger.)* Feifel, G. (Surg.

Clin. U. Munich, Germany) and W. Lorenz. *Munchen Med Wschr* 112(14):651-654, 1970.

5037 ULCER RECURRENCE VERSUS DEATH IN PEPTIC ULCER SURGERY. *(E.)* Wangensteen, S. L. (U. Virginia Med. Ctr., Charlottesville). *Amer J Surg* 119(3):254-255, 1970.

5038 CLINICAL TRIAL OF SULPIRIDE IN ULCERATIVE DISEASE. *(Fr.)* Chapuy, A. (Hosp. St. Joseph, Lyon, France) and A. Bourgeat. *Lyon Med* 223(15):813-816, 1970.

5039 PERFORATION OF A GASTRIC ULCER INTO THE LEFT VENTRICLE. *(Ger.)* Grosse, H. (Dist. Hosp. Stralsund, Germany). *Deutsch Gesundh* 25(13):607-608, 1970.

5040 THERAPY OF GASTRITIS AND OF GASTRIC AND DUODENAL ULCERS. *(Ger.)* Schultis, K. (Med. Clin. Polyclin., Justus Leibig U., Geissen, Germany). *Med Welt* 21(3):104-106, 1970.

5041 THE MANAGEMENT OF GASTRIC ULCERATION. *(E.)* Bock, O. A. A. (Dept. Med., U. Stellenbosch, Union of South Africa). *S Afr Med J* 44(22):653-657, 1970.

- Diagproc (4897)(4929)
- D:Stomduo (4976)(5007)
- D:S.Intest:Malabs (5079)
- D:Livbil (5200)

SMALL INTESTINE

5042 ENDOMETRIOSIS OF THE SMALL INTESTINE. *(Fr.)* Buisson, J. (Brest, France), J. Couloigner and J. Lefranc. *Ouest Med* 23(8):858-859, 1970.

5043 A CASE OF LUNG CANCER ASSOCIATED WITH INVAGINATION OF THE JEJUNUM. *(Jap.)* Nishida, T. (Hiratsuka Kyosai Hosp., Japan), T. Nasu, A. Wada, and T. Tanaka. *Med J Mutual Aid Ass* 18(3):13-20, 1969.

5044 ILEITIS FOLLOWING ILEOSTOMY. *(E.)* Lane, D. G. (Brisbane, Australia). *Dis Colon Rectum* 13(2):143-146, 1970.

5045 ISOLATED OPEN ILEAL PATCHES. *(E.)* Taylor, W. H. (Sch. Med. Loma Linda U., Cal.). *Arch Surg* 100(5):594-595, 1970.

5046 REVERSED JEJUNAL SEGMENT ONE YEAR AFTER OPERATION. *(E.)* Herrington, J. L., Jr. (Vanderbilt U. Med. Ctr., Nashville, Tenn.). *Amer J Surg* 119(3):340-342, 1970.

5047 GALLSTONE ILEUS: A REVIEW AND REPORT OF FOUR CASES. *(E.)* Menick, F. (United Hosp., Port Chester, New York), M. C. C. Kim and F. J. Menick. *Int Surg* 53(5):368-376, 1970.

5048 STENOTIC ULCER OF THE SMALL INTESTINE AFTER THE INGESTION OF A SINGLE POTASSIUM CHLORIDE PILL. *(Fr.)* Tostivint, R. (Dreux, France), H. Rozenberg and L. Chauveinc. *Chirurgie* 96(4):316-318, 1970.

5049 HERNIAS AND DIAPHRAGMATIC EVENTRATIONS IN THE NEWBORN. *(Fr.)* Borde, J. (C.H.U. Rouen, France). *Rev Prat* 20(8):1181-1197, 1970.

5050 PERFORATION OF MECKEL'S DIVERTICULUM IN THE NEWBORN: SUCCESSFUL SURGICAL MANAGEMENT. *(Ger.)* Schickedanz, H. (Surg. Clin. Polyclin, Friedrich Schiller U., Jena, Germany). *Z Kinder Chir* 8(1-2):71-78, 1970.

5051 MECKEL'S DIVERTICULUM: A CASE WITH UNCOMMON SYMPTOMATOLOGY. *(It.)* Giraldi, L. (Child. Hosp. Bulgarini, Mantua, Italy), G. Monguidi, V. Accordi and A. Mossini. *Chir Gastroent* 4(1):54-64, 1970.

5052 DISEASE OF THE SMALL BOWEL: PAST, PRESENT, AND FUTURE. *(E.)* Phillips, J. F. (St. U. New York Buffalo, Sch. Med.). *New York J Med* 70(11):1291-1293, 1970.

5053 GALLSTONE ILEUS: A CONTINUING SURGICAL PROBLEM. *(E.)* Hudspeth, A. S. (Bowman Gray Sch. Med., Wake Forest U., Winston-Salem, N.C.) and W. F. McGuirt. *Arch Surg* 100(6):668-672, 1970.

5054 GALLSTONE ILEUS. *(E.)* Whitesell, F. B., Jr. (Arlington Hosp., Va.). *Amer Surg* 36(5):317-321, 1970.

5055 PREOPFRATIVE MANAGEMENT OF PATIENTS WITH MECHANICAL BOWEL OBSTRUCTION. *(E.)* Feller, W. F. (Georgetown U. Sch. Med., Washington, D.C.). *Amer Surg* 36(5):309-316, 1970.

5056 INDICATION, TECHNIQUE AND RESULTS IN NOBLE' OPERATION FOR SEVERE ADHESION ILEUS. *(Ger.)* Voelkel, H. (St. Hosp., Mannheim, Germany). *Bruns Be Klin Chir* 218(1):44-8, 1970.

5057 DERMATITIS HERPETIFORMIS AND PATHOLOGICAL CHANGES OF THE MUCOUS MEMBRANE OF THE SMALL INTESTINE. *(E.)* Van De Staak, W. J. B. M. (St. Radboud Hosp., Nijmegen, Netherlands), J. H. M. Van Tongeren, P. H. M. Schillings and L. Doomernik. *Dermatologica* 140(4):231-241, 1970.

5058 NEONATAL INTESTINAL OCCLUSIONS. *(Fr.)* Bensahel, H. (Hosp. Bretonneau, Paris, France). *Rev Prat* 20(8):1125-1139, 1970.

5059 ENDOMETRIOSIS OF THE SMALL INTESTINE. *(Ger.)* Ruhl, R. (St. Hosp. Saarlouis, Germany). *Chirurg* 41(4):184-185, 1970.

5060 SURGERY OF POSTOPERATIVE ILEUS. *(Ger.)* Kern, E. (Surg. U. Clin. Wurzburg, Germany). *Chirurg* 41(3):130-134, 1970.

5061 THE ENTEROPTOSES. TECHNIQUES - INDICATIONS - RESULTS. *(Fr.)* Derasse, G. (no affil) and M. Vankemmel. *Lille Chir* 25(2):92-98, 1970.

5062 THE PROBLEM OF THERAPY IN THE FREE PERFORATED JEJUNAL ULCER. *(Ger.)* Unger, K. (Dist. Hosp. Karl Marx St., Germany) and P. Daniel. *Zbl Chir* 95(7):223-226, 1970.

5063 DIAGNOSIS AND THERAPY OF THE MECONIUM ILEUS. *(Ger.)* Gottschalk, B. (Med. Acad. Carl Gustav Carus, Dresden, Germany), G. K. Hinkel and W. Schubert. *Z Aertzl Fortbild* 64(5):227-235, 1970.

5064 LIFE-THREATENING HEMORRHAGE DUE TO A MECKEL'S DIVERTICULUM. *(Ger.)* Bar, W. (Med. Acad. Erfurt, Germany) and H. Lammel. *Zbl Chir* 95(9):302-304, 1970.

o P:Absorp (4764)
o P:Motil (4803)
o P:Secr:Int (4866)
o Diagproc (4900)(4901)(4913)(4939)
o D:Gen (5334)(5351)

SMALL INTESTINE

Regional Enteritis

5065 WHEN TO OPERATE IN REGIONAL ENTERITIS. *(E.)* Morowitz, D. A. (Malcolm Grow USAF Med. Ctr., Andrews AFB, Washington, D.C.). *Med Times* 98(6):169-176, 1970.

5066 THE VASCULAR PICTURE IN REGIONAL ENTERITIS (CROHN'S DISEASE) AND ITS DIAGNOSTIC SIGNIFICANCE. *(Ger.)* Dombrowski, H. (Med. U. Clin., Marburg, Germany) and G. Korb. *Radiologie* 10(1):17-24, 1970.

5067 A CASE OF CROHN'S DISEASE LOCALIZED EXCLUSIVELY IN THE APPENDIX. *(It.)* Sbriccoli, A. (Inst. Clin. Gen. Surg., Surg. Ther., U. Bologna, Italy). *Rass Int Clin Ter* 49(23):1464-1469, 1969.

5068 INDICATIONS FOR SURGERY IN CROHN'S DISEASE. *(Nor.)* Wenckert, A. (Allmanna Hosp., Malmo, Sweden), F. Brahme and T. Nilsson. *Nord Med* 83(11):334-339, 1970.

5069 REGIONAL ENTERITIS AND CELIAC ARTERY STENOSIS WITH NEGATIVE SMALL BOWEL STUDIES. *(E.)* Mauer, I. (Tufts U. Med. Sch., Boston, Mass.) and R. Levitan. *Digestion* 3(2):105-110, 1970.

5070 MASSIVE GASTROINTESTINAL HEMORRHAGE DUE TO REGIONAL ENTERITIS: CASE REPORT AND BRIEF REVIEW OF THE LITERATURE. *(E.)* Gerami, S. (West Virginia U. Med. Ctr., Morgantown), G. W. Easley, M. S. Azer and C. B. Mendoza, Jr. *West Virginia Med J* 66(6):185-186, 1970.

o Diagproc (4939)
o D:S.Intest:Malabs (5076)
o D:L.Intest:Ulccol (5127)

SMALL INTESTINE

Malabsorption

5071 TOLBUTAMIDE AND STEATOSIS. STUDIES IN THE RAT. *(Fr.)* Barthe, J. (Inst. Pasteur, Lyon, France) and J. A. Grimaud. *Path Biol* 18(5-6): 255-259, 1970.

The effect of tolbutamide (5-50 mg/kg body weight) on the body weight, liver mass, total liver lipids and mortality rate was studied in Wistar rats fed a low-choline diet to produce steatorrhea. During the first 3 months, the mortality rate in tolbutamide treated rats was much higher than the untreated group (probably due to the gavage); between 3 months and 1 yr, the treated rats had a lower mortality rate (3/36) than the untreated (10/58); and after 1 yr the untreated animals had a lower mortality rate (5/57) than those treated with tolbutamide (14/36). Up to the 200th day, the tolbutamide-treated animals showed a greater weight gain than untreated controls (which were closer to the normal weight); but after the 300th day, the treated animal's weight increase was only 50 gm in 200 days, compared to 115 gm in 200 days for untreated controls. There was no significant difference in the hepatic mass between treated and untreated animals. Biochemical signs of fatty liver persisted in treated rats.

5072 ALTERATION OF COBALT ABSORPTION IN PORTAL CIRRHOSIS AND IDIOPATHIC HEMOCHROMATOSIS. *(E.)* Valberg, L. S. (Dept. Path., Queen's U., Kingston, Ontario, Canada), D. Olatunbosun, W. E. N. Corbett and J. Ludwig. *J Lab Clin Med* 75(5):754-762, 1970.

The absorption and body retention of p.o. inorganic cobalt or iron tagged with ^{57}Co and ^{59}Fe, resp., (20 μm $CoCl_2$ or $FeCl_3$ with 1 μC $FeCl_3$ or $CoCl_2$, resp.) were measured by the recovery of radioactivity in the urine of patients with either normal iron stores, iron depletion, fatty infiltration and liver degeneration with normal iron stores, cirrhosis with normal iron stores, cirrhosis with iron depletion, portal cirrhosis with iron overload, or idiopathic hemochromatosis. Control subjects with normal iron stores averaged 44% absorption of cobalt and 27% of iron and the patients with degenerated livers and with cirrhosis in combination with normal iron stores did not deviate from these norms (although 2 subjects with portacaval shunt showed an increase to 62% for cobalt absorption) while those with iron deficiency had higher absorption levels for both cobalt and iron (70% and 62%, resp.). Absorption for cobalt and iron increased for patients with cirrhosis and secondary iron overload (73% and 59%, resp.) and for patients with cirrhosis and iron overload of unknown occurrence (74% and 73%, resp.). Direct correlations were observed between the intestinal absorption of iron and cobalt in controls with normal iron and iron depletion and in patients with degenerated livers and portal cirrhosis, and between the percent of the cobalt test dose absorbed and the percent excreted in the urine in all the patients. Cobalt absorption was increased in idiopathic hemochromatosis and portal cirrhosis when complicated by iron deficiency or endogenous iron overload.

5073 ABSORPTION OF D-XYLOSE AND FAT AND HISTOLOGICAL CHANGES OF THE SMALL INTESTINE IN PATIENTS AFTER PARTIAL GASTRECTOMY. *(E.)* Beno, I. (Res. Inst. Human Hutr., Bratislava, Czechoslovakia), A. Bucko, V. Chorvathova and J. Babala. *Digestion* 3(2):97-104, 1970.

Small intestinal function (d-xylose test and fecal fat excretion) was measured and jejunal biopsies from 60 patients following partial gastrectomy were studied. Twenty healthy volunteers served as controls in the d-xylose test. The mean d-xylose plasma level in patients (at 2 hr after d-xylose consumption) was 30.9 ± 8.1 mg/100 ml, compared with 41.5 ± 10.2 mg/100 ml in the control group. In 21/60 patients the plasma level of d-xylose was lower than the lowest level in the control group (27.7 mg/100 ml). The mean quantity of d-xylose excreted in the urine after 5 hr was 6.2 ± 2.8 g in the patient group, and 8.8 ± 3.0 g in the control group. The mean fat excretion in the stool was 5.7 g/day (range: 0.8 - 21.3 g/day) in all patients, and in 11 patients (32.3%) the excretion of fat was higher than 5.0 g/day. Jejunal biopsy revealed a normal jejunal mucosa in 14 patients (23.3%); a mild interstitial jejunitis in 12 patients (20.7%), an interstitial jejunitis with signs of atrophic jejunitis in 8 patients (12.7%), and no cases of severe atrophic jejunitis.

5074 STUDIES IN FOLIC ACID ABSORPTION WITH ^{3}H-PTEROYLGLUTAMIC ACID. *(Ger.)* Schulten, H. J. (1st Med. Clin. U. Hamburg, Germany) and K. Becker. *Z Gastroent* 8(2):80-83, 1970.

Folic acid absorption was studied in blood and urine samples after an i.v. or i.m. administration of 15 mg of folic acid in 25 patients (controls) without malabsorption, 3 patients with idiopathic steatorrhea, 3 patients with chronic hepatitis and 3 patients with cirrhosis. Serum folic acid levels in controls at 30 and 120 min after i.v. folic acid administration were 1.0% and 0.75%, resp., of the administered dose. Serum folic acid levels at 30 min after folic acid administration were decreased in patients with steatorrhea, hepatitis or cirrhosis and at 120 min were decreased only in patients with hepatitis. Approximately 43% of an i.m. dose of 15 mg of folic acid was eliminated in the urine within 24 hr in controls, 26% in patients with steatorrhea, 33% in patients with cirrhosis, and 38% in patients with hepatitis. Folic acid absorption determinations may be useful in the diagnosis of malabsorption syndromes.

5075 WHOLE BODY COUNTING OF VITAMIN B_{12} ^{58}Co ABSORPTION BY PROFILE SCANNING. *(E.)* Finlayson, N. D. C. (Roy. Infirm., Edinburgh, Scotland), J. D. Simpson and D. J. C. Shearman. *Scand J Gastroent* 5(4):261-264, 1970.

The profile scan patterns and Vitamin B_{12} absorption were measured for one week in 24 subjects following administration of a test dose of 0.5 μg cyanocobalamin containing 1 μC of ^{58}Co. All subjects had normal liver function tests, 15 had normal absorption (> 40%) of cyanocobalamin, and 9 had malabsorption (< 25%). The mean stool radioactivity in the 24 hr preceding the final whole body count and profile scan study on the seventh day was 0.6% (range: 0 to 5%) of the test dose. Twenty-one of the 24 subjects showed a two-peaked pattern of profile scan during the absorption test week. A normal subject showed an initial single radioactivity peak over the stomach, which in 24 to 48 hr was replaced by two peaks: the first over the liver and the second over the bowel ("the intestinal peak"). The intestinal peak tended to disappear between the third and sixth day, accompanied by the largest fall in body radioactivity. No subject showed a fall in whole body radioactivity of more than 5% between the disappearance of the intestinal peak and the end of the test. Three of the 24 subjects showed only one peak of radioactivity during the test, and the pattern was associated with malabsorption. One subject with normal absorption did not show a separate intestinal peak during the test, presumably as a result of the overlapping of the liver and intestinal radioactivity.

5076 RETENTION OF ORAL ^{47}Ca IN PATIENTS WITH INTESTINAL MALABSORPTION: REGIONAL EN-TERITIS AND PANCREATIC INSUFFICIENCY. *(E.)* Sjoberg, H. E. (Karolinska Hosp., Stockholm, Sweden) and L. H. Nilsson. *Scand J Gastroent* 5(4):265-272, 1970.

5077 DYSGAMMAGLOBULINEMIA ASSOCIATED WITH MALABSORPTION AND TETANY. *(E.)* Schaefer, J. W. (U. Kentucky Coll. Med., Lexington), F. L. Anderson and E. D. Pellegrino. *Amer J Dig Dis* 15(3):279-286, 1970.

5078 JEJUNAL DIVERTICULOSIS WITH MALABSORPTION LEADING TO OSTEOMALACIA AND PROBABLE RICKETS. *(E.)* Jones, C. R. (Christchurch Hosp., Hants, England) and K. L. De Silva. *Geront Clin* 12(2):80-87, 1970.

5079 GROWTH RETARDATION, ANEMIA AND INFECTION, WITH MALABSORPTION AND INFESTATION OF THE BOWEL: THE SYNDROME OF PROTEIN-CALORIE MALNUTRITION IN AUSTRALIAN ABORIGINAL CHILDREN. *(E.)* Jose, D. G.

5080 IMPAIRED INTESTINAL ABSORPTION IN THE ZOLLINGER-ELLISON SYNDROME INDEPENDENT OF GASTRIC HYPERSECRETION. *(E.)* Wright, H. K. (Yale U. Sch. Med., New Haven, Conn.), T. Hersh, M. H. Floch and L. D. Weinstein. *Amer J Surg* 119(3):250-253, 1970.

5081 MALABSORPTION IN CIRRHOSIS. *(E.)* Linscheer, W. G. (Tufts U. Sch. Med., Boston, Mass.). *Amer J Clin Nutr* 23(4):488-492, 1970.

5082 MALABSORPTION SYNDROME IN A PATIENT INFECTED WITH *STRONGYLOIDES STERCORALIS*. *(E.)* Toh, C. C. S. (Gen. Hosp., Singapore) and K. W. Chow. *Ann Trop Med Parasit* 63(4):493-497, 1969.

5083 THE EFFECT OF VITAMIN B_{12} ON GLUCOSE ABSORPTION OF THE ILEUM. *(Ger.)* Hadnagy, C. (2nd Med. U. Clin. Marosvasarhely, Rumania) and F. Gyergyay. *Z Gastroent* 8(2):84-85, 1970.

5084 GLUCOSE-GALACTOSE MALABSORPTION: A STUDY OF THE TRANSFER OF GLUCOSE ACROSS THE RED CELL MEMBRANE. *(E.)* Meeuwisse, G. W. (Dept. Pediat., U. Lund, Sweden). *Scand J Clin Lab Invest* 25(2):145-149, 1970.

5085 CELIAC DISEASE. *(E.)* Kowlessar, O. D. (Jefferson Med. Coll., Philadelphia, Pa.) and L. D. Phillips. *Med Clin N Amer* 54(3):647-656, 1970.

5086 CHRONIC INTESTINAL ISCHEMIA WITH SEVERE MALABSORPTION TREATED BY RECONSTRUCTION OF THE SUPERIOR MESENTERIC ARTERY. *(Nor.)* Nerstrom, B. (U. Hosp., Copenhagen, Denmark) and H. Worning. *Nord Med* 83(19):591-594, 1970.

5087 WHIPPLE'S DISEASE: A REVIEW OF 19 PATIENTS FROM ONE HOSPITAL AND A REVIEW OF THE LITERATURE SINCE 1950. *(E.)* Maizel, H. (Duke U. Med. Ctr., Durham, N.C.), J. M. Ruffin and W. O. Dobbins, III. *Medicine* 49(3):175-204, 1970.

5088 MALABSORPTION IN SKIN DISEASES. *(E.)* Berndt, H. (Robert Roessle Clin., Berlin, Germany). *Digestion* 3(2):122-125, 1970.

5089 MALABSORPTION AND SCHISTOSOMAL INVOLVEMENT OF JEJUNUM. *(E.)* Sherif, S. M. (Heliopolis, UAR). *Brit Med J* 1(5697):671-672, 1970.

o P:Absorp (4755)(4773)
o Diagproc (4939)
o D:Gen (5377)(5380)

5090 PROPULSION (MASS MOVEMENTS) IN THE HUMAN COLON AND ITS RELATIONSHIP TO MEALS AND SOMATIC ACTIVITY. *(E.)* Holdstock, D. J. (Central Middlesex Hosp., London, England), J. J. Misiewicz, T. Smith and E. N. Rowlands. *Gut* 11(2):91-99, 1970.

Radiopaque markers, radiotelemetering capsules, Perspex capsules containing ^{51}Cr, and free ^{51}Cr sodium chromate were used to measure the propulsive activity of the colon of 27 patients, 19 of which had the irritable colon syndrome. Intraluminal pressure activity rose from a pre-meal level of 10.5-15.3% to a level of 35.4% during eating and 23.7-32.4% after eating; motility increased from a pre-food level of 0.82-0.97 to 1.61 while eating and 1.44-1.64 after eating. The increase in intraluminal pressure was rarely associated with propulsive activity in the resting patient but physically active patients exhibited an increased propulsion of colon contents after meals. This colonic propulsion was carried out by a series of mass movements. ^{51}Cr either in capsules or in free form allowed repeated observations on the some patient without recourse to radiography. Radiopaque markers also allowed repeated observations when films exposed at low mA were used. Somatic activity is seemingly an important factor in the control of colonic transit.

5091 DILATATION TREATMENT OF HEMORRHOIDS. *(E.)* Carden, A. B. G. (Melbourne, Australia). *Med J Aust* 57(9):437-438, 1970.

5092 APPENDICITIS AND PREGNANCY. *(Ger.)* Durst, J. (U. Surg. Clin. Tubingen, Germany), A. Pfliederer and H. Richter. *Deutsch Med Wschr* 95(7): 323-326, 1970.

5093 CONGENITAL MALFORMATIONS OF THE ANUS AND RECTUM. *(Fr.)* Bertin, P. (Hosp. Child. Dis., Paris, France) and D. Pellerin. *Rev Prat* 20(8):1141-1156, 1970.

5094 CLINICAL STUDY OF A NEW MINI-ENEMA: RECTOPANBILINE GEL. *(Fr.)* Chabanon, R. (no affil) *J Med Lyon* (1182):705-707, 1970.

5095 CYSTOMETRIC EXAMINATIONS FOLLOWING RECTUM AMPUTATION. *(Ger.)* Schroeder, H. (Surg. Clin. Polyclin., Friedrich Schiller U., Jena, Germany), M. Kempter and H. S. Eseimokumoh. *Chirurg* 41(4):163-166, 1970.

5096 THE MELANOSIS COLI. *(Ger.)* Henning, N. (Erlangen, Germany). *Z Gastroent* 8(2): 71-74, 1970.

5097 A CASE OF FATAL FULMINATING GAS GANGRENE COMPLICATING AN ACUTE APPENDIX OPERATION. *(Fr.)* Nini, W. (Hosp. Tripoli, Lebanon), N. Nini and I. Assoud. *Chirurgie* 96(2):174-177, 1970.

5098 RECTAL STONE: REPORT OF A CASE. *(E.)* Lieber, A. (Albert B. Chandler Med. Ctr., U. Kentucky, Lexington) and S. M. Alavi. *Amer J Dig Dis* 15(3):287-290, 1970.

5099 EXTRAMEDULLARY PLASMACYTOMA OF THE COLON. *(E.)* Miller, W. A. (Mem. Med. Ctr., Savannah, Ga.). *J Canad Ass Radiol* 21(1):33-34, 1970.

5100 ABDOMINAL FIBRODYSPLASIA AND POLYPOSIS COLI. *(E.)* Hughes, L. E. (Roy. Brisbane Hosp., Australia). *Dis Colon Rectum* 13(2):121-123, 1970.

5101 THE EFFECT OF SURROUNDING INFECTION UPON THE HEALING OF COLONIC WOUNDS: EXPERIMENTAL STUDIES AND CLINICAL EXPERIENCES. *(E.)* Ryan, P. (St. Vincent's Hosp., Melbourne, Australia). *Dis Colon Rectum* 13(2):124-126, 1970.

5102 AN EPIDEMIOLOGICAL INVESTIGATION OF HEMORRHOIDS. *(E.)* Hyams, L. (Rutgers Med. Sch., New Brunswick, N.J.) and J. Philpot. *Amer J Proct* 21(3):177-193, 1970.

5103 APPENDICEAL DIVERTICULITIS: STUDY OF 61 CASES. *(Fr.)* Deschenes, L. (Holy Sacrament Hosp., Quebec, Canada), J. Couture, R. Bujold and R. Garneau. *Un Med Canada* 99(6):1116-1119, 1970.

5104 EXTERNAL ENDOMETRIOSIS: A CASE OF ENDOMETRIOSIS OF THE APPENDIX. *(It.)* Benini, L. (Civ. Hosp. Zavarise Manani, Verona, Italy) and C. Buscemi. *Chir Gastroent* 4(1):65-76, 1970.

5105 HEMATOMA OF THE SIGMOID MESOCOLON. *(Fr.)* Perrotin, J. (Hosp. Lariboiserie, Paris, France), J. Testart, P. Reimund, R. Virag and A. Galian. *Ann Chir* 24(3-4):215-220, 1970.

5106 SATISFACTORY RESULTS IN TREATMENT OF FOUR CASES OF HEMORRHAGIC RECTOCOLITIS WITH TWO PARTICULARLY SERIOUS FORMS TREATED WITH AZATHIOPRINE. *(Fr.)* Vachon, A. (Lyon, France), R. Tete, J. Gauthier, R. De Montgolfier, P. Kressmann and S. C. Aschraf. *Arch Franc Mal Appar Dig* 59(4-5): 209-222, 1970.

5107 PREOPERATIVE EVALUATION AND PREPARATION OF THE PATIENT WITH COLONIC CANCER. *(E.)* Swinton, N. W., Sr. (Lahey Clin., Boston, Mass.) and D. D. O'Keefe. *Surg Clin N Amer* 50(3):737-741, 1970.

5108 DUPLICATION OF THE RECTUM. *(E.)* MacLeod, J. H. (Los Angeles, Cal.) and J. K. B. Purves. *Dis Colon Rectum* 13(2):133-137, 1970.

5109 PRESACRAL DEVELOPMENTAL CYSTS IN MOTHER AND DAUGHTER: REPORT OF CASES. *(E.)* Theuerkauf, F. J. Jr., (Mayo Clin., Rochester, Minn.), J. R. Hill and W. H. ReMine. *Dis Colon Rectum* 13(2): 127-132, 1970.

5110 286 CASES OF CANCER OF THE ANAL CANAL. THE ROLE OF SURGERY AND OF COBALT THERAPY. *(Fr.)* Pilleron, J. P. (Curie Found., Paris, France), J. Rousseau, P. Debertand, J. C. Durand, G. Mathieu and P. Descamps. *Chirurgie* 96(2):143-151, 1970.

5111 RECTAL OCCLUSION BY PROSTATIC CANCER. *(Fr.)* Wemeau, L. (no affil), M. Verhaeghe, J. Delhay, J. Blanckaert and J. Wemeau. *Lille Chir* 25(2):99-109, 1970.

5112 PALLIATIVE RADIATION THERAPY IN PATIENTS WITH LOCALIZED CANCER OF THE COLON AND RECTUM. *(E.)* Stearns, M. W., Jr. (New York, N.Y.), H. W. Whiteley, Jr., R. H. Leaming and M. R. Deddish. *Dis Colon Rectum* 13(2):112-115, 1970.

5113 APPENDICEAL ABSCESS AS CONTENTS OF RIGHT FEMORAL HERNIA: A CASE REPORT. *(E.)* Gerami, S. (West. Virginia U. Sch. Med., Morgantown), G. W. Easley and C. B. Mendoza, Jr. *Int Surg* 53(5): 354-356, 1970.

5114 SURGERY INVOLVING DIVERTICULITIS OF THE COLON. *(E.)* Einsel, I. H. (Cleveland, Ohio). *Amer J Proct* 21(3):194-205, 1970.

5115 RECTAL PROLAPSE. *(Ger.)* Stelzner, von F. (Surg. U. Clin., Hamburg, Germany). *Ther Umsch* 27(4):248-255, 1970.

5116 HEALING OF FECAL FISTULA INITIATED BY SYNTHETIC LOW-RESIDUE DIET. *(E.)* Bode, H. H. (Massachusetts Gen. Hosp., Boston) and W. H. Hendren. *Lancet* 1(7653):954, 1970.

5117 COLOVESICAL FISTULA DUE TO COLON DIVERTICULITIS. *(E.)* Firfer, R. (Chicago Med. Sch., Ill.) and R. J. Maganini. *Amer J Proct* 21(3):206-211, 1970.

5118 CHEMOPROPHYLAXIS IN LARGE BOWEL SURGERY: III. EFFECT OF ANTIBIOTICS ON INCIDENCE OF LOCAL RECURRENCE. *(E.)* Hughes, E. S. R. (Roy. Melbourne Hosp., Australia), K. J. Hardy and A. M. Cuthbertson. *Med J Aust* 57(8):369-371, 1970.

5119 POLYPS IN THE LARGE BOWEL IN CHILDREN. *(E.)* Cremin, B. J. (Red Cross Child. Hosp., Cape Town, South Africa) and J. H. Louw. *Clin Radiol* 21(2):195-200, 1970.

5120 TECHNIQUES OF TOTAL APPENDECTOMY. *(E.)* Reynolds, Walker, Jr. (Anniston Mem. Hosp., Texas). *Surg Gynec Obstet* 130(5):891-896, 1970.

5121 THE TREATMENT OF ACUTE VOLVULUS OF THE PELVIC COLON. *(Fr.)* Barbier, M. (Hosp. Casablanca, Morocco) and L. Peltier. *Chirurgie* 96(4):291-293, 1970.

P:Morph (4729)
P:Motil (4800)(4802)
P:Secr:Int (4867)
P:Gen (4881)
Diagproc (4894)(4900)(4901)(4902)(4912)(4915)
D:S.Intest:Regent (5067)
D:Livbil (5198)
D:Gen (5351)

LARGE INTESTINE

Ulcerative Colitis

5122 THE DETOXIFICATION OF THE LIVER, BY MEANS OF THE GLUCURONIDATION OF o-IODOBENZOIC ACID-^{131}I (OIB-TEST) IN ULCERATIVE COLITIS: PRELIMINARY. *(Ger.)* Dohnalek, J. (1st Med. Clin., J. E. Purkyne U., Brno, Czechoslovakia), J. Polcakova, M. Eysselt, M. Skalova and A. Polaskova. *Wien Med Wschr* 120(16):285-287, 1970.

A method for the determination of morphological changes in the liver in ulcerative colitis by means of o-iodobenzoic acid-I^{131} glucuronidation was developed and conducted during a 6 hr period following the oral administration of 2 mg of this compound together with 20 µC radioactive iodine. The metabolites of 3 urine samples were separated electrophoretically and evaluated by a Geiger counter and from the relative values of the main metabolite (o-iodine benzoylglucuronide), the absolute values were calculated (in micrograms). An investigation in 47 ulcerative colitis patients (15 with light, 23 with moderate, and 9 with severe forms) was carried out together with liver function tests, and the increased glucuronidation (with respect to the other 3 fractions) and the glucuronide excretion determined at the 2nd, 4th, and 6th hr after o-iodobenzoic acid administration. In 28 of the 47 patients (50.7%), glucuronidation was increased and in 16 of these (53.5%) a simultaneous increase in glucuronides occurred (the o-iodine benzoylglucuronides being increased about 90%). An increased absolute value of glucuronides was found in 21 cases (46.7%), in 14 of whom glucuronidation was increased (66.6%). No correlation was found between glucuronidation values and its kinetics. Changes in glucuronidation were most pronounced in the severe forms of ulcerative colitis, with each urine specimen (2, 4, and 6 hr) showing an increase of 90% of the o-iodine benzoylglucuronide over the other metabolites. The liver function tests in ulcerative colitis are seemingly more often abnormal than has been supposed, and should be investigated.

5123 RESULTS OF THE SURGICAL TREATMENT OF ULCERATIVE RECTOCOLITIS: WITH REFERENCE TO 43 CASE REPORTS. *(Fr.)* Bertrand, P. (no affil), M. Girard, R. Lombard-Platet and P. Kressmann. *J Med Lyon* (1183):741-770, 1970.

5124 ULCERATIVE COLITIS: THE EXPERIENCE OF A SYDNEY TEACHING HOSPITAL. *(E.)* Gillies, M. (Roy. Prince Albert Hosp., Sydney, Australia) and A. Skyring. *Med J Aust* 57(11):526-531, 1970.

5125 APPLICATION OF PSYCHIATRY TO A DIAGNOSTIC AND THERAPEUTIC APPROACH TO HEMORRHAGIC RECTOCOLITIS AND ULCERATIVE COLITIS: REMARKS ON 6 CASES. *(Fr.)* Besancon, G. (Nantes, France). *Ouest Med* 23(7):741-747, 1970.

5126 ACUTE PERFORATION OF THE COLON IN CROHN'S DISEASE: REPORT OF A CASE. *(E.)* Babb, R. R. (Palo Alto Clin., Calif.), J. H. Kieraldo and F. G. Vescia. *Amer J Dig Dis* 15(6):573-576, 1970.

5127 TREATMENT OF ULCERATIVE COLITIS AND CROHN'S DISEASE. *(Ger.)* Classen, M. (Med. Clin. Polyclin. U. Erlangen-Nuremberg, Germany). *Therapiewoche* 20(12):482-488, 1970.

5128 THE PROBLEM OF CONTINENCE MAINTENANCE IN THE RESECTION TREATMENT OF ULCERATIVE COLITIS. *(Ger.)* Kuhlmayer, R. (Polyclin. St. Vienna, Austria). *Wien Klin Wschr* 82(19):353-356, 1970.

5129 INFARCTION OF COLON WITH ULCERATION SIMULATING GRANULOMATOUS COLITIS. *(E.)* Hunter, J. B. (U. Kentucky Med. Ctr., Lexington), A. Lieber and J. W. Scaefer. *J Canad Ass Radiol* 21(1):31-32, 1970.

5130 COMPLICATIONS OF ULCERATIVE COLITIS IN THE YEARS 1952-1959 AND 1960-1969. *(Ger.)* Benysek, L. (2nd Med. Clin. U. Olomouc, Czechoslovakia) and Z. Kojecky. *Wien Med Wschr* 120(16):272-274, 1970.

5131 THE ISOENZYME OF LACTIC DEHYDROGENASE IN ULCERATIVE COLITIS. *(Ger.)* Hendrich, F. (2nd Med. U. Clin. Brno, Czechoslovakia), V. Hule and Z. Simkova. *Wien Med Wschr* 120(16):275-276, 1970.

5132 DELAYED TYPE OF HYPERSENSITIVITY TO DESOXYRIBONUCLEIC ACID IN VARIOUS PHASES OF ULCERATIVE COLITIS. *(Ger.)* Kojecky, Z. (Med. U. Clin. Olomouc, Czechoslovakia), K. Barta and L. Benysek. *Wien Med Wschr* 120(16):276-278, 1970.

5133 WHEN SHOULD WE OPERATE ON PATIENTS WITH ULCERATIVE COLITIS? *(E.)* Veidenheimer, M. C. (Lahey Clin., Boston, Mass.). *Surg Clin N Amer* 50(3):743-748, 1970.

o D:Livbil:Gallb (5315)

LARGE INTESTINE

Granulomatous Colitis

5134 THE RETRORECTAL SOFT TISSUE SPACE IN CHILDREN: NORMAL VARIATIONS AND APPEARANCES IN GRANULOMATOUS COLITIS. (*E.*) Eklof, O. (Karolinska Hosp., Stockholm, Sweden) and J. Gierup. *Amer J Roentgen* 108(3):624-627, 1970.

The normal variation and appearance of retrorectal soft tissue was established in a series of 160 children (both sexes, age 1 to 15 years) with vague abdominal disorders, but without signs of inflammatory large bowel disease. Normal range of retrorectal soft tissue thickness (measured at shortest distance between rectum and sacrum) varied between 1 and 5 mm and retrorectal soft tissue varied from 6 to 20 mm in 8 of 28 children with granulomatous colitis. Increase in thickness was slight in 5/8 children with granulomatous colitis and was generally less marked than widths given for patients with ulcerative colitis. Marked fibrosis was observed in 5/8 children while one patient showed a less pronounced fibrosis (edema and enlarged lymph glands were present). Two patients exhibited moderate fibrosis but normal retrorectal soft tissue thickness. For differential diagnosis of granulomatous colitis and ulcerative colitis, measurement of retrorectal space thickness seemingly is non-specific and therefore insignificant, and the prognostic importance of retrorectal swelling is not yet determined.

5135 THE IMMUNOSUPPRESIVES IN GRANULOMATOUS ILEOCOLITIS: TWO RESPONSIVE CASES. *(Fr.)* Lambermont, J. (Liege, Belgium). *Presse Med* 78(19):889-890, 1970.

o D:L.Intest:Ulccol (5129)

5136 COMBINED TELECOBALT AND 5-FLUOROURACIL THERAPY IN CARCINOMA OF THE PANCREAS: A REPORT OF 97 CASES. *(E.)* Falkson, G. (H. F. Verwoerd Hosp., Pretoria, South Africa), H. C. Falkson and T. Fichardt. *S Afr Med J* 44(15):444-449, 1970.

Combined telecobalt and 5-fluorouracil therapy was investigated in 97 cases (68 males and 29 females) of advanced pancreatic carcinoma. Of 12 patients who received radiotherapy alone, none showed remissions (mean survival—2.3 months; median survival time 1 month). Forty-five (55.6%) of 81 patients treated with 5-fluorouracil, 12.5 mg/kg i.v., and radiotherapy showed objective response lasting from 1 to 20 months (average survival time for responders was 9.5 months; median time was 7 months). In 24 (60%) of 45 patients responding to combination treatment, remissions lasted for 5 months or longer (average survival 12.8 months). Of the 60 patients receiving combined therapy who were not extremely ill, 75% responded both objectively and subjectively. Side effects with 5-fluorouracil included mild nausea, diarrhea, thrombocytopenia, photosensitivity, hyperpigmentation and alopecia. Median survival time for patients treated with combined therapy was not significantly greater than that reported for untreated patients, but the therapy is an acceptable short-term method for advanced pancreatic carcinoma treatment.

5137 PANCREATIC FUNCTION FOLLOWING PROXIMAL PANCREATECTOMY. *(E.)* De Lane, L. R. (U. Texas Med. Branch, Galveston), J. C. Fish and W. M. Haglund. *Texas Rep Biol Med* 27(4):963-968, 1970.

Pancreatic function was studied in 12 parasite-free mongrel dogs following pancreatectomy (Group I, pancreatic duct obstruction in 6 dogs; Group II, no prior obstruction in 6 dogs). Pancreatic atrophy occurred in both groups of dogs following proximal resection of pancreas. Atrophy and the resulting pancreatic insufficiency were due to stenosis of pancreatic duct at implantation site. Parenchymal atrophy also affected islet cell formation leading to insulin insufficiency and abnormal glucose tolerance. Preliminary obstruction of pancreatic duct did not influence the eventual outcome of proximal pancreatectomy. Direct duct-to-bowel-mucosa anastomosis instead of pancreatic stump invagination into bowel lumen seemingly may prevent pancreatic insufficiency.

5138 CHROMOSOME FINDINGS AND DERMATOGLYPHICS IN MUCOVISCIDOSIS. *(Ger.)* Schwanitz, G. (Inst. Human Genet. Anthropol., U. Erlangen-Nuremberg, Germany) and H. D. Rott. *Fortschr Med* 88(5): 194-197, 1970.

5139 PANCREATIC CYSTS. *(Ger.)* Fehr, A. M. (Winterthur Canton Hosp., Switzerland) and R. Gubler. *Ther Umsch* 27(4):224-226, 1970.

5140 A CONTRIBUTION TO THE CLINIC OF PANCREATIC CYSTS. *(Ger.)* Berger, H. J. (Surg. Clin. Braunschweig, Germany). *Med Welt* 21(19):876-880, 1970.

5141 CANCER OF THE PANCREAS. *(Ger.)* Erb, E. (Winterthur Canton Hosp., Switzerland) and P. M. Ferrero. *Ther Umsch* 27(4):227-232, 1970.

5142 RECENT TRAUMATIC INJURY TO THE PANCREAS. *(Fr.)* Clot, P. (Hosp. Cochin, Paris, France) and J. Poilleux. *J Chir* 99(2):145-156, 1970.

5143 THE RELATIONSHIP BETWEEN EXOCRINE PANCREATIC FUNCTION AND THIAMINE ABSORPTION. *(Ger.)* Kasper, (H. Med. Clin. Polyclin., Justus Liebig U., Giessen, Germany). *Klin Wschr* 49(6): 377-378, 1970.

5144 THE CLINICAL ASPECT OF PANCREATIC PSEUDOCYSTS. *(Ger.)* Schmidt, H. D. (St. Hosp. Karlsruhe, Germany), K. Spohn and M. Auerbach. *Forstschr Med* 88(11):461-465, 1970.

5145 ARTERIAL VASCULARIZATION OF THE PANCREAS AND ITS SURGICAL DIFFICULTIES. *(Fr.)* Melliere, D. (no affil). *Vie Med* 51(9):1227-1240, 1970.

5146 THE NON-SECRETING PANCREATIC TUMORS. *(Fr.)* Clot, J. P. (no affil). *Vie Med* 51(9): 1243-1252, 1970.

5147 DUODENAL WALL CYSTIC DYSTROPHY ON AN ABERRANT PANCREAS. *(Fr.)* Potet, F. (Hosp. Beaujon, Clichy, France) and N. Duclert. *Arch Franc Mal Appar Dig* 59(4-5):223-238, 1970.

o Diagproc (4903)(4938)(4942)(4948)
o D:S.Intest:Malabs (5076)
o D:Livbil (5181)
o D:Livbil:Cirrh (5278)
o D:Gen (5360)

PANCREAS

Pancreatitis

5148 A STUDY OF ENZYMATIC TOXEMIA IN ACUTE EXPERIMENTAL PANCREATITIS IN THE DOG. MEASURES TAKEN AGAINST DIFFUSION. *(Fr.)* Visset, J. (Fac. Med. Nantes, France), M. F. Le Bodic, J. C. Drianno and G. Baudry. *J Chir* 99(2):157-168, 1970.

5149 PERFORATIONS OF THE PRINCIPAL BILIARY TRACT DURING ACUTE PANCREATITIS. *(Fr.)* Mathis, P. (Ctr. Hosp. U. Reims, France). *Chirurgie* 96(3):231-234, 1970.

5150 PRESENT DAY CONCEPTS OF THE MEDICAL TREATMENT OF ACUTE PANCREATITIS. *(Fr.)* Huguier, M. (Hosp. Beaujon, Clichy, France), J. N. Maillard and P. De Lagausie. *Ann Chir* 23(25-26):1335-1339, 1969.

5151 THE CURRENT STATUS OF THE TREATMENT OF CHRONIC PANCREATITIS. *(Fr.)* Clot, J. P. (no affil) and M. Shaffir. *Vie Med* 51(9):1253-1265, 1970.

5152 SURGICAL TREATMENT OF ACUTE PANCREATITIS: WITH RESPECT TO 30 OBSERVATIONS. *(Fr.)* Huguier, M. (Hosp. Beaujon, Clichy, France) and J. N. Maillard. *Ann Chir* 23(25-26):1331-1334, 1969.

5153 DIAGNOSIS AND PROGNOSIS OF ACUTE PANCREATITIS: WITH RESPECT TO 31 OBSERVATIONS AND A REVIEW OF THE LITERATURE. *(Fr.)* Huguier, M. (Hosp. Beaujon, Clichy, France) and J. N. Maillard. *Ann Chir* 23(25-26):1327-1330, 1969.

5154 PROBLEMS POSED BY ACUTE PANCREATITIS. *(Fr.)* Clot, J. P.(no affil). *Vie Med* 51(9): 1267-1272, 1970.

5155 POSTOPERATIVE NECROTIZING PANCREATITIS FOLLOWING GASTRIC RESECTION. *(Ger.)* Dimakakos, P. B. (Winterthur Canton Hosp., Switzerland). *Ther Umsch* 27(4):214-219, 1970.

5156 PANCREATITIS WITH HYPERAMYLASEMIA AND BISALBUMINEMIA. *(E.)* Stoodley, B. J. (Whittington Hosp., London, England) and D. J. F. Rowe. *Brit Med J* 2(5700):30-31, 1970.

5157 CHRONIC PANCREATITIS IN ASIAN PATIENTS IN SINGAPORE. *(E.)* Fung, W. P. (Fac. Med., U. Singapore), S. E. Aw and O. T. Khoo. *Med J Aust* 57(13):653-656, 1970.

5158 ACUTE SCORPION PANCREATITIS IN TRINIDAD. *(E.)* Bartholomew, C. (Gen. Hosp. Port-of-Spain, Trinidad, West Indies). *Brit Med J* 1(5697): 666-668, 1970.

5159 OSTEOMALACIA, CHRONIC PANCREATITIS, AND THE BLIND LOOP SYNDROME. *(Fr.)* Rambaud, J. C. (no affil), P. Bordier, M. Rautureau, J. M. Krivine, L. Miravet, P. M. Saint-Laurent and M. Baglin. *Presse Med* 78(18):835-839, 1970.

5160 PERIARTERIAL FIBROSIS OF THE CELIAC AXIS, RESPONSIBLE FOR A CLINICAL AND BIOLOGICAL SYNDROME OF RELAPSING PANCREATITIS. *(Fr.)* Cornil, A. (Clin. Saint-Joseph, Liege, Belgium), L. Lewalle and C. Dreze. *Acta Gastroent Belg* 33(33):51-69, 1970.

5161 RARER FORMS OF ACUTE PANCREATITIS. *(Ger.)* Ivanyi, J. (Gyula, Hungary) and J. Tornoczky. *Med Klin* 65(3):115-120, 1970.

5162 CHRONIC PANCREATITIS. *(Ger.)* Kyrle, P. (Rudolfstifung Hosp., Vienna, Austria). *Ther Umsch* 27(4):220-223, 1970.

5163 PROGRESS IN THE DIAGNOSIS AND TREATMENT OF ACUTE PANCREATITIS. *(Ger.)* Thurnheer, W. (Winterthur Canton Hosp., Switzerland). *Ther Umsch* 27(4):210-213, 1970.

o Diagproc (4905)
o D:Pancreas (5139)(5144)

5164 QUANTITATIVE SPECTROPHOTOMETRIC FAT DETERMINATION IN HUMAN LIVER. *(Ger.)* Amend, H. (Path. Inst. St. Hosp. Frankfurt, Germany), W. Reif and H. Zimmerman. *Acta Histochem* 35(2):209-219, 1970.

A technique for the quantitative determination of fatty degeneration in human liver, removed 8 to 24 hr after death, involves the use of 50-micron-thick frozen sections, dehydrated and stained for 60 min in propelene glycol-Sudan IV solution. After differentiation (15 min in 85% propylene glycol), the dye is extracted by acetone and its quantity photometrically determined. The optimal fat-absorption period of the dye was determined at 60 min by 10 duplicate experiments; with increasing dilution maximal transmission was displaced toward shorter wave-lengths. The 500 millimicron wave-length was selected for optimal sensitivity. A standard curve, constructed from various Sudan IV solutions in acetone, was found to follow Beer's Law. Specimens of fatty liver were treated in this way for fat determination with resulting values of 0.16-4.2 percent. Specimens revealed no correlation between the quantity of fat absorbed and the type of fat. Liver tissue that was histologically fat-free was shown to have dye-embedding of about 0.6 μg/mg tissue. Quantitative fat determinations were graded, low fat content as 1.9-2.5 μg/mg, and 5.0-10.0 μg/mg as a high fat content.

5165 A CONTRIBUTION TO THE THERAPY OF LIVER DISEASES: FURTHER OBSERVATIONS IN THE THERAPEUTIC APPLICATION OF LEGALON. *(Ger.)* Schopen, R. D. (St. Hosp. Osnabruck, Germany) and O. K. Lange. *Med Welt* 21(15):691-698, 1970.

Biochemical, histologic and electron microscopic liver biopsy studies were performed on 72 patients with hepatic parenchymal involvement (in alcoholism, diabetes, and poisoning) who were treated with Legalon (6-12 tablets daily). Normalization of blood chemistry was found to agree in most cases with diminution of fatty liver and cholestasis and complete parenchymal regeneration, within 7 treatment weeks; during this period, electron microscope studies revealed the disappearance of mitochondrial vacuolation, dilatation of endoplasmic reticulum, loss of ribosomes and glycogen, and a normal appearance of cell organelles. Biochemical changes observed during therapy include: SGOT (from 33.6 mU/ml before therapy to 11.6 after therapy); SGPT (27.3 to 11.0); BSP at 45 min (13.1 to 5.7 percent retention); cholesterol (256 mg to 225); iron (177 gamma percent to 132). Tolerance to Legalon was good, with no observed side effects.

5166 INHIBITION OF GROWTH OF THE FETAL RAT LIVER AND PLACENTA THROUGH IRRADIATION. *(Ger.)* Mitznegg, P. (Pharm. Inst. U. Erlangen-Nuremberg, Germany), F. Heim, M. Sabel and H. Pauly. *Strahlentherapie* 139(2):251-257, 1970.

The effect of radiation (500 rad whole body ^{60}Co-gamma rays irradiation at 58 rad/min) on fetal liver and placental growth, in Sprague-Dawley female pregnant (16th, 17th, 18th, 20th day of pregnancy) rats, was investigated. In untreated animals, fetal liver and placental weight increased 23- and 1.8-fold, resp., between the 16th and 22nd day of pregnancy (termination of pregnancy). The DNA content and liver nuclear cells of the fetal liver decreased (-55%, -44%, resp.) in the irradiated animal (20th day), the decrease being even greater as a result of earlier (16th day) irradiation (-65%, -62%, resp.). The difference in RNA content, liver protein, liver weight and body weight of the fetus on the 20th day between irradiated animals and controls was slight, but was increased in earlier irradiated animals. In the placenta, no significant changes were obwerved on the 20th day, the highest difference occurring on the 16th day with respect to weight (-18%) and on the 18th day with respect to DNA, RNA and protein (20, 20, 18%, resp.). After partial irradiation (100 rad daily between days 16 and 20) fetal liver DNA (-38%), RNA, protein and cell content (-10 to -26%) decreased. Even after the irradiation-sensitive phase of the organogenesis in the fetus was concluded, inhibitions of the synthesis mechanism could be seen. Radiation damage evidently was reduced when the dose was divided over a longer period of time.

5167 PLASMA LECITHIN-CHOLESTEROL ACYLTRANSFERASE AND ERYTHROCYTE LIPIDS IN LIVER DISEASE. *(E.)* Gjone, E. (U. Hosp., Oslo, Norway) and K. R. Norum. *Acta Med Scand* 187(3):153-161, 1970.

Plasma lecithin-cholesterol acyltransferase activity and erythrocyte cholesterol content were determined in patients with chronic hepatitis, liver cirrhosis or obstructive jaundice. The patients with hepatitis or cirrhosis had lower lecithin-cholesterol acyltransferase activities (% free cholesterol esterified/hr) than normal controls (0.6% compared to 3.0%) and higher erythrocyte cholesterol content (1.44 x 10^{-10} compared to 1.11 x 10^{-10} mg/cell) with a significant correlation in cholesterol concentration in the red cell and the plasma. Patients with obstructive jaundice had extremely low lecithin-cholesterol acyltransferase activities (0.14%) and a marked increase in erythrocyte cholesterol content (1.86 x 10^{-10}).

5168 ACUTE VENO-OCCLUSIVE DISEASE OF THE LIVER. *(E.)* Brooks, S. E. H. (Dept. Path., U. West Indies, Kingston, Jamaica), C. G. Miller, K. McKenzie, J. J. Audretsch and G. Bras. *Arch Path* 89(6):507-520, 1970.

Six case reports (2 boys, 4 girls, 2 to 11-yr-old) are presented of acute veno-occlusive disease of the liver in which liver biopsy material was studied by light and electron microscopy. The sinusoids and subterminal and terminal hepatic veins had marked endothelial damage, accompanied by extravasation of erythrocytes into Disse's space and naked hepatocytes showing a reduction in microvilli. Endothelial damage was seen in all zones of the liver. At the level of the terminal hepatic veins, the closed structure of these vessels, absence of fenestrations, existence of a basement membrane, and the presence of collagen and connective tissue cells in the wall provided resistance to erythrocytes and cellular debris tracking up Disse's space and these factors tended to result in narrowing of the lumen. Parenchymal cell alterations, at the time of the biopsies, included dilation of bile canaliculi, abundant glycogen, and nuclear invaginations.

5169 ULTRASTRUCTURAL CHANGES IN THE GOLGI APPARATUS IN THE LIVER OF RATS WITH TOCOPHEROL DEFICIENCY. *(E.)* Djaczenko, W. (Med. Acad. Wroclaw, Poland), M. Urbanowicz and J. Grabska. *Acta Med Pol* 10(4):415-427, 1970.

Liver parenchyma cells were studied in Wistar rats with experimentally induced tocopherol deficiency. Electron microscopy (ultrathin section technique) in tocopherol-deficient animals (compared to controls) revealed Golgi apparatus in parenchymal cells with extensive changes consisting of decreased number of canals in nearly every apparatus and their transformations. Canals which formed the layers of the Golgi apparatus were elongated, showed a tendency to be curved, and in extreme cases showed formation of ring forms. The opposite poles of canals were dilated and their contents showed moderate electron-microscopic density; focal condensations later appeared in the amorphous masses filling the dilations. Canicular dilations then separated and migrated toward cytoplasm and their volume increased in the cytoplasm, and dense masses differentiated to nucleoids, which changed into typical "dense bodies" (probably lysosomes). Many dense bodies filled the cytoplasmatic zones adjacent to intercellular bile ducts. Dilated canals of endoplasmic reticulum or altered mitochondria (typical of tocopheral deficiency) were observed near Golgi apparatus. Experimental animals also showed large lipid deposits near apparatus in parenchymal cells. Golgi apparatus changes due to tocopherol deficiency are seemingly due to alterations in cytophysiology and not to molecular alterations.

5170 THE RELATIONSHIP BETWEEN GLUCOCORTICOID BINDING AND TYROSINE AMINOTRANSFERASE INDUCTION IN HEPATOMA TISSUE CULTURE CELLS. *(E.)* Baxter, J. D. (Nat. Inst. Arthritis Metab. Dis., Nat. Inst. Hlth., Bethesda, Md.) and G. M. Tomkins. *Proc Nat Acad Sci USA* 65(3):709-715, 1970.

Rat hepatoma tissue culture cells were used to determine the relation between glucocorticoid binding and tyrosine aminotransferase induction. Uptake of ^{3}H-dexamethasone by the culture cells increased with increasing steroid concentration, with components becoming saturated below 5×10^{-8} M, and approximately linear uptake above this concentration. Cells incubated with dexamethasone or cortisol and fractionated into purified nuclear and homogenate supernatant fractions showed that, in the nuclear fraction, the distribution of the steroid between cells and incubation medium decreased markedly with increasing steroid concentration. At 5×10^{-9} M, uptake of ^{3}H-dexamethasone was maximal in about 30 min and at 10^{-6} M within about 10 min. Binding to specific nuclear receptors at 5×10^{-9} M dexamethasone was also maximal within 30 min while the homogenate supernate uptake was maximal within 5 min. After 24 hr, when the tyrosine aminotransferase concentration was high, the steroid bound to the specific receptors was somewhat less than after 30 min and the relative affinity for the specific receptors for dexamethasone and cortisol was similar to their relative effectiveness as inducers. Testosterone, 17α-hydroxyprogesterone, epicortisol and androstenedione, and cortisol and dexamethasone affected cortisol binding to the specific receptors in direct relation to their effect on cortisol induction. After incubation of culture cells with 5×10^{-9} and 10^{-5} M ^{3}H-dexamethasone for 30 min and for 14 hr, no significant amount of metabolites was detected in any of the extracts. From cells incubated with 5×10^{-9} M cortisol, most of the radioactivity from nuclear extracts migrated with cortisol while less than 20% migrated with di- and tetrahydrocortisol.

5171 ONE YEAR SURVIVAL AND FUNCTION AFTER HETEROTOPIC LIVER AUTOTRANSPLANTATION. *(E.)* Tamvakopoulos, S. K. (Div. Biol. Med. Sci., Brown U., Providence, R.I.) and H. T. Randall. *Surg Gynec Obstet* 130(5):859-864, 1970.

In a series of 221 albino Sprague-Dawley rats subjected to a partial hepatectomy, the survival of a graft (a 3 to 5 g liver tissue mass transplanted to the splenic bed and supplied by collateral splenic blood vessels), preservation of liver function, and physiologic response of the animals were observed for 12 months. Of 221 rats operated upon, 187 survived and were killed sequentially during the following 12 months while 36 rats were killed for studies one yr after autotransplantation and histologic studies and glucose-6-phosphatase determinations were performed in hepatic tissue homogenates. Histologic sections of transplants showed survival and maintenance of cell integrity, and gross examination of the liver revealed intact lobular structure and no excessive fibrosis or proliferation of bile ducts. No difference of glucose-6-phosphatase activity or deoxyribonucleic acid and protein contents were demonstrated between the transplant and the liver. After a second partial orthotopic hepatectomy performed one yr after autotransplantation, values of glucose-6-phosphatase, protein and DNA in the autotransplant resembled those of regenerating liver, rather than normal liver. Glucose-6-phosphatase activity (μ/moles P/min $\times 10^{-5}$) ranged from approximately 6.8 to 8 in normal liver, compared with a range of 8 to 9.5 in 24-hr regenerating liver and 8.5 to 10 in transplanted liver. Tissue protein content (g protein/100 g liver tissue) ranged from 15 to 18 g in normal liver, compared with 23 to 25 g in 24-hr regenerating liver, and 24 to 27 g in transplanted liver. DNA content (mg/g liver) was assayed by colorimetric test and had a range of 2.3 to 2.6 in normal liver, compared with 2.9 to 3.2 in 24-hr regenerating liver, and 2.9 to 3.2 in transplanted liver. A metabolic response seemingly occurs in the heterotopically-located hepatocytes similar to that of the normal liver.

5172 CLINICAL STUDY OF A NEW CHOLERETIC SYNTHESIZED FROM AN OLD SPASMOLYTIC. *(Fr.)* Micheletti, J. (no affil). *Clinique* 65(2):168-172, 1970.

The effect of Vedrenan (1-(5',6'-dihydro-2'H-pyranyl-3')-2-phenylethanol) was studied in 36 patients (28 men, 8 women) with various hepato-digestive diseases (viral hepatitis, dyspepsia, cirrhosis or pre-cirrhotic states, and functional colonopathies). In most cases 3 tablets were given daily (in some cases 2 or 4 were given), for 15 days to 3 months depending upon the progress of the illness. In 10 of the 12 cases of viral hepatitis, jaundice was no longer present after 15-20 days of treatment and body weight was increased by 1-4 kg. Cholesterol esters were normalized in all 9 cases tested, transaminases were normalized or improved in 8 of 10 cases tested, and improvement was seen in 6-9 cases with regard to other hepatic tests. In 6 of 8 patients with dyspepsia, all 4 cirrhotics, and all 5 colonopathies, a general improvement followed Vedrenan treatment. Overall success of Vedrenan treatment was calculated as 85.9% and the tolerance was found to be high.

5173 RECENT OBSERVATIONS IN THE PATHOGENESIS OF THROMBOCYTOPENIA IN CIRRHOSIS OF THE LIVER AND THE HYPERSPLENISM SYNDROME.

(Ger.) Schulz, K. (Med. Clin. U. Rostock, Germany), S. Preussner and G. Frick. *Z Ges Inn Med* 25(6):267-271, 1970.

Platelet counts were determined in 280 patients with various liver diseases (cirrhosis, chronic hepatitis, liver metastases, fatty liver, and hypersplenism of various origin) to investigate the pathogenesis of thrombocytopenia in patients with chronic liver disease. Platelets were significantly decreased ($p < 0.1\%$) in patients with liver cirrhosis as well as chronic right heart insufficiency ($p < 5\%$). In patients with liver disease, the thrombocyte count was significantly different ($p < 0.1\%$) in those with (decreased) and those without splenomegaly. Thrombocyte count was increased in the enlarged spleen where an increased disintegration of thrombocytes was often manifested. In isolated cases, the liver seemingly may take over the thrombocytoclastic function of the spleen and the duration of the disease and the severity of the lesion of the liver parenchyma apparently are of importance for the development of the thrombocyte deficit.

5174 EXPERIMENTAL HEPATIC PELIOSIS WITH ALLYL-ALCOHOL: ENZYMATIC AND HISTOLOGIC STUDY.

(Fr.) Barbier, P. (Saint-Antoine Hosp. Paris, France), V. Schwarzmann, N. Berthaux, Y. Hecht and J. Caroli. *Acta Gastroent Belg* 33(1):19-29, 1970.

Enzymatic and histological aspects of the hepatotoxicity of allyl alcohol (0.4 cm^3 of 1.5% solution/100 g, gavage) were studied (at 4, 6, 10, 14, 18, 24, and 48 hr) in fasted female Wistar rats. Enzymes were massively liberated upon intoxication, serum levels of lactic and malic dehydrogenases paralleling in a rise from normal (250 units) to 16,500 units at the 4th hr, 12,550 units at the 10th hr and returning to normal at the 48th hr (a second gavage resulting in only moderate increases). SGPT activity was increased (43 to 663 units) after the 2nd hour, was maximal (73,000 units) 6 to 18 hours after intoxication and returned to normal at the 48th hour. Histologically, early hepatic lesions resembled those of peliosis, but later figures of hepatic necrosis appeared, and still later, necrotic foci underwent sclerous organization. Hepatic alcohol dehydrogenase was not significantly modified by allyl alcohol.

5175 THE PRESENCE OF ALDOLASE C IN RAT HEPATOMA.

(E.) Sugimura, T. (Natl. Cancer Ctr. Res. Inst., Tokyo, Japan), S. Sato and S. Kawabe. *Biochem Biophys Res Commun* 39(4):626-630, 1970.

Yoshida ascites hepatoma cells (AH100B and AH143A) were innoculated i.p. in the rat, and one week later were withdrawn, washed with cold saline, and the activity of aldolase was determined spectrophotometrically at 340 mμ, and by electrophoresis on a cellular acetate membrane. The extract of AH143A cells showed a dominant band of aldolase A, a distinct band corresponding to the A_3C hybrid, and a faint A_3C hybrid band, all previously observed in brain tissue. The elution pattern of the aldolase of AH143A cells on DEAE-cellulose column chromatography revealed a distinct two-peaked pattern which corresponded directly to the aldolase A and the A_3C hybrid activity observed in brain. The term "dis-differentiation" is proposed for the phenomenon involving the switch-off of the gene for aldolase B and the switch-on of the gene for aldolase A during hepato-carcinogenesis.

5176 ULTRASTRUCTURAL CHANGES OF MITOCHONDRIA IN THE RAT LIVER IN EXPERIMENTAL TOCOPHEROL DEFICIENCY.

(E.) Djaczenko, W. (Inst. Immun. Exp. Ther., Polish Acad. Sci., Wroclaw), M. Urbanowicz and J. Grabska. *Acta Med Pol* 11(1):77-95, 1970.

Ultrastructural changes of mitochondria were investigated in livers of Wistar rats with tocopherol deficiency by means of electron microscopy using the ultra-thin section technique. Structural changes occurring in mitochondria of experimental animals were related to degree of involvement of remaining cell components. Experimental animals showed two club-shaped, distended mitochondria connected by a narrow isthmus of various width; mitochondrial cristae or membranes divided the isthmus perpendicularly. Mitochondria in experimental animals exhibited a greater frequency of cell division compared to controls (ratio 7:1). Most frequent type of ultramorphologic change in mitochondria from experimental rats were degrees of organelle enlargement with occasional increased optical density of matrix and development of intramitochondrial system of membranes. In extreme cases, giant mitochondria were formed (up to 5 microns in diameter and oval shaped), in which mitochondrial matrix failed to show reduced optical density and cristae were usually hypertrophic. Organelles with enlarged mass were also observed and formed processes connected with main mass of organelle. All mitochondrial changes were purely volumetric, but did not present symptoms of mitochondrial swelling. Mitochondrial alterations were interpreted as a consequence of lipid peroxidation caused by vitamin E deficiency, in which peroxidation of polyunsaturated fatty acids apparently plays an important role.

5177 GLUCURONYLTRANSFERASE ACTIVITY IN TRANSPLANTABLE RAT HEPATOMAS. *(E.)* Lueders, K. K. (Nat. Cancer Inst., Nat. Inst. Hlth., Bethesda, Md.), H. M. Dyer, E. B. Thompson and E. L. Kuff. *Cancer Res* 30(2):274-279, 1970.

Several transplantable rat hepatomas (Morris 7787, 7316A, 7794A, 3924A, 3683, Reuber H35 and H139, and Novicoff) were assayed for *p*-nitrophenylglucuronyltransferase activity and compared on a tissue protein basis with normal and host liver. When enzyme specific activity was determined from kinetic data on preparations activated with triton X-100, the glucuronyltransferase activity in hepatomas 7794A (300 ± 60), 7787 (68 ± 32), 7316A (53 ± 3) and H35 (40 ± 9) was increased when compared to normal and host liver (9-16) while activities in 3924A (22 ± 3) and 3683 (14 ± 2) hepatoma were comparable to those of host liver. Similar results were obtained when assays were performed on freshly prepared homogenates. In hepatomas, there was an apparent increase in the number of enzymatic sites per unit of microsomal protein as compared with liver as judged by the maximal velocity of reaction measured for microsomes. Glucuronyltransferase activity of rat liver was induced to the level present in the well-differentiated (H35, H139 and 7794A) hepatomas 45 hr after a single dose of 3-methylcholanthrene (5 mg/100 g body wt in 1 ml corn oil, i.p.). β-glucuronidase activity with *p*-nitrophenyl-β-glucuronide as substrate was low for both liver (2.1-5.9) and hematoma preparations (1.0-7.4) when measured under the conditions used to assay glucuronyltransferase activity and it is assumed that it had little or no effect on the enzyme activities observed for hepatomas and livers. The ability of tissue culture cells derived from Morris 7288C hepatoma to conjugate *p*-nitrophenol added to the medium (5 x 10^{-5} M), indicated that glucuronyltransferase as well as uridine diphosphate glucuronic acid synthesis and cell transport are functional in this hepatoma.

5178 SELECTIVE HEPATIC VAGOTOMY: OPERATIVE INDICATIONS. *(Fr.)* Iliescu, G. (Hosp. Alexandru Sabia, Bucarest, Rumania). *Chir Gastroent* 4(1):24-28, 1970.

5179 PREOPERATIVE PREPARATION OF THE JAUNDICED PATIENT: A REVIEW OF CURRENT PRACTICE. *(E.)* Whitcomb, F. F. (Lahey Clin., Boston, Mass.), C. Trey and J. W. Braasch. *Surg Clin N Amer* 50(3): 663-682, 1970.

5180 CARBOHYDRATE CHANGES IN LIVER DISEASE. *(E.)* Sherlock, S. (Roy. Free Hosp. Sch. Med., U. London, England). *Amer J Clin Nutr* 23(4):462-466, 1970.

5181 MALIGNANT TUMORS OF THE LIVER AND PANCREAS AND BOURNEVILLE'S TUBEROUS SCLEROSIS. *(Fr.)* Moretti, G. (Hosp. St. Andre, Bordeaux, France), J. Beylot, A. Broustet, J. C. Boget and J. Y. Calvez. *Arch Franc Mal Appar Dig* 59(4-5):257-262, 1970.

5182 CRIGLER AND NAJJAR'S DISEASE: A CLINICAL, BIOLOGICAL AND ANATOMO-PATHOLOGICAL STUDY OF ONE ADULT CASE. *(Fr.)* Camatte, R. (Hosp. St. Joseph, Marseilles, France), H. Tasso, J. Alliez and H. Sarles. *Arch Franc Mal Appar Dig* 59(4-5):247-256, 1970.

5183 PRIMARY CANCER OF THE LIVER: A DETAILED EXAMINATION. *(E.)* Sankale, M. (Sch. Med. Pharm., U. Senegal, Dakar), A. M. Sow and O. Bao. *Ghana Med J* 9(1):44-57, 1970.

5184 PRIMARY CANCER OF THE LIVER IN THE EUROPEAN ADULT: 90 CASE REPORTS. *(Fr.)* Girard, M. (Red Cross Hosp., Lyon, France), M. Plauchu and H. Chapuy. *J Med Lyon* (1183):773-796, 1970.

5185 THE REGRESSION OF AMYLOIDOSIS: DISAPPEARANCE OF A MASSIVE HEPATIC AMYLOIDOSIS FOLLOWING A NEPHRECTOMY FOR CANCER. *(Fr.)* Paraf, A. (Franco-Turkish Hosp., Bobigny, France), T. Coste, J. Rautureau and J. Texier. *Presse Med* 78(12):547-548, 1970.

5186 CURRENT STATUS OF LIVER TRANSPLANTATION IN MAN. *(Fr.)* Launois, B. (Hosp. Beaujon, Clichy, France) and J. N. Maillard. *Rev Prat* 20(15):2521-2536, 1970.

5187 CONGENITAL FIBROSIS OF THE LIVER AND ITS RELATIONSHIP WITH CACCHI AND RICCI'S DISEASE. *(Fr.)* Darnis, F. (Hosp. Beaujon, Clichy, France), H. Nahum, A. Mosse, J. Barge and C. Moreau. *Presse Med* 78(19):885-888, 1970.

5188 HYPERPHAGIA AND HEPATIC STEATOSIS IN THE GOOSE FOLLOWING A VENTROMEDIAN LESION OF THE HYPOTHALAMIC NUCLEUS. *(Fr.)* Auffray, P. (INRA, Yvelines, France) and J. C. Blum. *C R Acad Sci* 270(19):2362-2365, 1970.

5189 POLYGLOBULISM ASSOCIATED WITH A PRIMARY CANCER OF THE LIVER. *(Fr.)* Ruvidic, R. (Fac. Med., U. Belgrade, Yugoslavia) and M. Ivaneski. *Nouv Rev Franc Hemat* 10(2):261-265, 1970.

5190 INTRA-HEPATIC CHOLESTASIS BY OBSTRUCTION OF THE INTERLOBULAR BILIARY PASSAGES: DURING A GENERALIZED DISEASE OF CYTOMEGALIC INCLUSIONS IN A NEWBORN INFANT. *(Fr.)* Odievre, M. (Hosp. Parrot, Bicetre, France), M. Gautier, F. Nocton and D. Alagille. *Arch Franc Pediat* 27(2):211-216, 1970.

5191 IS THERE A SMALL HEPATIC INSUFFICIENCY? *(Fr.)* Darnis, F. (Hosp. Beaujon, Clichy, France). *Rev Prat* 20(15):2495-2500, 1970.

5192 JAUNDICE DURING PREGNANCY: 5 OBSERVATIONS. *(Fr.)* Larcan, A. (no affil), G. Rauber, M. Calamai and M. C. Heully. *Ann Med Nancy* 9(1): 21-30, 1970.

5193 PRIMARY CARCINOMA OF THE LIVER AND POLYCYTHEMIA. *(Ger.)* Haas, P. (1st Surg. Ctr. Dist. Hosp. Salzburg, Germany) and E. Hell. *Med Klin* 65(18):880-881, 1970.

5194 ALLERGIC CHOLESTATIC HEPATOSIS FOLLOWING GOLD TREATMENT OF CHRONIC POLYARTHRITIS. *(Ger.)* Wiontzek, H. (Geesthacht Hosp., Germany) and J. Schmidt. *Z Rheumaforsch* 29(1-2):46-48, 1970.

5195 THE SYNDROME OF BENIGN INTRAHEPATIC RECURRENT CHOLESTASIS. *(Fr.)* Frexinos, J. (no affil). *Rev Med Toulouse* 6(1 supp.):51-54, 1970.

5196 RADIATION THERAPY OF TUMORS OF THE LIVER. *(E.)* Phillips, R. F. (Mem. Hosp. Cancer Allied Dis.). *Recent Results Cancer Res* 26:272-276, 1970.

5197 LIVER PROTECTION AND THERAPY WITH HEPAMERZ. *(Ger.)* Heynen, U. (Ottobrunn, Germany). *Z Allgemeinmed* 46(2):87-88, 1970.

5198 HEPATIC METASTASES IN CANCER OF THE COLON AND OF THE RECTUM. *(Fr.)* Pettavel, J. (U. Chir. Lausanne, Switzerland) and F. Morgenthaler. *Praxis* 59(12):443-445, 1970.

5199 THERAPEUTIC APPLICATION OF A NEW MEDIATOR OF HEPATO-BILIARY FUNCTIONS. *(Fr.)* Dubarry, J. J. (Hosp. St. Andre, Bordeaux, France). *Gazz Med France* 77(3):600-603, 1970.

5200 GASTRODUODENAL HEMORRHAGES AND SURGICAL DIFFICULTIES IN WILSON'S DISEASE. *(Fr.)* Givarc'h, M. (Hosp. Foch, Paris, France), J. Graveleau, R. Perol and O. Voinchet. *Chirurgie* 96(2): 162-171, 1970.

5201 LUMINAL-THERAPY AND -PROPHYLAXIS OF JAUNDICE OF THE NEWBORN DUE TO RHESUS FACTOR INCOMPATIBILITY. *(Ger.)* Von Brucke, F. T. (Pharm. Inst., Vienna, Austria). *Wien Med Wschr* 120(18-19): 320-321, 1970.

5202 PROPERDINE SYSTEM AND LIVER DISEASES. *(Ger.)* Reissmann, G. (Dist. Hosp. Plauen, Germany). *Z Ges Inn Med* 25(7):297-300, 1970.

5203 EXPERIMENTAL STUDY OF HEPATIC PERIARTERIAL NEURECTOMY: EFFECTS OF INTRAPERITONEAL INJECTION OF DNA. *(Fr.)* Lenart, I. F. (Fac. Med. Ljubljana, Yugoslavia) and V. Simcic. *Lyon Chir* 66(1):42-44, 1970.

5204 HEPATIC METASTASES. CLINIC—BIOLOGY—LAPAROSCOPY. *(Fr.)* Hofstetter, J. R. (Polyclin. Med. U. Lausanne, Switzerland). *Praxis* 59(12):437-439, 1970.

5205 BILIRUBIN-^{14}C TURNOVER STUDIES IN NORMAL AND MUTANT SOUTHDOWN SHEEP WITH CONGENITAL HYPERBILIRUBINEMIA. *(E.)* Mia, A. S. (Agric. U., Mymensingh, East Pakistan), R. R. Gronwall and C. E. Cornelius. *Proc Soc Exp Biol Med* 133(3):955-959, 1970.

5206 LIVER DISEASE IN SJOEGREN'S SYNDROME AND RHEUMATOID ARTHRITIS. *(E.)* Whaley, K. (Western Inf., Glasgow, Scotland), J. Williamson, W. C. Dick, R. B. Goudie, G. Nuki and W. W. Buchanan. *Lancet* 1(7652):861-863, 1970.

5207 SIMULTANEOUS FIBRINOGEN AND PLATELET SURVIVAL WITH [^{75}Se] SELENOMETHIONINE IN MAN: STUDIES IN DISEASES WITH NORMAL COAGULATION AND IN HEPATOCELLULAR DISEASE WITH ABNORMAL COAGULATION. *(E.)* Brodsky, I. (Hahnemann Med. Coll., Philadelphia, Pa.), N. H. Siegel, S. B. Kahn, E. M. Ross and G. Petkov. *Brit J Haemat* 18(3):341-355, 1970.

5208 OPERATION FOR SOLITARY LIVER ABSCESS. *(E.)* Patterson, H. C. (U. North Carolina Med. Sch., Chapel Hill). *Amer J Surg* 119(3):326-329, 1970.

5209 JAUNDICE IN PREGNANCY: A TEN-YEAR STUDY AND REVIEW. *(E.)* Hurwitz, M. B. (Johannesburg, Union of South Africa). *S Afr Med J* 44(8):219-222, 1970.

5210 JAUNDICE IN THE GERIATRIC PATIENT. *(E.)* O'Brien, G. F. (Mercy Hosp. Med. Ctr., Chicago, Ill.) and C. V. Tan. *Geriatrics* 25(5):114-127, 1970.

5211 D-FRUCTOSE INTERFERENCE WITH LIVER METABOLISM. *(E.)* Kekomaki, M. (Helsinki, Finland), K. O. Raivio and P. H. Maenpaa. *Acta Anaesth Scand* (supp 37):114-118, 1970.

5212 COMPARATIVE INVESTIGATIONS OF THE ELECTROPHORETIC CONTENT OF SERUM ALBUMIN IN VARIOUS LIVER DISEASES IN A SURVEY OF 913 PATIENTS. *(Ger.)* Fuchs, T. (State Hosp. Mannheim, Germany) and H. Immich. *Med Welt* 21(14):599-610, 1970.

5213 AN ATTEMPT TO TREAT HEPATIC COMA BY MEANS OF AN AUXILIARY HETEROGRAFT. *(Fr.)* Marion, P. (Hosp. Cardiovasc. Pneumol., Paris, France), A. Bertoye, P. Mikaeloff and J. F. Bolot. *Chirurgie* 96(2):152-161, 1970.

5214 INTRAABDOMINAL BLEEDING IN ANGIOPLASTIC SARCOMA OF THE LIVER FOLLOWING ISOTOPE DELAYED DAMAGE (THOROTRAST). *(Ger.)* Hofbauer, K. (Steglitz Clin., Free U. Berlin, Germany) and R. Haring. *Med Welt* 21(13):569-572, 1970.

5215 EVIDENCE AND LOCALIZATION OF PORPHYRINS IN RENAL TISSUE BIOPSIES IN CHRONIC HEPATIC PORPHYRIA (*PORPHYRIA CUTANEA TARDA*) BY MEANS OF FLUORESCENCE MICROSCOPY. *(Ger.)* Czitober, H. (I. Med. Clin. U. Vienna, Austria), H. Denk and H. Schnack. *Klin Wschr* 48(1):59-60, 1970.

5216 THE TREATMENT OF HEPATIC COMA BY HETEROLOGOUS PERFUSION OF THE LIVER. 3 CASES. *(Fr.)* Chevrel, J. P. (Hosp. St. Antoine, Paris, France), P. Opolon, M. Thomas, M. Smadja, A. Apoil, P. Hadchouel and J. Caroli. *Rev Medicochir Mal Foie* 45(1):65-67, 1970.

5217 ANATOMO-CLINICAL STUDY OF 72 CASES OF HEPATIC COMA. COMPARISON WITH BIOLOGICAL AND ELECTROENCEPHALOGRAPHIC RESULTS. *(Fr.)* Mahoudeau, D. (Hosp. Beaujon, Clichy, France), J. Dubrisay, J. F. Foncin and P. Pouillart. *J Med Chir Prat* 141(4):147-159, 1970.

5218 ATRESIA OF THE INTRAHEPATIC AND PERMEABLE EXTRAHEPATIC DUCTS IN THE CHILD. *(Fr.)* Alagille, D. (Hosp. Parrot, Bicetre, France) and N. Thomassin. *Rev Medicochir Mal Foie* 93-104, 1970.

5219 CHRONIC IDIOPATHIC JAUNDICE IN PAPUA AND NEW GUINEA: A REPORT OF NINE PATIENTS WITH DUBIN-JOHNSON'S OR ROTOR'S SYNDROME. *(E.)* Vaughn, J. P. (U. Col., Dar-es-Salaam, Tanzania), A. T. Marubbio, I. Maddocks and R. A. Cooke. *Trans Roy Soc Med Hyg* 64(2):287-292, 1970.

5220 THE PROS AND CONS OF LUMINAL TREATMENT OF HYPERBILIRUBINEMIA. *(Ger.)* Luders, D. (U. Clin. Polyclin. Gottingen, Germany). *Mschr Kinderheilk* 118(3):94-102, 1970.

- P:Morph (4746)
- P:Gen (4873)
- Diagproc (4887)(4889)(4891)(4892)(4895)(4896)(4904)(4907)(4908)(4916)(4919)(4922)(4933)(4934)(4936)(4937)(4946)(4951)(4952)
- D:S.Intest:Malabs (5071)
- D:Livbil:A.Nonv.Hep (5240)
- D:Livbil:A.V.Hep (5256)(5304)
- D:Gen (5376)(5395)
- D:Gen:Parasit (5397)(5399)(5400)(5401)(5402)

LIVER AND BILIARY TRACT

Acute Nonviral Hepatitis and Hepatic Injury

5221 HEPATIC MITOCHONDRIAL FRAGILITY AND PERMEABILITY: EFFECT OF ETHANOL AND CHOLINE DEFICIENCY. *(E.)* French, S. W. (Harbor Gwn. Hosp., Torrance, Calif.) and T. Todoroff. *Arch Path* 89(4):329-336, 1970.

Mitochondrial damage induced by ethanol ingestion and choline deficiency (hypolipotropic diet) and the effect of a choline-rich diet on the ethanol-induced mitochondrial injury were measured in male Wistar rats. The combination of ethanol and a choline-deficient diet caused an increase in liver mitochondrial permeability indicated by a significant increase in succinic dehydrogenase activity. Rats fed a combination of ethanol and a choline-deficient diet or ethanol plus a choline-supplemented diet developed an increase in mitochondrial fragility when compared to control groups. Choline deficiency alone increased succinic dehydrogenase activity and slightly increased mitochondrial fragility. Rats fed ethanol showed a significant increase in succinic dehydrogenase activity which indicated that mitochondrial fragility was increased; choline supplement tended to lessen this increase in fragility but not to a significant degree. There was an increase in succinic dehydrogenase activity produced by a diet marginal in choline, when compared with the values from control rats receiving choline-supplemented diets. The mitochondrial fragility induced by ethanol seemingly is not due to an increase in the requirement for choline.

5222 TURNOVER OF HEPATIC COLLAGEN IN REVERSIBLE AND IRREVERSIBLE FIBROSIS. *(E.)* Hutterer, F. (Mt. Sinai Sch. Med., City U. New York, N. Y.), M. Eisenstadt and E. Rubin. *Experientia* 26(3):244-245, 1970.

Liver collagen and glycine-C^{14} (10 μC/100 g, i.p.) uptake were determined in rats with carbon tetrachloride-induced hepatic fibrosis. Hepatic fibrosis was reversible when carbon tetrachloride treatment was stopped after 60 days (Group 1) and irreversible when stopped after 140 days (Group 2); glycine-C^{14} uptake was higher in Group 1 (30,000 cpm) than in Group 2 (6000 cpm). The suggested multicompartmented system (reversible and irreversible fibrosis) was computer analyzed using the iterative method of Sheppard and the half life of the 2 insoluble collagen components in the reversible phase was determined as 3 days and 37 days, resp., while in the irreversible phase it was 7 days and 301 days, resp. The longer half life of the second component of the irreversible phase suggests that a decreased rate of collagen catabolism rather than increased synthesis distinguishes the irreversible phase from the reversible phase of fibrosis.

5223 MULTIPLE HALOTHANE EXPOSURE AND HEPATIC BROMSULPHTHALEIN CLEARANCE. *(E.)* Biebuyck, J. F. (Radcliffe Inf., Oxford, England), S. J. Saunders, G. G. Harrison and A. B. Bull. *Brit Med J* 1(5697):668-671, 1970.

Hepatic BSP clearance was studied in isolated perfused livers and liver homogenates from Wistar and Sprague-Dawley rats previously exposed to halothane. In isolated perfusion studies, a significant increase in BSP retention occurred at 1 week (18.0 ± 3%) and 3 weeks (29.0 ± 6%) following 3 halothane exposures (control 5.0 ± 3%). There was no significant difference in BSP retention in animals receiving a single halothane exposure (6 ± 3%) followed by a 3-week interval compared to controls. Animals receiving 3 halothane exposures followed by a 6-week interval and 3 further halothane exposures showed significant BSP retention (1 week, 18 ± 2% and 3 weeks, 21 ± 5%, control 5 ± 3%); results did not differ significantly from animals with 3 halothane exposures. Diethyl ether exposure did not produce significant BSP changes. In liver homogenate studies in similarly pretreated animals, there was a significant decrease in BSP-glutathione conjugating enzymes at 2 and 3 weeks following multiple halothane exposure (1.49 ± 0.28 and 1.68 ± 0.4 mg BSP-conjugated/g. liver wet weight/5 minutes, resp.; control 2.10 ± 0.62). Present data shows an apparent delayed hepatic effect of multiple halothane exposure. The mechanism supporting increased BSP retention suggests that removal of BSP from plasma is seemingly dependent on simultaneous operation of 2 processes: a) uptake into hepatic storage compartment and b) excretion into bile.

5224 ALCOHOLIC LIVER DAMAGE. *(Ger.)* Von Olderhausen, H. F. (Med. U. Clin. Tubingen, Germany). *Ther Woche* 20(2):58-72, 1970.

5225 HEPATIC AND RENAL GLUCURONYLTRANSFERASE ACTIVITY IN THE RAT FOLLOWING EXPERIMENTAL INTOXICATION WITH URANYL NITRATE. *(Fr.)* Bastide, J. (Fac. Med. Pharm., Clermont-Ferrand, France), J. B. Boyer and P. Bastide. *C R Soc Biol* 163(11):2324-2327, 1969.

5226 EXPERIMENTAL INVESTIGATION OF THE TOXIC EFFECTS OF ALCOHOLIC CONGENERS. *(Ger.)* Gibel, W. (Robert Rossle Clin., Deutsch Acad. Sci., Berlin), K. Lohs, K. Schremmer and G. P. Wilder. *Deutsch Gesundh* 25(13):573-579, 1970.

5227 HYPERTRIGLYCERIDEMIAS RESPONSIVE TO ALCOHOL. *(Fr.)* Debry, G. (Fac. Med. Nancy, France), F. Thiebault, D. Guisard, J. P. Gonand and P. Drouin. *Vie Med* 51(14):2095-2100, 1970.

5228 COMPARATIVE ANIMAL STUDIES ON THE EFFECTS OF RUTIN PREPARATIONS ON THE FORMATION OF CONCREMENTS. *(Ger.)* Pfeifer, K. (St. Hosp. Oskar Ziethen., Berlin, Germany), W. H. Mehnert and W. Hulsmann. *Deutsch Gesundh* 25(9):386-391, 1970.

5229 HEPATOBILIARY EFFECTS OF THE RIFAMPICINE-PROTHIONAMID COMBINATION: I. HISTOLOGICAL STUDY IN THE RAT. *(Fr.)* Hugues, C. (Inst. Ther. U. Paris, France), C. Marche and J. Marche. *Therapie* 25(1):131-136, 1970.

5230 HEPATOBILIARY EFFECTS OF THE RIFAMPICINE-ISONIAZID COMBINATION: II. HISTOLOGICAL STUDY IN THE TUBERCULOUS MOUSE. *(Fr.)* Balea, T. (Inst. Ther. U. Paris, France), C. Marche and J. Marche. *Therapie* 25(1):125-130, 1970.

5231 PROLONGED INGESTION OF SMALL DOSES OF CHLORETHANOL BY RATS. *(Fr.)* Manchon, P. (no affil), A. Buquet, R. Albrecht and S. Atteba. *Aliment Vie* 57(10-11-12):269-273, 1969.

5232 PHALLOIDIEN HEPATITIS. *(Fr.)* Sicot, C. (Hosp. Beaujon, Clichy, France), C. Bismuth, F. Pebay-Peyroula, J. P. Frejaville and B. Rueff. *Rev Prat* 20(15):2485-2492, 1970.

5233 INFLUENCE OF THE RETICULOENDOTHELIAL SYSTEM ON THE METABOLISM AND ABSORPTION OF STEATOGENIC ALCOHOLS IN THE RAT. *(Fr.)* Gaillard, D. (Inst. Physiol., Toulouse, France), S. Mitjavila and R. Derache. *Path Biol* 18(7-8):399-402, 1970.

5234 RETROGRESSION TENDENCIES IN THE ALCOHOLIC FATTY LIVER WITH RESPECT TO DIET. CHANGES IN THE FAT DISTRIBUTION OF THE DIET. *(Ger.)* Irsigler, K. (1st Med. U., Vienna, Austria), K. Kryspin-Exner and W. Mildschuh. *Acta Hepatosplen* 17(2):103-110, 1970.

5235 EFFECT OF THE CONGENERS IN ARAQ ON THE INCIDENCE OF ALCOHOLIC FATTY LIVER IN THE RAT. *(E.)* Dajani, R. M. (Sch. Pharm., American U. Beirut, Lebanon), L. Ghandour-Mnaymneh and F. Saadeh. *Quart J Stud Alcohol* 5(supp. 5):34-49, 1970.

5236 QUANTITATIVE RELATIONSHIP BETWEEN AMOUNT OF DIETARY FAT AND SEVERITY OF ALCOHOLIC FATTY LIVER. *(E.)* Lieber, C. S. (Bronx VA Hosp., New York) and L. M. DeCarli. *Amer J Clin Nutr* 23(4): 474-478, 1970.

5237 ACUTE GRANULOMATOUS HEPATITIS DUE TO HISTOPLASMOSIS. *(E.)* Lanza, F. L. (U. Texas M.D. Anderson Hosp., Tumor Inst., Houston) R. S. Nelson and B. N. Somayaji. *Gastroenterology* 58(3): 392-396, 1970.

5238 MECHANISM OF HEPATIC DYSFUNCTION FOLLOWING SHOCK AND TRAUMA. *(E.)* Blaisdell, F. W. (San Francisco Gen. Hosp., Cal.), G. Nunes and W. Margaretten. *Arch Surg* 100(5):546-556, 1970.

5239 A METHOD FOR THE ASSESSMENT OF THE CHRONIC HEPATOTOXICITY OF PYRROLIZIDINE ALKALOIDS. *(E.)* Jago, M. V. (Div. Anim. Hlth., C.S.I.R.O., Parkville, Victoria, Australia). *Aust J Exp Biol Med Sci* 48(1):93-103, 1970.

5240 LIVER NECROSIS AFTER HALOTHANE ANESTHESIA. *(Nor.)* Bog-Jensen, R. (Ringkoving, Denmark). *Ugeskr Laeg* 132(22):1052-1054, 1970.

5241 TOXIC EFFECT OF BILIRUBIN ON HEPATIC MITOCHONDRIAL FUNCTION. *(Sp.)* Noir, B. A. (Fac. Med., U. Buenos Aires, Argentina), A. A. Boveris and A. O. M. Stoppani. *Medicina* 30(1):91-96, 1970.

5242 VITAMINS AND LIVER INJURY. *(E.)* Leevy, C. M. (New Jersey Coll. Med., Newark, N. J.), A. Thompson and H. Baker. *Amer J Clin Nutr* 23(4):493-499, 1970.

5243 A UNIQUE CASE OF PELIOSIS HEPATITIS. *(E.)* Weir, M. R. (Letterman Gen. Hosp., San Francisco, Cal.), J. Decherd and G. Beathard. *Texas Rep Biol Med* 27(4):1105-1112, 1969.

5244 LIVER NECROSIS AFTER REPEATED FLUOTHANE ANESTHESIA: CAUSE OR COINCIDENCE? *(E.)* Hansen, V. (Reykjavik Hosp., Iceland). *Acta Anaesth Scand* 14(1):1-3, 1970.

5245 A CASE OF ACUTE FATTY LIVER DURING PREGNANCY. *(E.)* Wood, E. E. (Penzance, Cornwall, England). *J Obstet Gynec Brit Comm* 77(4):337-342, 1970.

5246 EFFECTS OF ETHANOL ON THE LIVER. *(E.)* Scheig, R. (Yale U. Sch. Med., New Haven, Conn.). *Amer J Clin Nutr* 23(4):467-473, 1970.

5247 SPONTANEOUS RUPTURE OF THE LIVER. *(Fr.)* Rochemont, S. (Cap Haitien Hosp., Haiti). *Int Surg* 53(5):377-382, 1970.

5248 HEPATOTOXICITY. *(Dut.)* De Groote, J. (Acad. Hosp. St. Rafael, Louvain, Belgium). *T Geneesk* 26(6):304-315, 1970.

5249 STUDIES ON HYPOGLYCIN TOXICITY IN RATS. *(E.)* Brooks, S. E. H. (Dept. Path., U. West Indies, Kingston, Jamaica) and J. J. Audretsch. *Amer J Path* 59(1):161-167, 1970.

5250 PROTEIN DEFICIENCY AND LIVER INJURY. *(E.)* Porta, E. A. (Hosp. Sick Children., Toronto, Ontario, Canada) and W. S. Hartroft. *Amer J Clin Nutr* 23(4):447-461, 1970.

o P:Secr:Hepatobil (4819)
o Diagproc (4950)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

5251 THE ROLE OF THE LIVER IN ^{59}Fe-KINETICS. *(Ger.)* Montz, R. (Radiol. U. Clin., Hamburg, Germany). *Nuclearmedizin* 9(1):62-69, 1970.

Radioiron distribution in the liver of 300 patients with liver disorders, receiving 7 mC ^{59}Fe, was determined by a standard Human-Phantom-Remcal apparatus. No ^{59}Fe accumulation in the liver was found in 147 of 200 cases examined, and in 20 of these cases (examined by a liver biopsy) the iron activity at 0 hr was 4100 Ipm and at 24 hr was 2400 Ipm. Compared with the scan (100% in liver = 35,500 Ipm) it appears that a 7-8% (24 hr) and a 4% (0 hr) iron accumulation may be expected normally after radioiron administration. Surface activity in different grades of iron accumulation in liver and total reticulohistiocyte system in patients with hemotological disease are as high as 75% and 100%, resp. Thirty patients were within 0-10% in both examinations, which were confirmed by biopsy.

5252 FOLLOW-UP STUDIES IN INFECTIOUS HEPATITIS. *(Ger.)* Fleischmann, M. (Red Cross Hosp., Gotha, Germany). *Med Klin* 65(25):1206-1211, 1970.

Patients (1026) who had suffered with infectious hepatitis were surveyed for residual liver damage after 5 yr. Of the patients that were surveyed, 579 were examined (412 children under 14 yr of age; 167 adults of various age groups). Clinical observations included the examination of the liver, spleen and skin (particular attention was paid to patients who had been ill for over 6 wk); laboratory tests included sedimentation rate, thymol turbidity, electrophoresis, bilirubin and transaminase (a BSP was performed when abnormal test results were obtained; some radiological examinations were performed). Recurrent episodes were treated in 123 ambulant patients; 125 patients had had a delayed convalescence and 79 patients showed some liver function disorders from the laboratory tests (45 biopsies were taken). Typical signs of cholecystopathy were found in 14 patients (9 with cholelithiasis, 5 with dyskinesia of the bile duct). Of the patients with chronic progressive hepatitis, 4 were treated as ambulant patients and 3 were hospitalized.

5253 IMMUNOLOGIC DISTINCTION BETWEEN INFECTIOUS AND SERUM HEPATITIS. *(E.)* Prince, A. M. (New York Blood Ctr., New York), R. L. Hargrove, W. Szmuness, C. E. Cherubin, V. J. Fontana and G. H. Jeffries. *New Eng J Med* 282(12):987-991, 1970.

Sera from patients with acute viral hepatitis were tested for presence of serum-hepatitis (SH) antigen by immunodiffusion to determine whether there is an immunologic distinction between infectious and serum hepatitis. Serial serum specimens from 4 patients with short-incubation MS-1 infection (Willowbrook) were negative for SH antigen while the SH antigen was identified in all 8 cases of long-incubation MS-2 infection (Willowbrook). None of 19 sporadic cases in children under age 14 and one of 74 cases of epidemic hepatitis showed presence of detectable antigen. Seventy-six of 116 cases (66%) previously exposed to contaminated needles, 25 of 43 cases (58%) of post-transfusion hepatitis and 71 of 129 cases (55%) of viral hepatitis of unknown etiology were positive for SH antigen. There was no antigen deected in 57 patients with other acute liver disases. SH antigen and not infectious hepatitis virus seemingly is the major cause of endemic hepaitis in urban adults.

5254 BILE ACIDS AND STEROID SULFATES IN SERUM OF PATIENTS WITH INFECTIOUS HEPATITIS. *(E.)* Cronholm, T. (Karolinska Inst., Stockholm, Sweden), L. Norman and J. Sjovall. *Scand J Gastroent* 5(4):297-303, 1970.

he concentrations of major serum bile acids and teroid sulfates were determined by gas chromatography and mass spectrometry in 8 patients during the course of infectious hepatitis. Total bile acid concentration (mg/100 ml) was highly elevated (approximately 10) compared to the normal value (0 to 0.2) and the bile acid/bilirubin ratio was high (1.2 to 0.5) during the icteric phase but dropped (0.2 to 0.01) after recovery. Deoxycholic acid was not detectable during the icteric phase and the chenodeoxycholic/cholic acid ratio was below 1. The steroid sulfates did not change as drastically with the disulfates of 5α-androstane-3α,17β-diol, 5α-androstane-3β,17β-diol,5-androstane-3β,17β-diol and androsterone sulfate dropping slightly during convalescence and dehydroepiandrosterone rising in 5 out of 7 patients.

5255 THE EFFECT OF GLUCOCORTICOID TREATMENT ON PROTEIN SYNTHESIS IN LIVER BIOPSIES OF PATIENTS WITH ACUTE HEPATITIS. *(Ger.)* Richter, E. (Med. Clin., Policlin., Justus Liebig U., Gieben, Germany), S. Rotter, B. Leinweber, H. Liehr, D. Brachtel and H. A. Kuhn. *Acta Hepatosplen* 17(2):84-89, 1970.

Effects of glucocorticoid therapy on hepatic protein synthesis in acute hepatitis was investigated in 25 patients (12 treated with prednisolone, 13 without) kept at bedrest and given Laevoral with a special liver diet. Prednisolone was administered 3 times daily (50, 40, 30, and 25 mg p.o. during the first 10-12 days). Biopsies were taken 2 or 3 days after admission, and again after 10-12 days. In patients with acute hepatitis, protein synthesis (dpm/mg wet weight, measured by ^{14}C labeled glycine and aspartic acid incorporation) was 415 (compared to 87 in normal subjects). In patients not treated with prednisolone, protein synthesis was 415 and 439 (first and second biopsies, resp.) and in patients treated with prednisolone, 415 and 141 resp. Values for bilirubin (mg%), GOT and GPT (mU/ml) among the different groups were, resp.: untreated patients (1st biopsy) 8.2, 451, 472; (2nd biopsy) 4.5, 105 and 112; treated patients (1st biopsy) the same as those for untreated patients; (2nd biopsy) 1.9, 49, 121. In the most acute phases of hepatitis, comparison between prednisolone-treated and untreated patients revealed lower protein synthesis (370 vs. 464), demonstrating that glucocorticoid treatment significantly improved the abnormally high protein synthesis in acute hepatitis.

5256 CONJUGATED BILE ACIDS IN THE SERUM DURING SEVERE JAUNDICE. *(Fr.)* Rautureau, M. (Hosp. St. Antoine, Paris, France), B. Chevrel and J. Caroli. *Rev Medicochir Mal Foie* 45(1):23-32, 1970.

Biliary acid conjugation was studied in 19 cases of acute viral hepatic necrosis and 16 normal subjects by thin layer chromatography. Biliary acids were always glycine- and taurine-conjugated and the G/T ratio was low (< 2.5) in 16 cases of hepatitis. This ratio could not be determined in normal subjects because of the low concentration of biliary acids. In all cases of acute jaundice, both trihydroxy- and dihydroxycholanic acid are increased (especially the latter) with the TriOH/DiOH ratio being less than 0.8. The mechanisms of conjugation synthesis seemingly persist despite hepatic degeneration and high concentrations of conjugated bile acids parallel hepatic degeneration.

5257 NUCLEAR CELL ANTIGEN IN VIRAL INFECTION. A CONTRIBUTION TO HEPATITIS VIROLOGY. *(Ger.)* Berthold, H. (Med. U. Clin. Hamburg, Germany) and T. Luthardt. *Zbl Bakteriol* 212(2-4):419-424, 1970.

5258 USUALLY FATAL, SEVERE ACUTE VIRAL HEPATITIS. ULTRASTRUCTURAL STUDY WITH RESPECT TO 12 CASES. *(Fr.)* Scotto, J. (Hosp. St. Antoine, Paris, France), H. Stralin and J. Caroli. *Rev Medicochir Mal Foie* 45(1):43-59, 1970.

5259 THE APPLICATION OF AN OPTICAL METHOD FOR HISTOLOGICAL STUDIES IN SEVERE ACUTE HEPATITIS: PROGNOSTIC SPECULATIONS. *(Fr.)* Scotto, J. (Hosp. St. Antoine, Paris, France), G. Theodoropoulos and A. Lageron. *Rev Medicochir Mal Foie* 45(1):61-64, 1970.

5260 VIRAL HEPATITIS AND HEMOGLOBIN A2. *(Fr.)* Bereni, J. (no affil), C. Chastel, A. Bezon and H. Philibert. *Presse Med* 78(17):793-794, 1970.

5261 LUPOID HEPATITIS. *(Fr.)* Sudre, Y. (no affil), F. Beaugendre and P. De Giacomini. *Bordeaux Med* 3(4):949-960, 1970.

5262 HIPPIE-HEPATITIS. *(Ger.)* Stille, W. (Ctr. Int. Med., U. Frankfurt, Main, Germany), K. H. Goggel and B. Kunkel. *Med Klin* 65(20):993-995, 1970.

5263 ACTUAL PATHOLOGIC AND EVOLVING ASPECTS OF VIRAL HEPATITIS. *(Fr.)* Orcel, L. (Paris, France), A. Smadja, A. Grynblat and J. Scotto. *Ann Anat Path* 15(1):61-104, 1970.

5264 EPITHELIAL REGENERATION IN PROLONGED VIRAL HEPATITIS. *(Fr.)* Laumonier, R. (Ctr. Hosp. U. Rouen, France), J. Metayer, C. Marche and A. Gaudray. *Ann Anat Path* 15(1):115-128, 1970.

5265 THE COURSE AND SEQUELS OF VIRAL HEPATITIS. *(Ger.)* Schneiderbaur, A. (Hosp. St. Vienna, Austria) and L. Konig. *Wien Med Wschr* 120(11):184-190, 1970.

5266 PANCYTOPENIA FOLLOWING ACUTE HEPATITIS. *(Ger.)* Hartwich, G. (Med. Clin. Polyclin., U. Erlangen-Nuremberg, Germany). *Fortschr Med* 88(5):175-177, 1970.

5267 HISTOCHEMICAL STUDY OF 12 ACUTE LIVER ATROPHIES. *(Fr.)* Lageron, A. (Hosp. St. Antoine, Paris, France) and J. Caroli. *Rev Medicochir Mal Foie* 45(1):33-42, 1970.

5268 VIRAL HEPATITIS: REVISED CONCEPTS AS A RESULT OF THE STUDY OF AUSTRALIA ANTIGEN. *(E.)* Sutnick, A. I. (U. Pennsylvania Sch. Med., Philadelphia), W. T. London, I. Millman, V. E. Coyne and B. S. Blumberg. *Med Clin N Amer* 54(3):805-817, 1970.

5269 DIABETES AFTER VIRAL HEPATITIS: 20 CASES IN 4,456 PATIENTS. *(Fr.)* Laverdant, C. (Paris, France) and M. Fromantin. *Ann Gastroent Hepat Hotel Dieu* 6(2):101-109, 1970.

5270 HISTORY OF THE "AUSTRALIA" ANTIGEN. *(Fr.)* Fauvert, R. (no affil). *Rev Prat* 20(15):2479-2483, 1970.

5271 IMMUNO-SEROLOGICAL STUDIES ON SO-CALLED "SASHIMA (INFECTIOUS) HEPATITIS": ITS IMMUNOGLOBULIN RESPONSE AND HIM REACTIVITY. *(Jap.)* Yoshikawa, I. (Nippon Med. Sch., Japan), K. Hannya, H. Yunoki, H. Noriki and Y. Ichikawa. *J Jap Ass Infect Dis* 43(11):334-342, 1970.

5272 HEPATITIS ASSOCIATED (AUSTRALIA/SH) ANTIGEN. *(Nor.)* Reinicke, V. (Bispebjerg Hosp., Copenhagen, Denmark). *Nord Med* 83(20):629-630, 1970.

5273 INTESTINAL CONTENTS IN PATIENTS WITH VIRAL HEPATITIS AFTER A LIPID MEAL. *(E.)* Modai, M. (Tel-Hashomer Govt. Hosp., Israel) and E. Theodor. *Gastroenterology* 58(3):378-387, 1970.

o Diagproc (4892)(4932)(4945)
o D:Livbil (5172)(5212)

LIVER AND BILIARY TRACT

Chronic Hepatitis

5274 THE IMMUNOSUPPRESSIVE TREATMENT OF CHRONIC LIVER DISEASES. *(Ger.)* Wallnofer, H. (A. O. Hosp. Vocklabruck, Austria). *Z Ther* 8(1):5-33, 1970.

Immunosuppressive treatment of chronic liver disease with azathioprin (Imuran) over a period of 4 months to 2 years is reported in 54 cases (19 cirrhotic, 20 with chronic aggressive hepatitis, 6 with persistent acute and subacute forms, 5 with chronic persistent protracted hepatitis, and 4 with lupoid hepatitis). Diagnosis was by liver biopsy, laparoscopy or both. Biopsy results of treatment (150-200 mg followed by 50 mg daily maintenance doses) were divided into three groups: normalization (7.4%), improvement (31.5%), and unchanged (61.1%). Liver function tests followed simultaneously in the three groups indicated improvement in the following percentages: Takatara reaction, 13%, 37%, and 50%; thymol turbidity, 16.7%, 50.0% and 33.3%; SGOT, 37%, 46.3% and 16.7%; SGPT, 38.9%, 42.6%, and 18.5%; LDH, 34.1%, 31.5%, and 44.4%; and SDH, 25.8%, 31.5%, and 42.6%. Successful treatment for the individual groups was 20-30% in cirrhosis, 50% in chronic aggressive hepatitis, and 60-70% in acute and subacute persistent hepatitis. Among the side effects, occasional increases in mitochondrial enzymes (despite a decrease in transaminases) was a sign for cessation of medication. Two hepatic comas developed in the cirrhosis group (one with fatal outcome) and occasional gastrointestinal disturbances persisted despite reduction in dose and treatment frequency.

5275 THE LIVER IN MULTIPLE MYELOMA. *(Fr.)* Lichtenstein, H. (no affil). *Progres Med* 98(5-6):81-84, 1970.

5276 IMMUNOPATHOLOGICAL PHENOMENA IN CHRONIC HEPATITIS. *(Ger.)* Schumacher, K. (Med. U. Klin. Cologne, Germany). *Internist* 11(1):11-16, 1970.

o D:S.Intest:Malabs (5074)
o D:Livbil (5167)(5173)(5197)(5212)
o D:Livbil:Cirrh (5279)
o D:Livbil:Gallb (5302)

LIVER AND BILIARY TRACT

Cirrhosis

5277 EFFECT OF 3-METHYLCHOLANTHRENE ON EXPERIMENTALLY INDUCED CIRRHOSIS: A STUDY USING ATS OF VARYING AGES. *(E.)* Reuber, M. D. (Natl. nst. Cancer, Natl. Inst. Hlth., Bethesda, Md), S. rollman and E. L. Glover. *Arch Path* 89(6):531-536, 970.

ale and female Buffalo rats of 5, 12, 24, and 52 eeks of age were used to study the effect of 3-ethylcholanthrene on CCl$_4$-induced cirrhosis. Animals iven 3-methylcholanthrene and control animals did not ave any hepatic lesions. Animals given both CCl$_4$ and -methylcholanthrene lost weight, whereas those given Cl$_4$ gained weight. Male and female rats of all ages urvived for an average of 9.2 weeks and 11.0 weeks, esp. There was a striking increase in the severity f the cirrhosis in male rats of all ages given CCl$_4$ nd 3-methylcholanthrene as compared to those given nly CCl$_4$. The incidence of severe cirrhosis was reater in females of all ages given CCl$_4$ and 3-methlcholanthrene; the differences were greater in 5-nd 12-week-old animals than in the other animals. he incidence of hepatic vein thrombosis was markedly ncreased in male and female animals of all ages iven CCl$_4$ and 3-methylcholanthrene and complete cclusion with infarcts of the liver was observed in 5-week-old male rat, in a 24-week-old female and in 52-week-old female rat. There were more hyperlastic nodules in animals given both chemicals, rticularly those 5 and 12 weeks old.

78 CLINICAL ASYMPTOMATIC FUNCTIONAL DISORDERS OF THE EXOCRINE PANCREAS IN CHRONIC ALCOLICS. *(Ger.)* Goebell, H. (Med. U. Clin., Marburg, rmany), C. Bode, R. Bastian and G. Strohmeyer. *utsch Med Wschr* 95(15):808-814, 1970.

The incidence and extent of pancreatic insufficiency were studied in 54 chronic alcoholics (who had ingested 120 g alcohol daily) with and without liver cirrhosis. Diabetes mellitus was found in 3 patients, and a prediabetic condition in 12 patients (by i.v. glucose tolerance test) otherwise no clinical evidence of severe chronic pancreatitis was seen. Pancreatic excretory function was tested by the secretin-pancreozymin test; 9 of the 22 cirrhotics, and 20 of the 32 non-cirrhotic patients were found to have a malfunction. A disturbance in all the pancreatic tests (lipase, amylase, trypsin, chymotrypsin, protein) following pancreozymin stimulation was found in 5 of the 22 cirrhotics, and in 6 of the 32 non-cirrhotics. Normal values for the pancreatic tests following pancreozymin stimulation were: lipase - 1420 U/min, amylase - 967 U/min, trypsin - 31.2 U/min, chymotrypsin - 90 U/min and protein - 4.0 mg/min. Values (in the same order) for the 5 cirrhotic patients were 700 U, 603 U, 18.3 U, 55 U and 2.2 mg; for the 6 non-cirrhotic patients, 554 U, 415 U, 11.8 U, 42 U, and 2.0 mg. The volume secretion was significantly higher than normal (3.2 ml/min after i.v. secretin) in the cirrhotics (4.2 ml/min) and lower than normal in the non-cirrhotics (2.7 ml/min). The pancreatic malfunction in a total of 29 out of 54 alcoholics reflects the incidence of pancreatic damage in chronic alcoholism which is not manifested clinically.

5279 PROGRESS IN THE THERAPY OF LIVER DISEASES: WITH SPECIAL CONSIDERATION OF A STUDY OF VITAMIN B$_{12}$-LIVER INCORPORATION WITH SIMULTANEOUS ADMINISTRATION OF CORTICOSTEROIDS. *(Ger.)* Eisenburg, J. (Med. Clin. U. Munich, Germany). *Fortschr Med* 88(5):165-174, 1970.

The incorporation of labeled vitamin B_{12} (0.5 µg i.v.) with and without simultaneous cortisone injection (5 or 10 mg) in regenerating liver was studied in 7 patients with chronic hepatitis leading to cirrhosis, 7 patients with hepatic cirrhosis, and 6 healthy subjects. Vitamin B_{12} uptake was lower in damaged livers than in those of healthy controls, and was dependent on hepatic circulation. Lowest uptake was observed in a regenerative, decompensated, advanced cirrhosis. Cortisone administration increased the normal B_{12} uptake from -13.4% to +23.7% (5 mg) and +41.4% (10 mg); and in cirrhotic patients from -12.2% to +36.8 and +55.7%, resp. The observed decrease in vitamin B_{12} uptake in chronic hepatitis and post-hepatic cirrhotic patients depended on the degree of parenchymal damage.

5280 VOLATILE FATTY ACIDS IN THE BREATH OF PATIENTS WITH CIRRHOSIS OF THE LIVER. *(E.)* Zieve, L. (Minneapolis Vet. Hosp., Minn.), S. Chen and V. Mahadevan. *J Lab Clin Med* 75(4):622-627, 1970.

Using gas chromatography the breath of 8 normal subjects, 11 patients with decompensated cirrhosis and 4 patients with compensated cirrhosis were compared with regard to volatile fatty acids. Normal average levels (± S.D.) of acetic and propionic acids (in µg/100 ml condensed vapor) were 79 ± 30 and 23 ± 16, resp., with no measureable isobutyric, butyric, or isovaleric acid. Patients with decompensated cirrhosis had increased levels of acetic and propionic acids (670 ± 449 and 132 ± 82, resp.), as well as increased isobutyric, butyric and isovaleric acids (20 ± 12, 19 ± 24, and 9 ± 13, resp.). Only 4 of the 11 cirrhotic patients excreted isovaleric acid and 8 excreted butyric acid. Four patients with compensated cirrhosis excreted acetic and propionic acids from the lungs in the range of 61 to 385 and 26 to 58 µg/100 ml, resp. There was no relationship between the excretion of volatile fatty acids and the degree of jaundice, but the correlation with the serum transaminase (0.7) was significant. The volatile fatty acids in the breath seemingly reflect the very short chain fatty acids that are absorbed via the portal venous system but bypass the liver in the presence of portosystemic shunts.

5281 MERCAPTANS AND DIMETHYL SULFIDE IN THE BREATH OF PATIENTS WITH CIRRHOSIS OF THE LIVER: EFFECT OF FEEDING METHIONINE. *(E.)* Zieve, L. (Minneapolis Vet. Hosp., Minn.), S. Chen and V. Mahadevan. *J Lab Clin Med* 75(4):628-635, 1970.

Methanethiol, ethanethiol, and dimethyl sulfide were the only sulfur compounds detected (identified and analyzed by gas chromatography) in the breath of normal subjects (7), cirrhotic patients (13) fed methionine, or cirrhotic patients (3) in hepatic coma. Normally, methanethiol is 6 - 20% of the mercaptans excreted. Under fasting conditions in the absence of gastrointestinal bleeding, methane and ethanethiol are approximately twice normal in severe decompensated cirrhosis (10 cases), with the percentage of methanethiol ranging from 6 to 67%; only in the presence of gastrointestinal bleeding was the amount of methanethiol in the breath greater than the amount of ethanethiol, with the methanethiol increasing further several fold. After ingestion of methionine the mercaptans are approximately doubled in the breath of normal persons with little change in cirrhotic patients. The intensity of the pungent odor of the breath of cirrhotic patients after methionine administration was unrelated to the concentration of mercaptans, but was directly related to the concentration of dimethyl sulfide.

5282 CEREBRAL HEMODYNAMICS AND METABOLISM IN HEPATIC CIRRHOSIS: EFFECTS OF PORTACAVAL SHUNT OPERATION. *(E.)* Bianchi Porro, G. (Med. Dept., U. Milan, Italy) and A. T. Maiolo. *Digestion* 3(2):111-121, 1970.

Cerebral hemodynamics and metabolism (mean arterial pressure, blood flow, vascular resistance, glucose and oxygen metabolic rate, respiratory quotient and glucose/oxygen quotient) were compared in patients with hepatic cirrhosis (with and without portacaval anastomosis) and in healthy controls. Cerebral blood flow (ml/100 g/min), vascular resistance (mm Hg/ml/100 g/min), metabolic rate of oxygen (ml/100 g/min), metabolic rate of glucose (mg/100 g/min), mean arterial pressure (mm Hg) and respiratory quotient were within normal range (64.7, 1.62, 3.75, 6.84, 99 and 0.93, resp.) in patients with cirrhosis who did not undergo portacaval anastomosis. Cerebral blood flow, metabolic rate of glucose and metabolic rate of oxygen were increased (97.4, 10.27 and 4.25, resp.), vascular resistance was decreased (1.12) and mean arterial pressure and respiratory quotient were unaltered in cirrhotic patients following portacaval anastomosis. The cerebral glucose/oxygen quotient was increased (2.49) above normal (1.82) following portacaval anastomosis.

5283 HEMOSTATIC STUDIES DURING CLINICAL PIG LIVER PERFUSION. *(E.)* Ro, J. S. (U. Hosp. Oslo, Norway) and A. Flatmark. *Scand J Gastroent* 5(4):315-320, 1970.

Hemostatic studies were performed on a 22-year-old girl with liver cirrhosis and deep hepatic coma who was treated with 2 consecutive pig liver perfusions. The first 4-hr pig liver perfusion was accompanied by administration of 1,250 ml heparinized blood, 125 mg protamine sulfate and platelets from 4 donors. The perfusion stimulated bile production at 90 ml/hr and decreased bilirubin from 10.8 to 6.1 mg/100 ml, and ammonia from 148 to 59 µg/100 ml. The second pig liver perfusion was given 14 hr later, giving similar biochemical improvements, and the following day the patient died. Accumulation of platelets and leukocytes in the livers was observed by microscopic examination of both pig livers and samples of arteria blood and return blood from one perfused liver. During the perfusions, the platelet count dropped by 50 to 60%, from 80,000 to less than 40,000 platelets per µl, and remained at a low level, while leukocytes also dropped from 8,000 to less than 5,000 per µl. Thrombotest levels rose from 12 to 40% during the first perfusion and from 11 to 26% during the second erfusion. The level of activity of factor V in-reased from 25 to 65% during the first perfusion nd from 35 to 45% during the second perfusion, while he activity of factor VIII increased initially and ecreased later in the perfusions. Arterial blood rom the second perfused pig liver had a reduced latelet level of 40,000 per µl at 95 min after start f perfusion, compared with a pre-perfusion level of 8,000 per µl, while return blood from the liver had platelet concentration of 16,000 per µl, Leukocytes ere also reduced from a pre-perfusion value of ,900 per µl in arterial blood to 4,300 at 95 min erfusion time, and a count of 3,600 in return blood.

284 ZIEVE'S SYNDROME. *(Fr.)* Laurent, J. (Fac. Med. Nancy, France), M. A. Bigard and F. hiebault. *Vie Med* 51(14):2103-2107, 1970.

285 CUTANEOUS LESIONS WITH RESPECT TO HEPATIC CHANGES. *(Fr.)* Sarkany, I. (Roy. Free osp., London, England). *Ouest Med* 23(7):749-751, 970.

286 GASTROINTESTINAL HEMORRHAGE DUE TO PORTAL HYPERTENSION. *(Fr.)* Imler, M. (U. Hosp. tr., Strasbourg, France). *Rev Med* 11(17):1015-1023, 970.

287 HYPERPROTEINEMIA AND MACROGLOBULINEMIA IN LIVER CIRRHOSIS. *(Ger.)* Schneiderbaur, A. St. Hosp. Vienna, Austria) and F. Rettenbacher. *in Med Wschr* 120(6):93-96, 1970.

288 THE DECREASE IN THE PROTHROMBIN COMPLEX INDUCED BY HEPATIC ANOXEMIA IN MAN. *(Fr.)* rgoz, D. (C. H. U. St. Antoine, Paris, France), T. alettes, C. Sarrade-Loucheur, J. Perrot and A. liou. *Rev Medicochir Mal Foie* 45(2):105-111, 1970.

289 ENCAPSULATED PERIHEPATITIS: TWO CAMBODIAN OBSERVATIONS. *(Fr.)* Tournier-Lasserve, . (Hosp. Preah Ket Melea, Phnom Penh, Cambodia), . H. Sun, Leng-Pao, Mam-Chhem and P. Robert. *irurgie* 96(3):200-203, 1970.

290 BLOOD CLOTTING IN LIVER CIRRHOSIS. *(Ger.)* Fischer, M. (Med. U. Clin. Vienna, stria). *Wien Z Inn Med* 51(3):109-110, 1970.

291 LIPIDS AND COAGULATION FACTORS IN THE PORTAL AND SUPRAHEPATIC VEINS OF CIRRHOT-S. *(Fr.)* Dufault, C. (Hosp. St. Luc, Montreal, nada), A. Viallet, P. Lavoie, J. Bernier and H. auregard. *Un Med Canada* 99(3):442-448, 1970.

5292 FUNCTIONAL RENAL INSUFFICIENCY OF THE CIRRHOTIC. *(Fr.)* Naudin, G. (Hosp. Bicitre, France). *Concours Med* 92(6):1213-1223, 1970.

5293 ACUTE YELLOW ATROPHY IN PREGNANCY: PRESENTATION OF A CASE TREATED BY PLASMAPHERESIS AND STUDIED WITH THE ELECTRON MICROSCOPE. *(Fr.)* Lamontagne, R. (Holy Sacrament Hosp., Quebec, Canada), R. Gagnon, R. Lesage, R. Garneau, R. F. De E. Puig and J. F. E. Puig. *Un Med Canada* 99(6):1083-1093, 1970.

5294 HEMOLYTIC SYNDROME: ERTHROCYTE ANOMALIES IN ALCOHOLIC CIRRHOSIS. *(Fr.)* Lorriaux, A. (C. H. U. Amiens, France), J. P. Mizon, F. Gentit and J. Mersserchmitt. *Presse Med* 78(17):803-804, 1970.

5295 ALCOHOLIC NECROSIS OF THE LIVER: A FATAL CASE. *(Fr.)* Bertrand, L. (Hosp. St. Eloi, Montpelier, France). *Bordeaux Med* 2(9):1869-1878, 1969.

5296 PLEURAL EFFUSIONS IN THE COURSE OF HEPATO-CIRRHOSIS: 17 CASES IN 508 PATIENTS. *(Fr.)* Plauchu, M. (no affil), H. Chapuy, R. De Montgolfier, B. Veyre and M. Jeune. *J Med Lyon* (1182):641-652, 1970.

5297 INDICATIONS AND RESULTS OF PORTACAVAL ANASTOMOSIS IN PATIENTS WITH CIRRHOSIS OF THE LIVER. *(Fr.)* Maillard, J. N. (Hosp. Beaujon, Clichy, France) and B. Rueff. *Rev Med* 11(17):1005-1012, 1970.

5298 PORTAL VENOUS HYPERTENSION. *(Fr.)* Imler, M. (U. Ctr. Hosp., Strasbourg, France) and R. Bockel. *Rev Med* 11(17):977-1003, 1970.

5299 METABOLISM OF DIETARY PROTEIN IN HEPATIC CIRRHOSIS. *(E.)* Gabuzda, G. J. (Case Western Reserve U. Sch. Med., Cleveland, Ohio) and L. Shear. *Amer J Clin Nutr* 23(4):479-487, 1970.

o Diagproc (4892)(4932)(4940)(4950)
o D:S.Intest:Malabs (5072)(5074)(5081)
o D:Livbil (5167)(5172)(5173)(5197)(5212)(5217)
o D:Livbil:A.Nonv.Hep (5224)(5235)
o D:Livbil:A.V.Hep (5265)
o D:Livbil:C.Hep (5274)
o D:Livbil:Gallb (5302)

Gallbladder and Biliary Tract Diseases

5300 EXPERIMENTAL THERAPY OF GALLBLADDER LITHIASIS: PREVENTIVE AND CURATIVE EFFECTS OF VARIOUS DRUGS IN MICE. *(Fr.)* Besancon, F. (Hosp. Lariboisiere, Paris, France), C. Marche, C. Barret and J. Parrot. *Arch France Mal Appar Dig* 59(6):353-376.

The efficacy of drugs which prevent lithiasis and preventive measures in the formation of vesicular lithiasis caused by sodium dehydrocholate were studied in mice. Sodium dehydrocholate (5% solution) was added to a normal diet (666 female nulliparous mice) for a period of 4 months, during which time 33 different drugs were tested as preventive agents. The lithiasis caused in the untreated mice by the dehydrocholate was confirmed in 37 mice at the end of 4 months, and 7 of these animals received a 5% solution of clofibrate in addition to the dehydrocholate. For comparison, 40 mice were given a normal diet, following the 4 months on the lithogenous diet, and they were observed for spontaneous dissolution of the calculi. Clofibrate prevented the formation of the large birefractive cholesterol crystals caused by the dehydrocholate, but did not prevent vesicular distension or some of the lesions, and did not prevent deposits in the liver. The mice responded well, with a negligible mortality (no appearance of lithiasis with continuation of the diet 12 to 20 months), and the efficacy of the clofibrate correlated with the dosage. Results of treatment (either by discontinuation of dehydrocholate, or addition of clofibrate) were seen (microscopically) in a partial dissolution of the lithiasis manifested by changes in the morphology of the biliary crystals (which appeared hollow and residual with polarized light). In the liver, the birefractive cholesterol crystals only disappeared at the end of the lithogenous diet.

5301 PLASMA LECITHIN-CHOLESTEROL ACYLTRANSFERASE IN OBSTRUCTIVE JAUNDICE. *(E.)* Gjone, E. (U. Hosp., Oslo, Norway) and J. P. Blomhoff. *Scand J Gastroent* 5(4):305-308, 1970.

Lecithin-cholesterol acyltransferase activity (% free cholesterol esterified/hr) in plasma from patients with obstructive jaundice was compared with that in normal controls. Activity was reduced to 0.14 from the normal value (3.07) in patients with obstructive jaundice. Dilution experiments (100, 90, 75, 50, 25 and 0% normal plasma added to jaundiced plasma) with and without deactivating lecithin-cholesteral acyltransferase closely resembled each other indicating that marked lecithin-cholesterol acyltransferase inhibition cannot explain the low activities observed in jaundiced patients. Bile salts (taurocholic or glycocholic acid) reduced lecithin-cholesterol acyltransferase activity in normal plasma only at concentrations (1.6 mg/ml) above those found in jaundiced sera indicating that bile salts alone cannot be responsible for the low enzyme activity in obstructive jaundice.

5302 MORPHOLOGICAL-FUNCTIONAL CHANGES IN THE GALLBLADDER IN THE COURSE OF HEPATOPATHIES. *(Ger.)* Stoenescu, R. (Physiol. Inst., Acad. Rumanian S.R., Bucarest), S. Schiau and P. Stoiculescu. *Radiologie* 10(1):42-45, 1970.

The morphological-functional changes in the gallbladders of 104 patients with chronic hepatitis (67) or cirrhosis (37) were examined by volumetric serial cystography. Negative cholecystographies were found in 6% of the control group (900 hospitalized patients without organic digestive complaint), 9% of the hepatitis patients, and 38% of the cirrhotics; filling of the gallbladder was diminished in 9, 19.5 and 35%, resp. An increased incidence of normokinetic gallbladder (control 56%, hepatitis 68.5%) and unchanged hyperkinesia were seen in the hepatitis group. The incidence of hypokinesia in the control and hepatitis groups was 41 and 27.8%, resp. In the cirrhosis cases, the hypokinesias fell to 14.3% while the hyperkinesias were 21% (control 3%). These morphological and functional changes apparently develop parallel to the liver parenchymal damage.

5303 EVALUATION OF THE PATIENT WITH HEMOBILIA. *(E.)* Sedgwick, C. E. (Lahey Clin., Boston, Mass.) and R. J. Coburn. *Surg Clin N Amer* 50(3):683-690, 1970.

5304 HEPATIC VAGOTOMY AND CHOLECYSTECTOMY IN CHOLELITHIASIS: MANOMETRIC VARIATIONS OF THE BILIARY TREE. *(It.)* Grassi, G. (Central Hosp., Rome, Italy), B. Sbuelz and A. Dell'Osso. *Chir Gastroent* 4(1):29-34, 1970.

5305 ACUTE CHOLECYSTITIS. *(Por.)* Freire, E. C. DaS. (Hosp. Getulio Vargas, Brazil). *Hospital* 77(1):149-202, 1970.

5306 CLINICAL FORMS OF GALLBLADDER CARCINOMA. *(It.)* Medici, A. (Dept. Surg., U. Parma, Italy) and P. P. Rigamonti. *Ateneo Parmense* 40(6):626-650, 1969.

5307 SCLEROSING CHOLANGITIS: REPORT OF A CASE. *(Nor.)* Storen, E. J. (Aker Hosp., Oslo, Norway) and G. Waaler. *Nord Med* 83(19):594-596, 1970.

5308 BILIARY TRACT SURGERY IN COMMUNITY HOSPITAL. *(E.)* Deysine, M. (Mt. Sinai Sch. Med., New York, N. Y.), K. R. Adiga and J. R. Wilder. *New York J Med* 70(11):1294-1297, 1970.

5309 CARCINOMA OF THE GALLBLADDER: A STUDY OF 390 CASES DIAGNOSED IN FINLAND 1953-1967. *(E.)* Vaittinen, E. (2nd Dept. Surg., U. Helsinki, Finland). *Ann Chir Gynec Fenn* 59(supp. 168):1-81, 1970.

5310 THE SEPARATION OF ABNORMAL SERUM LIPOPROTEINS IN CHOLESTASIS. *(Fr.)* Picard, J. (Fac. Med. St. Antoine, Paris, France) and D. Veissiere. *C R Acad Sci* 270(14):1845-1848, 1970.

5311 CHOLELITHIASIS AND GALLBLADDER CARCINOMA. *(Ger.)* Salzer, G. M. (Surg. Clin. U. Innsbruck, Germany). *Z Gastroent* 8(2):111-114, 1970.

5312 THE USE OF BIOLOGICAL GLUE IN BILIARY TRACT SURGERY. *(Fr.)* Vinogradov, V. (Moscow, JSSR) and G. Ostroverkhov. *Bull Soc Int Chir* 29(1): 43-45, 1970.

313 PROBLEMS ASSOCIATED WITH CONGENITAL DUPLICATION OF THE GALLBLADDER. *(E.)* apaioannou, A. N. (Metaxas Mem. Hosp., Piraeus, reece) and S. K. Bartsokas. *Int Surg* 53(5):338-343, 970.

314 DIET, CHOLESTEROL GALLSTONES AND COMPOSITION OF THE BILE. *(E.)* Sarles, H. (Inst. atl. Sanit. Res. Med., Marseilles, France), J. auton, N. E. Plance, H. Lafont and A. Gerolami. *mer J Dig Dis* 15(3):251-260, 1970.

315 CANCER OF THE BILE DUCT AND CHRONIC ULCERATIVE COLITIS. *(E.)* Babb, R. R. (Palo lto Med. Clin., Calif.), R. H. Lee and O. C. Peck. *mer J Surg* 119(3):337-339, 1970.

316 MULTISEPTATE GALLBLADDER: EMBRYOGENIC HYPOTHESES. *(E.)* Bhagavan, B. S. (Sinai osp., Baltimore, Md.), P. B. Amin, A. S. Land and . Weinberg. *Arch Path* 89(4):382-385, 1970.

317 BILIARY TRACT OBSTRUCTION AND DUODENAL DIVERTICULA. *(E.)* McSherry, C. K. (New ork Hosp., Cornell Med. Ctr., New York) and F. lenn. *Surg Gynec Obstet* 130(5):829-836, 1970.

318 INTRADUODENAL CYST CONTAINING BILE AND STONES: "CHOLEDOCHOCELE" IN AN ACCESSORY ILE DUCT. *(E.)* Jansen, W. (U. Hosp., Groningen, olland). *Gastroenterology* 58(3):397-401, 1970.

319 HYDROPS OF THE GALLBLADDER: UNUSUAL ROENTGENOGRAPHIC DEMONSTRATION. *(E.)* enereux, G. P. (U. Hosp., Saskatoon, Saskatchewan, anada) and S. P. K. Tchang. *J Canad Ass Radiol* 1(1):39-42, 1970.

20 ROENTGENOGRAPHIC STUDIES ON CHOLELITHIASIS. *(E.)* Saito, S. (Gunma U. Sch. Med., aebashi, Japan), N. Toda, M. Ishimoto, M. Matsumoto, . Yamashina and T. Tobe. *Gunma J Med Sci* 7-18(1-4):41-48, 1969.

5321 POST-VAGOTOMY CHOLELITHIASIS: STATISTICAL STUDY OF 180 PATIENTS. *(Fr.)* Hamel, J. Y. (Hosp. Maison-neuve, Canada) and L. P. Lejeune. *Un Med Canada* 99(3):457-461, 1970.

5322 OBSTRUCTIVE FUNCTIONAL JAUNDICE DUE TO DUODENAL-BILIARY DYSKINESIA. *(Fr.)* Kapandji, M. (Hosp. Broussais, Paris, France) and F. Poilleux. *Ann Chir* 23(25-26):1349-1354, 1969.

5323 BILIARY ELIMINATION OF METAMPICILLINE. *(Fr.)* Lande, M. (Hosp. Cochin, Paris, France). *Presse Med* 78(17):805-806, 1970.

5324 PATHOGENESIS AND TREATMENT OF ACUTE CHOLECYSTITIS: CLINICAL AND EXPERIMENTAL STUDY. *(Fr.)* Sosa Gallardo, C. (Fac. Med., Natl. U. Cordoba, Spain), A. Ferraris, H. Smith and M. Duran. *Lyon Chir* 66(1):45-48, 1970.

5325 THE EPIDEMIOLOGY OF CHOLELITHIASIS. *(Ger.)* Salzer, G. M. (Surg. Clin., U. Innsbruck, Germany), E. Olbrich and H. Kutschera. *Acta Hepatosplen* 17(2):65-74, 1970.

5326 MULTIFOCAL FIBROMATOSIS WITH PARTICULAR EFFECT ON THE LIVER AND THE BILE DUCTS. *(Ger.)* Strauch, M. (Path. Inst., U. Freiburg, Germany) and W. Oehlert. *Acta Hepatosplen* 17(2):90-97, 1970.

5327 COMPLETE ATRESIA OF THE EXTRAHEPATIC BILE DUCTS. *(Fr.)* Alagille, D. (Hosp. Parrot, Bicetre, France), J. Borde and J. P. Dommergues. *Arch Franc Pediat* 27(1):85-91, 1970.

5328 GALLBLADDER SURGERY IN OLD AGE. *(Ger.)* Heim, U. (Red Cross Hosp., Chur, Switzerland), R. Lanz, A. Nussbaumer, M. A. Peter and O. Ramser. *Praxis* 59(6):199-200, 1970.

5329 PRESENCE OF PANCREATIC JUICE IN THE GALLBLADDER OF PATIENTS WITH CHOLELITHIASIS. *(E.)* Chaimoff, C. (Tel Aviv U. Med. Sch., Israel) and M. Dintsman. *Israel J Med Sci* 6(2):313-315, 1970.

5330 GALLSTONE OBSTRUCTION OF THE SECOND PART OF THE DUODENUM. *(E.)* Rose, T. F. (Roy. North Shore Hosp., Sydney, Australia). *Med J Aust* 57(8):384-385, 1970.

- o Diagproc (4893)(4906)(4917)(4918)(4919)(4941)
- o D:S.Intest (5047)(5054)
- o D:Pancreas:Pancreat (5149)
- o D:Livbil (5199)(5209)(5210)(5218)

5331 COLONIC PREPARATION: A CONTROLLED TRIAL OF DULCODOS, DULCOLAX AND SENOKOT DX. *(E.)* Sanders, R. C. (Churchill Hosp., Oxford, England) and F. W. Wright. *Brit J Radiol* 43(508):245-247, 1970.

A double-blind study of the laxative action and side effects of Dulcodos (100 mg dioctyl Na sulfosuccinate), Dulcolax (5 mg bisacodyl) and Senokot DX (14 mg of sennosides A and B) was conducted in 450 sequential out-patients scheduled for barium enema or i.v. pyelogram, and allocated on a randomized sequence to one of the three preparations. The patients took 2 laxative tablets on the 2 evenings preceeding X-ray examination, and on the day of examination, an abdominal radiograph was taken before a cleansing enema was given. Prior to the barium enema, a colon washout with 3 pints of water containing 10 mg Dihydroxyphenylisatin was performed and the quantity of feces removed was recorded. The preliminary abdominal radiographs for both barium enemas and IV pyelograms were reviewed to evaluate the presence of feces or pathology. Only 308 patients were evaluated, and the plain films revealed no significant difference between the three preparations either for gas or feces. Out of the 104 subjects receiving Senokot DX, 45 (43%) were clear of feces and 59 (55%) were clear of gas. One-hundred and two patients received Dulcolax and 35 (34%) were clear of feces and 50 (49%) were clear of gas. Out of the 102 patients receiving Dulcodos, 41 (40%) were clear of feces and 59 (58%) were clear of gas. Overall, Senokot DX and Dulcodos were slightly superior to Dulcolax for bowel preparation for radiologic examination, but they produced slightly more side effects (vomiting, gripping pain, nausea, and dizziness) than Dulcolax. Forty percent of the patients were clear of feces on the radiographs taken after laxative preparation; however, 40% were too severely contaminated for performance of the barium enema without a preliminary colon washout. The colon washout seemingly can be eliminated when the radiograph shows the absence of feces.

5332 ACUTE OCCLUSION OF THE MESENTERIC ARTERIES. *(Ger.)* Senn, A. (Insel Hosp., Berne, Switzerland). *Ther Umsch* 27(4):243-247, 1970.

5333 THE TREATMENT OF SALMONELLA INFECTIONS. *(Ger.)* Mueller, K. (Med. Clin., Polyclin., Justus Liebig U., Geissen, Germany) and K. Schultis. *Med Welt* 21(19):870-872, 1970.

5334 POST-OPERATIVE INTESTINAL OCCLUSIONS. NOSOLOGICAL STUDY. *(Fr.)* Vankemmel, M. (no affil) and G. Derasse. *Lille Chir* 25(2):58-60, 1970.

5335 A UNIVOCAL TREATMENT FOR MULTIPLE DIFFICULTIES: DOGMATIL IN PSYCHO-DIGESTIVE PATHOLOGY. *(Fr.)* Bernard, J. (no affil). *Therapeutique* 46(3):336-337, 1970.

5336 VASCULAR SURGERY IN THE TREATMENT OF INTESTINO-MESENTERIC INFARCT OF ARTERIAL ORIGIN. *(Fr.)* Rettori, R. (Hotel Dieu Hosp., Paris, France), C. Olivier, H. Demigneux and G. Di Maria. *J Med Strasbourg* 1(3):181-184, 1970.

5337 ACUTE POST-OPERATIVE INTESTINAL OCCLUSIONS - A COMPARATIVE STUDY OVER 10 YEARS IN HOSPITAL PRACTICE. *(Fr.)* Derasse, G. (no affil) and M. Vankemmel. *Lille Chir* 25(2):61-65, 1970.

5338 HYPEROSMOLAR SOLUTIONS IN POST-OPERATIVE INTESTINAL ATONIA. *(Ger.)* Messmer, K. (Surg. Clin. U. Munich, Germany) and M. Schmidt-Mende. *Deutsch Med Wschr* 95(11):557-562, 1970.

5339 PERIARTERITIS NODOSA AND ITS GASTROINTESTINAL COMPLICATIONS. *(Ger.)* Furstenberg, H. S. (Mannheim Clin., U. Heidelberg, Germany), J. F. Bussmann and K. R. Loewe. *Bull Soc Int Chir* 29(1):28-33, 1970.

5340 THE PROTEIN MALNUTRITION OF THE BIAFRAN CHILDREN: CLINICAL STUDY. *(Fr.)* Sagnet, H. (Hosp. Milit. Campagne, Libreville, Gabon), R. Paillet, C. Josserand, J. Goasguen, J. C. Lachaud, J. Thomas and Y. Mafart. *Bull Soc Path Exot* 42(5):937-941, 1970.

5341 CHRONIC DIARRHEA IN A MEDULLARY TUMOR OF THE THYROID: CURE THROUGH EXCISION OF TUMOR. *(Fr.)* Blum, H. (C. H. U. Strasbourg, France), P. Reville and J. P. Witz. *J Med Strasbourg* 1(2):119-124, 1970.

5342 HEMORRHAGE AND PROGNOSIS. *(Ger.)* Brunner, E. (1st. Med. U. Clin., Vienna, Austria). *Wien Z Inn Med* 51(3):95-98, 1970.

5343 MIGRAINE, THE LIVER AND DIGESTIVE TRACT. *(Fr.)* Hillemand, B. (Hosp. Charles Nicolle, Rouen, France). *Sem Hop* 46(7):447-460, 1970.

5344 ORAL LAXATIVES IN BARIUM ENEMA PREPARATION. *(E.)* Ennis, J. T. (Torbay Hosp., Torquay, England) and A. V. Mitchell. *Brit J Radiol* 43(508):242-244, 1970.

5345 GASTROENTEROLOGICAL EMERGENCIES IN CHILDREN. *(Ger.)* Truckenbrodt, H. (U. Child. Clin. Erlangen-Nuremberg, Germany). *Therapiewoche* 20(11):452-454, 1970.

5346 A NEW OBSERVATION OF A CASE OF MEDITERRANEAN ABDOMINAL LYMPHOMA WITH α HEAVY CHAIN DISEASE AND TUBERCULOSIS OF THE MESENTERIC LYMPH NODES. *(Fr.)* Laroche, C. (Hosp. Cochin, Paris, France), M. Seligmann, H. Merillon, G. Turpin, C. Marche, M. Cerf, G. Lemaigre, M. Forest and D. Hurez. *Press Med* 78(2):55-59, 1970.

5347 SOME THOUGHTS REGARDING 32 GASTROINTESTINAL HEMORRHAGES IN BURN CASES. *(Fr.)* Pessereau, G. (Milit. Hosp. Percy, Clamart, France), R. Monteil, R. Pantin and J. Carvais. *Chirurgie* 96(3):218-223, 1970.

5348 STENOSIS OF THE CELIAC AXIS: RADIOLOGICAL STUDY OF 13 CASES. *(Fr.)* Lemaitre, G. (no affil), C. L'Hermine, M. Vankemmel, J. P. Maillard and J. Clarisse. *Ouest Med* 23(1):4-10, 1970.

5349 MALNUTRITION IN SENEGALESE CHILDREN: WITH RESPECT TO TWO SURVEYS CARRIED OUT IN THE HOSPITAL ENVIRONS AND IN THE RURAL AREA. *(Fr.)* Satge, P. (Inst. Soc. Pediat., U. Dakar, Senegal), V. Dan and A. Debroise. *Rev Med* 11(2):87-98, 1970.

5350 TERMINO-LATERAL DIGESTIVE ANASTOMOSES BY MEANS OF METALLIC CLIPS WITH P. K. S. 25. *(Fr.)* Lagache, G. (no affil) and M. Vankemmel. *Lille Chir* 25(1):35-43, 1970.

5351 INTESTINAL HEMORRHAGES IN EMERGENCY PATHOLOGY (SMALL INTESTINE, COLON, RECTUM): THERAPEUTIC INDICATIONS. *(Fr.)* Monod-Broca (Hosp. Bicetre, France). *Ann Gastroent Hepat Hotel Dieu* 6(2):165-173, 1970.

5352 A NEW APPLICATION OF BISMUTH IN GASTROENTEROLOGY. EXPERIMENTATION IN 49 CASES. *(Fr.)* Poirier, J. P. (Girac Hosp., Angouleme, France). *Therapeutique* 46(3):303-305, 1970.

5353 ALIMENTARY POISONING OF STAPHYLOCOCCIC ORIGIN IN TEHERAN. *(Fr.)* Vadhat, A. (Fac. Med., U. Teheran, Iran). *Bordeaux Med* 3(4):1003-1006, 1970.

5354 L L 505 TRIAL IN DYSPEPSIAS. *(Fr.)* Alary, R. (no affil), B. Savoye, R. Dietsch and M. Girard. *J Med Lyon* (1182):709-710, 1970.

5355 INTESTINAL STENOSING TUBERCULOSIS. *(Fr.)* Bermer, A. (Hosp. U. Saint-Pierre, Brussels, Belgium), J. De Graef, R. Duret and L. Deloyers. *Acta Gastroent Belg* 33(1):70-80, 1970.

5356 THE USE OF MEXASE IN DIGESTIVE PATHOLOGY: ITS VALUE. *(Fr.)* Felix, M. H. (no affil). *J Med Lyon* (1182):663-678, 1970.

5357 SALMONELLA EXCRETION IN JOY-RIDING PIGS. *(E.)* Williams, L. P., Jr. (Coll. Vetr. Med. Biomed. Sci., Colorado St. U., Fort Collins) and K. W. Newell. *Amer J Publ Hlth* 60(5):926-929, 1970.

5358 UNUSUAL ENTERITIS IN MANIPAL, INDIA. *(E.)* Narayan, A. S. (Kasturba Med. Coll., Gen. Hosp., Manipal, India) and N. R. Rao. *Int Surg* 53(5):357-362, 1970.

5359 PERCUTANEOUS RETROGRADE ABDOMINAL AORTOGRAPHY COMPLICATION: INTIMAL DISSECTION. *(E.)* Kittle, C. F. (Pritzker Sch. Med., U. Chicago, Ill.), V. Kocandrle and J. Petasnick. *Arch Surg* 100(5):611-613, 1970.

5360 RECOVERY OF EXOCRINE PANCREATIC FUNCTION IN ADULT PROTEIN-CALORIE MALNUTRITION. *(E.)* Banks, P. A. (Brookline, Mass.), B. N. Tandon, P. K. George, S. K. Sama, K. Ramachandran and P. C. Gandhi. *Gastroenterology* 58(3):358-362, 1970.

5361 FOWL CHOLERA IMMUNIZATION IN TURKEYS: I. EFFICACY OF VARIOUS CELL FRACTIONS OF *PASTEURELLA MULTOCIDA* AS VACCINES. *(E.)* Brown, J. (Sch. Vetr. Med., U. Georgia, Athens), D. L. Dawe, R. B. Davis, J. W. Foster and K. K. Srivastava. *Appl Microbiol* 19(5):837-841, 1970.

5362 FOWL CHOLERA IMMUNIZATION IN TURKEYS: II. USE OF EXPERIMENTAL EPORNITIC METHOD TO STUDY VACCINE EFFICACY IN FLOCKS OF TURKEYS. *(E.)* Dawe, D. L. (Sch. Vetr. Med., U. Georgia, Athens), R. B. Davis, J. Brown, J. W. Foster and K. K. Srivastava. *Appl Microbiol* 19(5):842-843, 1970.

5363 FOWL CHOLERA IMMUNIZATION IN TURKEYS: III. SIGNIFICANCE OF MARKET QUALITY IN THE EVALUATION OF FOWL CHOLERA VACCINES. *(E.)* Davis, R. B. (Sch. Vetr. Med., U. Georgia, Athens), J. Brown, D. L. Dawe, J. W. Foster and K. K. Srivastava. *Appl Microbiol* 19(5):844-847, 1970.

5364 THE APPLICATION OF THE P. K. S. 25 APPARATUS IN DIGESTIVE TERMINOLATERAL ANASTOMOSES BY MEANS OF METALLIC CLIPS. *(Fr.)* Lagache, G. (City Hosp. Lille, France) and M. Vankemmel. *J Chir* 99(2):109-120, 1970.

5365 PRECANCEROUS INDICATIONS IN THE INTESTINAL TRACT: A RADIOLOGICAL CLINICAL STUDY WITH RESPECT TO SURGICAL PATIENTS OF THE FRANKFURT UNIVERSITY CLINIC 1943-1968. *(Ger.)* Strnad, F. (Surg. U. Clin., Frankfurt, Germany) and U. Hartte. *Chirurg* 41(3):103-107, 1970.

5366 DYSPEPSIA DUE TO COW'S MILK. *(Fr.)* Ducas, J. (no affil). *Med Infant* 76(10):795-796, 1970.

5367 PATHOANATOMICAL ASPECTS OF THE PRELIMINARY STAGES OF CANCER OF THE GASTROINTESTINAL TRACT. *(Ger.)* Eder, M. (Path. Inst. U. Cologne, Germany), B. Wiebecke and H. J. Klein. *Chirurg* 41(3):97-103, 1970.

5368 GASTROENTEROLOGICAL EMERGENCIES—HEMORRHAGING. *(Ger.)* Stadelmann, O. (Med. Clin. Polyclin. U. Erlangen-Nuremberg, Germany) and R. Ottenjann. *Therapiewoche* 20(11):438-443, 1970.

5369 ACUTE ABDOMEN - CONSERVATIVE MEASURES. *(Ger.)* Drube, H. C. (Friedrich Ebert Hosp., Neumunster, Germany). *Therapiewoche* 20(11):446-452, 1970.

5370 TREATMENT OF ACUTE MASSIVE GASTROINTESTINAL HEMORRHAGE IN AN EXPERIMENTAL STUDY ON DOGS. *(E.)* Lekagul, S. (Washington Hosp. Ctr., D.C.). *Med Ann D C* 39(5):257-262, 1970.

5371 SHOULD ENTERITIS IN INFANTS BE TREATED WITH ANTIBIOTICS? *(Sw.)* Lindquist, B. (U. Hosp. Lund, Sweden) and G. Meeuwisse. *Lakartidningen* 67(supp 1):98-102, 1970.

5372 SURGICAL TREATMENT FOR ULCERATIVE AND CANCEROUS HEMORRHAGES AND FOR NON-ULCERATIVE HEMORRHAGES. *(Fr.)* Larrieu, H. (Hotel Dieu Hosp., Paris, France). *Ann Gastroent Hepat Hotel Dieu* 6(2):123-131, 1970.

5373 CHOLERA. *(Fr.)* Chevrel, B. (Paris, France). *Presse Med* 78(18):840, 1970.

5374 EXPERIMENTAL STUDIES ON CANDIDA INFECTIONS IN THE GASTROINTESTINAL TRACT. *(Jap.)* Okamoto, Y. (Nagoya City U. Med. Sch., Japan). *J Nagoya City Univ Med Ass* 20(4):936-956, 1970.

5375 POST-VAGOTOMY SYNDROMES. *(Fr.)* Alexiu, O. (Hosp. Babes, Bucarest, Romania), and B. Furtunescu. *Acta Gastroent Belg* 33(1):30-42, 1970.

5376 HEPATIC BLOOD FLOW DURING ANESTHESIA. *(E.)* Thorshauge, C. (Copenhagen, Denmark). *Acta Anaesth Scand* (supp. 37):205, 1970.

5377 GASTROINTESTINAL POLYPOSIS. *(Ger.)* Rosch, W. (Med. Clin. Polyclin. U. Erlangen-Nuremberg, Germany). *Fortschr Med* 88(9):372-373, 1970.

(Queensland Inst. Med. Res., Herston, Brisbane, Australia) and J. S. Welch. *Med J Aust* 57(8):349-356, 1970.

5378 PNEUMOPERITONEUM AND PAREITOGRAPHY: PRELIMINARY REPORT. *(E.)* Ishimoto, M. (Gunma U. Sch. Med., Maebashi, Japan), S. Saito, N. Toda, M. Matsumoto, K. Yamashina and T. Tobe. *Gunma J Med Sci* 17-18(1-4):49-58, 1969.

5379 THE SPECTRUM OF MESENTERIC INFARCTION. *(E.)* Pierce, G. E. (U. Washington Sch. Med., Seattle) and E. C. Brockenbrough. *Amer J Surg* 119(3):233-239, 1970.

5380 CLINICAL, PHARMACORADIOGRAPHIC, AND ELECTROMANOMETRIC INVESTIGATION OF A MODIFYING AGENT IN THE DIGESTIVE PROCESS. *(Fr.)* Szatmari, E. (Fac. Med. Budapest, Hungary), E. Zadori and L. Safrani. *J Med* 141(8-9):339-353, 1970.

5381 ZOLLINGER-ELLISON SYNDROME. *(Ger.)* Deucher, von F. (Canton Hosp. Aarau, Switzerland) and A. Widner. *Ther Umsch* 27(4):233-235, 1970.

5382 GASTRIC MUCOSAL BLOOD FLOW FOLLOWING DAMAGE BY ETHANOL, ACETIC ACID OR ASPIRIN. *(E.)* Augur, N. A., Jr. (Dept. Physiol., U. Michigan, Ann Arbor). *Gastroenterology* 58(3):311-320, 1970.

5383 DRUGS FOR DYSENTERY. *(E.)* (anon). *Brit Med J* 2(5700):36-37, 1970.

5384 ELECTROLYTE AND NUTRITION STATUS OF BANTU CHILDREN WITH GASTROENTERITIS. *(E.)* Prinsloo, J. G. (Dept. Pediat., U. Pretoria, South Africa) and H. Kruger. *S Afr Med J* 44(17):491-493, 1970.

5385 ELECTROLYTE CHANGES DURING THE FIRST SIX DAYS OF HOSPITALIZATION OF BANTU MALE INFANTS WITH GASTROENTERITIS. *(E.)* Prinsloo, J. G. (Dept. Pediat., U. Pretoria, South Africa), H. Kruger N. F. Laubscher and M. A. Botha. *S Afr Med J* 44(17):494-496, 1970.

5386 HEREDITARY HEMORRHAGIC TELANGIECTASIA LOCALIZED TO THE GASTROINTESTINAL TRACT. *(E.)* Jacobson, G. (U. Hosp., Uppsala, Sweden) and U. Krause. *Scand J Gastroent* 5(4):283-288, 1970.

5387 CONCEALED HEMORRHAGE INTO THE PSOAS SHEATH A VARIETY OF SILENT ABDOMINAL APOPLEXY. *(E* Dawson-Butterworth, K. (St. Mary's Hosp., Isle of Wight, England). *Practitioner* 204(1223):691-693, 1970.

5388 CADMIUM ENTEROPATHY, RENAL OSTEOMALACIA ("ITAI ITAI" DISEASE IN JAPAN). *(E.)* Murata, I. (Toyama Chuo Hosp., Toyama, Japan), T. Hirono, Y. Saeki and S. Nakagawa. *Bull Soc Int Chir* 29(1):34-42, 1970.

5389 SUPPORTIVE THERAPY IN PERITONITIS. *(E.)* Balch, H. H. (Georgetown U. Med. Ctr., Washington, D.C.). *Amer Surg* 36(5):290-295, 1970.

5390 ABDOMINAL TRAUMA. *(E.)* Williams, R. C. (no affil) and G. M. Thomas. *U Toronto Med J* 47(1):37-40, 1970.

5391 HEREDITARY HEMORRHAGIC TELANGIECTASIA—A CLINCAL AND ENDOSCOPIC STUDY. *(E.)* Sanowski, R. A. (VA Hosp., Phoenix, Ariz.). *Gastroint Endosc* 16(4):224-226, 1970.

5392 DIFFUSE GASTROINTESTINAL LYMPHOSARCOMA. *(E.)* Grossman, E. (New York Hosp. Cornell Med Ctr., New York) and S. J. Winawer. *Gastroint Endosc* 16(4):202-205, 1970.

5393 GASTROENTERITIS IN AUSTRALIA CAUSED BY A MARINE VIBRIO. *(E.)* Battey, Y. M. (Lab. Microbiol. Path., Brisbane, Australia), R. B. Wallace, B. C. Allan and B. M. Keeffe. *Med J Aust* 57(9): 430-433, 1970.

5394 ARYSULFATASE AND β-GLUCURONIDASE ACTIVITY IN SERUM IN KWASHIORKOR. *(E.)* Begum, A. (Christian Med. Coll. Hosp., Vellore, India) and T. R. Ittyerah. *Clin Chim Acta* 28(2):263-268, 1970.

5395 PRIMARY DISSECTING ANEURYSM OF THE HEPATIC ARTERY. *(E.)* Contreras Guerro, E. (Presbyterian U. Hosp., Pittsburgh, Pa.). *Arch Path* 89(6):569-573, 1970.

5396 RESPONSE OF LIGATED INTESTINAL LOOPS IN LAMBS TO AN ENTEROPATHOGENIC FACTOR OF *CLOSTRIDIUM PERFRINGENS* TYPE A. *(E.)* Hauschild, A. H. W. (Res. Lab. Food Drug Directorate, Dept. Nat. Hlth, Welfare, Ottawa, Canada), L. Niilo and W. J. Dorward. *Canad J Microbiol* 16(5):339-343, 1970.

- P:Absorp (4777)
- P:Motil (4792)
- P:Gen (4884)
- Diagproc (4904)(4909)(4911)(4914)(4919)(4920)(4921)(4931)(4939)(4947)(4949)(4953)(4954)
- D:Esoph (4967)
- D:Stomduo (4981)(4994)(4997)(5005)(5007)(5011)(5016)(5018)
- D:Stomduo:Peptulc (5034)
- D:S.Intest (5043)(5057)(5064)
- D:S.Intest:Regent (5070)
- D:S.Intest:Malabs (5077)(5078)(5080)(5084)(5088)
- D:L.Intest (5092)(5094)(5097)(5100)(5111)
- D:Pancreas (5138)(5145)
- D:Pancreas:Pancreat (5159)(5160)
- D:Livbil (5168)(5185)(5187)(5188)(5189)(5193)(5194)(5204)(5206)(5209)(5214)(5217)
- D:Livbil:A.Nonv.Hep (5226)(5230)(5233)(5250)
- D:Livbil:A.V.Hep (5269)(5270)
- D:Livbil:C.Hep (5275)
- D:Livbil:Cirrh (5283)(5285)(5286)(5287)(5288)(5290)(5291)(5292)(5296)
- D:Gen:Parasit (5321)(5325)(5326)

GENERAL

Parasitology

5397 NON-SUPPURATIVE HEPATITIS IN AMEBIASIS. *(Fr.)* Doxiadis, T. (Athens, Greece) and . Moschoutis. *Ann Gastroent Hepat Hotel Dieu* 6(2): 11-121, 1970.

The effect of amebiasis on the liver was investigated y radiography with the object of establishing a reliable method for the diagnosis of liver involvement n this disease. The radiography was taken in the patient's upright position after a full inspiration on a 36 x 43 plate. Of 10,453 patients examined by this method, 1735 (16.6%) revealed a non-suppurative hepatitis, with amebiasis the causative factor in 940 (9%) of these patients. The characteristics of this was raised in 77.5% of the cases (over 100U), and returned to normal in the same cases that showed a diminution in liver volume after treatment with anti-amebiasis medication (emetine or chloroquine). Thus, the combination of radiography with the ornithine were: a homogeneous density of the liver shadow and of the spleen; a marked elevation of the right hemidiaphragm; and a more extended shadow of the liver in the lower portion than is found in normals. A subsequent study in 100 normal subjects and 142 patients included liver function testing and parasitological examinations in addition to radiography. The biochemical tests included flocculations, transaminases, bilirubin, BSP, and ornithine carbamyl transferase. All these tests were negative except for the last, which carbamyl transferase test, together with a clinical test based on diuresis after treatment, are of important diagnostic value in non-suppurative hepatitis in amebiasis.

5398 POINTS OF CLINICAL IMPORTANCE IN AMEBIASIS, LEISHMANIASIS AND TRYPANOSOMIASIS. *(E.)* Walters, J. (no affil). *Trans Roy Soc Trop Med Hyg* 64(2):220-222, 1970.

5399 ASCARID ABSCESS OF THE LIVER. *(E.)* James, T. (Pinelanos, Cape Province, South Africa). *Med Proc* 16(8):127-130, 1970.

5400 THE IMPORTANCE OF BILIARY-CYSTIC COMMUNICATIONS IN SURGERY FOR HEPATIC HYDATIDOSIS. *(E.)* Beltran de Heredia, J. (Dept. Surg., U. Valladolid, Spain) and T. Sanz Sanz. *Int Surg* 53(6): 393-403, 1970.

5401 THE TREATMENT OF HYDATID CYSTS OF THE LIVER WHICH ARE OPEN TO THE BILIARY TRACT. *(Fr.)* Goinard, P. (Lyon, France), G. Pelissier, R. Streichenberger, B. Chavent and J. Bomel. *Lyon Chir* 66(1):52-53, 1970.

5402 BILIARY TYPE HYDATID CYST IN THE RIGHT LOBE OF THE LIVER (LAPAROSCOPY, GAMMAGRAPHY, SELECTIVE ARTERIOGRAPHY). *(Fr.)* Crismer, R. (Liege, Belgium), J. Naome, M. Delforge, A. Van De Berg, F. Lefebvre and C. Rogister. *Rev Med Liege* 25(1):10-14, 1970.

5403 CORRELATION OF CLINICAL, PARASITOLOGICAL, AND SEROLOGICAL DATA OF INDIVIDUALS INFECTED WITH *ENTAMEBA HISTOLYTICA*. *(E.)* Kotcher, E. (Louisiana St. U. Med. Ctr., Shreveport), M. Miranda and V. Garcia De Salgado. *Gastroenterology* 58(3): 388-391, 1970.

5404 CIRCADIAN MIGRATION OF *HYMENOLEPIS* (CESTODA) IN THE INTESTINE: I. OBSERVATIONS ON *H. DIMINUTA* IN THE RAT. *(E.)* Chappell, L. H. (Rice U., Houston, Tex.), H. P. Arai, S. C. Dike and C. P. Read. *Comp Biochem Physiol* 34(1):31-46, 1970.

5405 COEXISTENCE OF CONGENERIC SPECIES OF HELIGMOSOME NEMATODES IN THE INTESTINE OF AFRICAN RODENTS. *(Fr.)* Durette-Desset, M. C. (Museum Natural Sci., Paris, France). *C R Acad Sci* 270(19):2355-2358, 1970.

5406 THERAPEUTIC APPRAISAL OF THE ASSOCIATION IODOQUINOLINE + ACETAMIDE + MONDRAL IN INTESTINAL EUBIOTICS. *(Por.)* Machado, J. O. (Dept. Parasitol., U. Gama Filho, Brazil) and A. L. De Pinho. *Hospital* 77(1):283-291, 1970.

5407 ECHINOCOCCOSIS. *(Ger.)* Zimmerli, W. (Winterthur Canton Hosp., Switzerland). *Ther Umsch* 27(4):236-242, 1970.

5408 NEMATOCIDE AND ANTHELMINTHIC ACTION OF NEW AMIDES DERIVED FROM 3,4,5-TRICHLOROTHIOPHENE-2-CARBOXYLIC ACID. *(Fr.)* Pillon, D. (Ctr. Res. Antiparasite, Dargoire, Lyon, France), S. Trinh and R. Cavier. *Chim Ther* 5(1):32-40, 1970.

o Diagproc (4887)(4889)(4891)(4907)(4908)(4934) (4946)
o D:S.Intest:Malabs (5082)
o D:Gen (5377)

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE

Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON

Cancer, Polyps, Radiological Detection (0188)*

RECTUM

Cancer, Polyps, Precancerous (0188)*

CANCER

Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS

Radiology, Cancer, Large Intestine (0188)*

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

ABDALAHOUI, A.
4984
ABE, H.
4819*
ACCORDI, V.
5051
ADAMS, H.D.
4928
ADAMSONS, R.
5080
ADIGA, K.R.
5308
AHRENS, E.H., JR.
4785
AISSAOUI, A.
4993
ALAGILLE, D.
5190, 5218, 5327
ALARY, R.
5354
ALAVI, S.M.
5098
ALBRECHT, R.
5231
ALEXIU, O.
5375
ALFSEN, A.
4738
ALI-KHAN, M.Y.
4821*
ALLAN, B.C.
5393
ALLIFZ, J.
5182
ALVARES, A.P.
4858
AMDRUP, E.
5030
AMEND, H.
5164*
AMIN, P.B.
5316
ANDERSEN, M.N.
4840*
ANDERSON, F.L.
5077
ANONYMOUS
5383
AOUSTIN, J.
4984
APOIL, A.
5216
ARAI, H.P.
5404
ARATANGY, L.R.
5032
ARCHER, J.M.
4770
ARIMORI, M.
4789*
ARIYAMA, K.
4826*
ARMSTRONG, D.G.
4877
ASCHRAF, S.C.
5106
ASSOUD, I.
5097
ATTEBA, S.
5231
AUDRETSCH, J.J.
5168*, 5249
AUERBACH, M.
5144
AUFFRAY, P.
5188
AUGIER, D.
4812
AUGUR, N.A., JR.
5382
AULIAC, P.
4707*
AUNE, S.
4758, 4765*
AVENI, F.
4987
AW, S.E.
5157
AYARI, H.
4934
AZER, M.S.
5070
AZZOPARDI, O.
4936
BABALA, J.
5073*
BABB, R.R.
5315
BACCHIN, P.
4832*
BACCHINI, G.
4905
BACQUES, C.
4885
BAGLIN, M.
5159
BAINTNER, K., JR.
4730
BAKER, H.
5242
BAKER, T.A.
4871*
BAKK, Y.W.
4889*
BALCH, H.H.
5389
BALEA, T.
5230
BALIS, M.E.
4692*
BANKS, P.A.
5360
BAO, O.
5183
BAR, W.
5064
BARBIER, M.
5121
BARBIER, P.
5174*
BARGE, J.
5187
BARKHAN, P.
4757*
BARNABEI, O.
4842*
BARRETT, A.J.
4717
BARSACCHI, R.
4719
BARTA, K.
5132
BARTHELEMY-FRENEAUX, C
4854
BARTHOLOMEW, C.
5158
BARTSOKAS, S.K.
5313
BASCHET, C.
5079
BASS, P.
4793*, 4801*
BATCHELDER, E.J.
4881
BASTIAN, R.
5278*
BASTIDE, J.
5225
BASTIDE, P.
5225
BATTEY, Y.M.
5393
BATTISTINI, C.
4905
BAUDISCH, E.
5015
BAUDRY, G.
5148
BAUMGARTNER, R.
4938
BAXTER, J.D.
5170*
BEATHARD, G.
5243
BEATO, M.
4710*
BEAUGENDRE, F.
5261
BEAUREGARD, H.
5291
BECKER, C.
5041
BECKER, H.W.
5041
BECKER, K.
5074*
BEDUHN, D.
4949
BEECHER, G.R.
4712*
BEGUM, A.
5394
BEHRINGER, G.E.
4915
BELBER, H.
4926
BELTRAN DE HEREDIA,
5400
BEMAN, F.M.
4996
BENINI, L.
5104
BENNETT, G.
4704*

BENNETT, R.
4792*
BENO, I.
5073*
BENOIST, J.P.
4985
BENOZIO, M.
4835*, 4851, 4852,
4855
BENSAHEL, H.
5058
BENYSEK, L.
5130, 5132
BENZAKEIN, F.
4783
BERENI, J.
5260
BEREZNEY, R.
4695*, 4731
BERGER, H.J.
5140
BERMER, A.
5355
BERNARD, J.
5335
BERNARD, P.F.
5079
BERNDT, H.
5088
BERNDT, J.
4861
BERNIER, J.
5291
BERRY, L.J.
4714
BERTHAUX, N.
5174*
BERTHOLD, H.
5257
BERTIN, P.
5093
BERTOYE, A.
5213
BERTRAND, L.
5295
BERTRAND, P.
5123
BESANCON, G.
5125
BESSLER, W.
4948
BEYLOT, J.
5181
BEZON, A.
5260
BHAGAVAN, B.S.
5316
BIANCHI PORRO, G.
5282*
BIBER, B.
4868
BICKERS, W.M.
4971
BIEBUYCK, J.F.
5723*
BIGARD, M.A.
5284
BIGOT, R.
4906
BILLIERES, M.
4993
BINI, F.
4905
BISMUTH, C.
5232
BLAISDELL, F.W.
5238
BLANCKAERT, J.
5111
BLOMHOFF, J.P.
5301*
BLUM, H.
5341
BLUM, J.C.
5188
BLUMBERG, B.S.
5268
BOCKEL, R.
4950, 5298
BODE, C.
5278*
BODE, H.H.
5116
BOFINGER, H.
4963
BOGET, J.C.
5181
BOLOT, J.F.
5213
BOMEL, J.
5401
BONNAFOUS, R.
4886
BORDE, J.
5049, 5327
BORDIER, P.
5159
BORGERS, M.
4703*
BORGSTROM, B.
4815
BOTHA, M.A.
5385
BOUALI, B.
4958
BOUDERLIQUE, J.R.
5079
BOUHOU, E.
5126
BOUR, H.
4870
BOUREAU, M.
5013
BOURGEAT, A.
5038
BOURSE, R.
4812
BOUVET, D.
4763*
BOVERIS, A.A.
5241
BOVINA, C.
4827*
BOWES, K.L.
4866
BOYER, J.B.
5225
BRAASCH, J.W.
4899, 5179
BRACCHI, G.F.
4917
BRACHTEL, D.
5255*
BRACONNOT, P.
4874
BRAHME, F.
5068
BRAS, G.
5168*
BRENNAN, P.C.
4700*
BRENNOM, W.
5080
BRITTIN, G.M.
4755*
BROCKENBROUGH, E.C.
5379
BRODSKY, I.
5207
BRON, K.M.
4904
BROOKS, S.E.H.
5168*, 5249
BROUSTET, A.
5181
BROWN, A.C.
4803
BROWN, J.
5361, 5362, 5363
BROWN, R.F.
4831*
BRUNNER, E.
5342
BUCHANAN, W.W.
5206
BUCHEL, L.
4743, 4744
BUCKO, A.
4813, 5073*
BUFFAT, J.D.
5025
BUISSON, J.
5042
BUJOLD, R.
5103
BULL, A.B.
5223*
BUQUET, A.
5231
BUSCEMI, C.
5104
BUSSMANN, J.F.
5339
BUYS, J.
4698*
CABOCLO, J.L.F.
4772
CALAMAI, M.
5192
CALDARELLI, G.F.
4921
CALLAHAN, E.W., JR.
4825*
CALVEZ, J.Y.
5181

CAMATTE, R.
5182
CAMPBELL, A.
4989
CAMPBELL, P.
4976*
CANELLAKIS, E.S.
4693*, 4699*
CANELLAKIS, Z.N.
4693*, 4699*
CAPRON, A.
4907
CARDEN, A.B.G.
5091
CARLSON, G.M.
4793*
CARLSON, G.W.
4801
CAROLI, J.
5174*, 5216, 5252*,
5256*, 5258, 5267
CARROLL, A.
4718
CARVAIS, J.
5347
CARVALHO, N.
5032
CAVANAGH, J.E.
4997
CAVIER, R.
5408
CAVINA, E.
4921
CERF, M.
5346
CHABAL, J.
5022
CHABANON, P.
5094
CHAIMOFF, C.
5329
CHANDOR, S.
4991
CHAO, H.L.
4689*
CHAO, K.L.
4689*
CHAPPELL, J.B.
4843*
CHAPPELL, L.H.
5404
CHAPUY, A.
5038
CHAPUY, H.
5296
CHASSAGNON, C.
4974
CHASTEL, C.
5260
CHAUVEINC, L.
4909, 5048
CHAVENT, B.
5401
CHEEK, D.B.
4879*
CHEN, S.
5280*, 5281*
CHEN, W.T.
4871*
CHERIGIE, E.
4906
CHERUBIN, C.F.
5253*
CHEVREL, B.
5256*, 5373
CHEVREL, J.P.
5216
CHIHARA, T.
4988
CHIRIGOS, M.A.
4847
CHORVATHOVA, V.
5073*
CHOU, C.
4871*
CHOUDHRY, J.N.
4847
CHOW, K.W.
5082
CITTANOVA, N.
4738
CLARISSE, J.
5348
CLARKE, A.
4910
CLASSEN, M.
5127
CLOT, J.P.
5146, 5151, 5154
CLOT, P.
5142
COBRUN, R.J.
5303
CODE, C.F.
4789*
COHEN, M.I.
4711*
COMBES, B.
4754*
CONSTANTINESCU, S.P.
4705*
CONTRERAS GUERRO, E.
5395
COOKE, R.A.
5219
COON, M.J.
4716
COOPER, W.K.
4712*
CORATELLI, P.
4725
CORBETT, W.E.N.
5072*
CORNBLATH, M.
4689*
CORNELIUS, C.E.
4781, 5205
CORNIL, A.
5160
CORRADINO, R.A.
4775
CORSI, C.
5033
COSTE, T.
5185
COULOIGNER, J.
5042
COUTURE, J.
5103
COUTURIER, D.
4786*
COUTURIER-TURPIN, M.H.
4786*
COYNE, V.F.
5268
CRAFT, I.L.
4753
CRANE, F.L.
4695*, 4731
CREMIN, B.J.
5119
CRISMER, R.
5402
CRONHOLM, T.
5254*
CURRAN, P.F.
4771
CUTHBERTSON, A.M.
5118
CZEMBIREK, H.
4949
CZITOBER, H.
5215
DARNEY, J.M.
4871*
DAIDO, R.
4979
DAJANI, R.M.
5235
DALMARK, M.
4800
DAN, V.
5349
DANCIS, J.
4857
DANDRIFOSSE, G.
4816
DANIEL, P.
5062
DARNIS, F.
5187, 5191
DART, G.
5071*
DA SILVEIRA, M.J.X.
5300*
DAVID, D.
4734
DAVIS, P.S.
5071*
DAVIS, R.B.
5361, 5362, 5363
DAWE, D.L.
5361, 5362, 5363
DAWSON, R.M.C.
4820*
DAWSON-BUTTERWORTH, K
5387
DEBIEC, T.
4874
DEBRAY, C.
4786*
DEBROISE, A.
5349
DEBRY, G.
5227

DECARLI, L.M.
5236
DECHERD, J.
5243
DEDDISH, M.R.
5112
DE GIACOMINI, P.
5261
DE GRAEF, J.
5355
DE GROOTE, J.
5249
DEIMER, E.
4940
DE LAGAUSIE, P.
5150
DELALOYE, B.
4951
DE LANE, L.R.
5137*
DELFANNE, M.L.
4739
DELFORGE, M.
5402
DELHAY, J.
5111
DELL'ANNA, B.
4905
DELLER, D.J.
5071*
DELL'OSSO, A.
5304
DELORME, D.
5014
DELOYERS, L.
5355
DEMBSKI, J.C.
4922
DEMIGNEUX, H.
5336
DE MONTGOLFIER, R.
5106, 5296
DENK, H.
5215
DENKHAUS, W.
4715
DENNIS, C.
5080
DE PINHO, A.L.
5406
DERACHE, R.
4780, 5233
DERASSE, G.
5061, 5334, 5337
DERUMEZ, P.
4739
DESAINT-BLANQUAT, G.
4780
DESCHENES, L.
5103
DESGREZ, P.
4854
DE SILVA, K.L.
5078
DESPOPOULOS, A.
4762*, 4833*
DEUCHER, VON F.
5381
DEYSINE, M.
5308
DICK, W.C.
5206
DICKIE, J.
4925
DIETSCH, R.
5354
DIKE, S.C.
5404
DIMAKAKOS, P.B.
5155
DI MARIA, G.
5336
DINTSMAN, M.
4891*, 5329
D'IORIO, A.
4691*
DITTRICH, M.
5011
DJACZENKO, W.
5169*, 5176*
DJAHANGUIRI, B.
5021*
DOBBINS, W.O.
4713*, 5087
DOHNALEK, J.
5122*
DOMBROWSKI, H.
4939, 5066
DOMENICONI, R.
4987
DOMMERGUES, J.P.
5327
DONAHUE, J.D.
4708*
DONOVSKI, L.
4777
DOOMERNIK, L.
5057
DORWARD, W.J.
4884, 5396
DOWD, J.B.
4902
DOXIADIS, T.
5397*
DOYON, D.
4906
DRESSEL, H.
4895
DREZE, C.
5160
DRIANNO, J.C.
5148
DROR, Y.
4737
DROUIN, P.
5227
DRUBE, H.C.
5369
DUBARRY, J.J.
5199
DUBOST, C.
4975
DUBRISAY, J.
5217
DUCAS, J.
5366
DUCLERT, N.
5147
DUFAULT, C.
5291
DUNCAN, D.
5184
DUPLAY, H.
5017
DUPUY, J.P.
4962
DURAN, M.
5324
DURET, R.
5355
DURETTE-DESSET, M.C.
5405
DURST, J.
5092
DYBKAER, R.
4849
DYER, H.M.
5177*
EASLEY, G.W.
5070, 5113
EBERT, P.S.
4847
EDER, M.
5367
EDWARDS, R.G.
5071*
EICHEN, R.
4943
EINSEL, I.H.
5114
EISENBURG, J.
5279*
EISENSTADT, M.
5222*
EKLOF, O.
4920, 5134*
EMMRICH, J.
4898
ENGLEHART, G.
4888*
ENGLERT, E., JR.
4784
ENNIS, J.T.
5344
ENQUIST, I.F.
4764*
ENRIGHT, L.P.
4911
ERB, E.
5141
ERLANSON, C.
4815
ESEIMOKUMOH, H.S.
5095
ESPINASSE, P.
4874
ESSINGER, A.
4952
ETIENNE, M.
4869
EYSSELT, M.
5122*
FAILLY, C.
4740

FALKSON, G.
5136*
FALKSON, H.C.
5136*
FAUSTO, N.
4826*
FAUVERT, R.
5270
FEHR, A.M.
5139
FEIFEL, G.
5036
FELICIOLI, R.A.
4719
FELIX, M.H.
5356
FELLER, W.F.
5056
FERGUSON, D.J.
4706*
FEROLDI, J.
4746, 5014
FERRARIS, A.
5324
FERRERO, P.M.
5141
FICHARDT, T.
5136*
FINCATO, M.
5033
FINLAYSON, N.D.C.
5075*
FIRFER, R.
5117
FISCHER, M.
5290
FISH, J.C.
5137*
FISHLOCK, D.J.
4795*
FITZGERALD, P.J.
4701*
FLATMARK, A.
5283*
FLOCH, M.H.
5380
FOA, P.P.
4850
FONCIN, J.F.
5217
FONTAINE, J.L.
4869
FONTANA, V.J.
5253*
FOREST, M.
5346
FOSTER, J.W.
5361, 5362, 5363
FOURATI, M.
4934
FREDA, C.E.
4724
FREIRE, E.C.DAS.
5305
FREJAVILLE, J.P.
5232
FRENCH, S.W.
5221*
FREXINOS, J.
5195
FRICK, G.
5173*
FRIDRICH, R.
4888*
FRIEDLAND, G.W.
4968
FRIEDMAN, E.
4926
FROMANTIN, M.
5269
FROT-COUTAZ, J.
4742
FRUIT, J.
4907
FRY, R.J.M.
4700*
FUCHS, T.
5212
FUJITA, T.
4749
FUNADA, M.
4979
FUNG, W.P.
5157
FUNK, L.K.
4695*, 4731
FURSTENBERG, H.S.
5339
FURTUNESCU, B.
5375
GABELLA, G.
4696*
GABUZDA, G.J.
5299
GAGNON, R.
5293
GAIJAARD, H.
4698*
GAILLARD, D.
5233
GAJARAJ, A.
4904
GALIAN, A.
5031, 5105
GALLINA, M.F.
4947
GAMO, M.
4720
GANCEVICI, G.
4705*
GANDHI, P.C.
5360
GANG, M.J.
4924
GARCIA DE SALGADO, V.
5403
GARNEAU, R.
5103, 5293
GARNER, C.W.
4817
GARTI, I.
4891*
GATSOU, P.
4887*
GAUDRAY, A.
5264
GAUTHIER, J.
5106
GAUTIER, M.
5190
GEFROY, M.
4741
GENEREUX, G.P.
5319
GENTIT, F.
5294
GEORGE, P.K.
5360
GERAMI, S.
5070, 5113
GEROLAMI, A.
5314
GHANDOUR-MNAYMNEH, L.
5235
GHERASIM, G.
4705*
GIACOBI, R.
5017
GIBEL, W.
5226
GIELEN, J.
4853
GIERUP, J.
5134*
GIESEN, J.
4698*
GILLET, M.
5007
GILLETTE, J.R.
4841*
GILLIES, M.
5124
GILMOUR, D.G.
4735
GIRALDI, L.
5051
GIRARD, M.
5123, 5354
GIVARC'H, M.
5200
GIVEN, F.T., JR.
4859
GJONE, E.
5167*
GJONE, E.
5301*
GLEASON, N.N.
4880
GLENN, F.
5317
GLOVER, E.L.
5277*
GOASGUEN, J.
5340
GOEBELL, H.
5278*
GOGGEL, K.H.
5262
GOINARD, P.
5401
GOLDSTEIN, L.I.
5240
GONAND, J.P.
5227

GONTICAS, S.
4887*
GOODMAN, H.M.
4883
GORDON, H.A.
4759*
GORRIZ, F.M.
4946
GOT, R.
4742
GOTTSCHALK, B.
5063
GOUDIE, R.B.
5206
GRABSKA, J.
5169*, 5176*
GRAEB, D.
4931
GRAM, T.E.
4841*
GRANET, E.
4729
GRASSI, G.
5304
GRAVELEAU, J.
5200
GRENAUDIER, J.L.
5035
GROLLMAN, S.
5277*
GRONWALL, R.R.
4781, 5205
GROSSE, H.
5039
GROSSMAN, E.
5392
GROTT, J.W.
4903
GROTT-SWIEZAWSKA, E.
4903
GROZINGER, K.H.
4941
GRUNDNER, H.G.
5012
GRUNDY, S.M.
4785
GRUNT, J.
4813
GRYNBLAT, A.
5263
GUBLER, R.
5139
GUILLEMANT, S.
4854
GUILLET, R.
5014
GUISARD, D.
5227
GUITI, N.
4787*
GUIVARCH, M.
4985
GUNN, A.
4795*
GUSTAFSSON, B.E.
4790*
GUTH, P.H.
4972
GUTMAN, Y.
4783
GUY-GRAND, B.
4870
GYERGYAY, F.
5083
HAAS, P.
5193
HADCHOUEL, P.
5216
HADDY, F.J.
4871*
HADNAGY, C.
5083
HAGLUND, W.M.
5137*
HALTER, F.
4808
HAMBURGER, J.
4777
HAMEL, J.Y.
5321
HAMMERLEIN, M.
4964, 4965
HAMMOU, S.
4993
HANEFFLD, M.
4896
HANKS, A.R.
4721
HANNYA, K.
5271
HANSEN, V.
5244
HARDCASTLE, J.D.
4804
HARDY, K.J.
4881, 5118
HARGROVE, R.L.
5253*
HARING, R.
5214
HARPER, A.E.
4818*
HARRISON, G.G.
5223*
HARRISON, R.C.
4866
HARTL, W.
5005
HARTROFT, W.S.
5250
HARTTE, U.
5365
HARTWICH, G.
5266
HASHIMOTO, K.
4788*
HAUSCHILD, A.H.W.
4884, 5396
HAUTON, J.
5314
HEATHCOTE, J.G.
4806*
HEBERER, G.
4957
HEBERT, S.
4741
HECHT, Y.
5174*
HEDENBERG, I.
4918
HEDNER, P.
4794*
HEIDEMA, J.
4718
HEIM, F.
5166*
HEIM, U.
5328
HEIMER, D.
4715
HELL, E.
5193
HENDREN, W.H.
5116
HENDRICH, F.
5131
HENNING, N.
5096
HERMAN, R.H.
4848
HERMANN, R.E.
4973
HERNANDEZ, C.
4900
HERRINGTON, J.L., JR.
5046
HERRMANN, R.P.
4910
HERSH, T.
5380
HERTZ, H.
4849
HEULLY, M.C.
5192
HEYNEN, U.
5197
HIGHMAN, B.
4721
HILL, J.R.
5109
HILLEMAND, B.
5343
HINKEL, G.K.
5063
HIPPE, E.
4811
HIRAMATSU, K.
4819*
HIRONO, T.
5388
HOCH, J.
4754*
HOCHMAN, R.
5080
HOFBAUER, K.
5214
HOFSTETTER, J.R.
5204
HOHENWALLNER, W.
4844*
HOLDSTOCK, D.J.
5090*
HOLMAN, U.
4722

HOLT, A.B.
4829*
HOLT, P.G.
4727
HOLTZMAN, J.L.
4841*
HONOLD, G.R.
4712*
HOROWITZ, M.S.
4880
HOUSSAINT, E.
4736
HUANG, W.Y.
4810
HUG, C.C., JR.
4793*, 4801
HUGHES, E.S.R.
4881, 5118
HUGHES, L.E.
5100
HUGON, J.S.
4703*
HUGUES, C.
5229
HUGUET, C.
4936
HUGUIER, M.
5150, 5152, 5153
HULE, V.
5131
HULSMANN, W.
5228
HUME, R.
4925
HUNTER, J.B.
5129
HUREZ, D.
5346
HURWITZ, M.B.
5209
HUSSAIN, S.A.
5000
HUSTON, R.L.
4712*
HUTTERER, F.
5222*
HUTZLER, J.
4857
HUTTERER, F.
4832*
HYAMS, L.
5102
ICHII, S.
4834*
ICHIKAWA, Y.
5271
IGARASHI, A.
4697*
IIZUKA, K.
4697*
IKKOS, D.
4887*
ILIESCU, G.
5178
IMAMURA, H.
4856
IMLER, M.
4950, 5286, 5298
IMMICH, H.
5212
IMONDI, A.P.
4692*
INGLESAKIS, J.A.
5017
INOGUCHI, K.
4991
IPATA, P.L.
4719
IRSIGLER, K.
5234
ISHIMOTO, M.
4897, 5009, 5010,
5320, 5378
ITTYERAH, T.R.
5394
IVANESKI, M.
5189
IVANYI, J.
5161
IZARN, R.
5022
JACOBSON, F.D.
4803
JACOBSON, G.
5386
JAGO, M.V.
5239
JAMES, T.
5399
JAMES, W.B.
4925
JANSEN, W.
5318
JAROSS, W.
4896
JAUBERT DE BEAUJEU, M.
4956
JEFFRIES, G.H.
5253*
JENKINS, M.D.
4690*
JENSEN, H.E.
5030
JERZY GLASS, G.B.
4792*
JEUNE, M.
5296
JEZYK, P.F.
4838*
JODAL, M.
4868
JOHNSON, B.C.
4737
JOHNSON, J.S.
4865
JOHNSON, R.K.
4708*
JONDORF, W.R.
4708*
JONES, C.R.
5078
JOSE, D.G.
5377
JOSSERAND, C.
5340
JOST, A.
5026
JUCKER, A.
4948
JUNGALWALA, F.B.
4820*
KADISH, U.
4891*
KAGNOFF, M.F.
4791*
KAHL, G.F.
4839*
KAHN, S.B.
5207
KAMOUN, A.
4934
KANO, M.
4979
KAPANDJI, M.
5322
KAPPELER, H.
4948
KASPER, H.
5143
KASUGAI, T.
4930, 4991
KATO, Y.
4856
KATZ, B.
5008
KAUFMAN, L.
4804
KAWABE, S.
5175*
KAZDALI, A.
4993
KEEFFE, B.M.
5393
KEENAN, T.W.
4695*
KEHOE, E.L.
4926
KEKOMAKI, M.
5211
KEMPTER, M.
5095
KENDALL, J.A.
4995
KERKHOVEN, P.
4808
KERMANI, M.H.
4787*
KERMAREC, K.J.
5017
KERN, E.
5060
KESSLER, F.
4977*
KHOO, O.T.
5157
KIESEWETTER, W.B.
4802
KIM, M.C.C.
5047
KIMURA, S.
4767
KIMURA,, T.
4749
KING, T.E.
4822*

KIRK, R.M.
5027
KIRSNER, J.B.
4890*
KITTLE, C.F.
5359
KLEIN, H.J.
5367
KLEINSMITH, L.J.
4718
KNIPPER, A.
4943
KOBAYASHI, K.
4726, 4991
KOBAYASHI, S.
4890*
KOCANDRLE, V.
5359
KOCH, W.
4943
KOENIG, C.
4751
KOFLER, E.
4861
KOHLER, G.
5018
KOHLER, J.J.
5007
KOHN, P.G.
4760*
KOIZUMI, H.
4927
KOIZUMI, T.
4819*
KOJECKY, Z.
5130, 5132
KOLDOVSKY, O.
4864*
KOLIG, G.
4941
KOMMERELL, B.
4932
KONIG, L.
5265
KOOLMAN, J.
4830*
KOPEC, Z.
4813
KORB, G.
5066
KOTCHER, E.
5403
KOTTMEIER, P.K.
5080
KOWLESSAR, O.D.
5085
KRASSNITZKY, O.
4945
KRATOCHWIL, A.
4892*
KRAUSE, U.
5386
KREBBER, K.
4861
KREBS, H.A.
4733
KREBS, J.S.
4878
KRESSMANN, P.
5106, 5123
KRISHNAN, P.S.
4728
KRIVINE, J.M.
5159
KRONBERGER, L.
5024
KROSEGK, G.
4981
KRUGER, H.
5384, 5385
KRYSPIN-EXNER, K.
5234
KUCHIBA, K.
4840*
KUFF, E.L.
5177*
KUHLMANN, N.
4993
KUHLMAYER, R.
5128
KUHN, H.A.
5255*
KUMAR, K.S.
4728
KUNKEL, B.
5262
KUNZ, O.
4977*
KUPFER, D.
4732
KURIHARA, H.
4916
KUTSCHERA, H.
5325
KYRLE, P.
5162
LAATIKAINEN, T.
4875
LACHAUD, J.C.
5340
LAFONT, H.
5314
LAGACHE, G.
5350, 5364
LAGERON, A.
5252*, 5259, 5267
LAMBERMONT, J.
5135*
LAMMEL, H.
5064
LAMONTAGNE, R.
5293
LAND, A.S.
5316
LANDAW, S.A.
4825*
LANDE, M.
5323
LANDI, L.
4827*
LANDRISCINA, C.
4725
LANE, D.G.
5044
LANGE, O.K.
5165*
LANZ, R.
5328
LANZA, F.L.
4912, 5237
LAOR, J.
4891*
LAPEGUE, A.
4942
LARCAN, A.
5192
LARENA, A.
4957
LARMI, T.K.I.
4944
LAROCHE, C.
5346
LARRIEU, H.
5372
LASFARGUES, G.
4869
LASZLO, J.
4690*
LAUBSCHER, N.F.
5385
LAUMONIER, R.
5264
LAUNOIS, B.
5186
LAURENT, J.
5284
LAVERDANT, C.
5269
LAVOIE, P.
5291
LEAMING, R.H.
5112
LEBAS, F.
4879
LE BODIC, M.F.
5148
LECH, J. J.
4846
LECOMTE, P.
5017
LEDOUARIN, N.
4736
LEDOUX-LEBARD, G.
5023
LEE, R.H.
5315
LEEVY, C.M.
5242
LEFEBVRE, F.
5402
LEFRANC, J.
5042
LEGG, P.G.
4747
LE HENAND, F.
5079
LEININGER, B.J.
4970
LEINWEBER, B.
5255*
LEJEUNE, L.P.
5321
LEKAGUL, S.
5370

LEMAIGRE, G.
5346
LEMAITRE, G.
5348
LENART, I.F.
5203
LENG-PAO, MAM-CHHFM
5289
LEONG, G.F.
4878
LEONHARDT, L.
4872*
LE QUINTREC, Y.
4942
LERNER, J.
4776
LESAGE, R.
5293
LESCH, R.
4969
LESNAW, J.A.
4750
LEUNG, F.Y.T.
4723, 4748
LEVASSEUR, J.C.
4994
LEVINE, W.G.
4860
LEVINSON, R.A.
4784
LEVITAN, R.
4756*, 5069
LEVY, J.
4743, 4744
LEWALLE, L.
5160
LEWITUS, Z.
4891*
L'HERMINE, C.
5348
LIBERTI, J.P.
4838*
LICHTENSTEIN, H.
5275
LIEBER, A.
5098, 5129
LIEBER, C.S.
5236
LIEBERMAN, I.
4831*
LIFHR, H.
5255*
LIM, L.
4693*, 4699*
LINDQUIST, B.
5371
LINDSAY, J.W.
4995
LINSCHEER, W.G.
5081
LIPITZ, L.
5240
LIPKIN, M.
4692*
LOCHER, J.
4888*
LOER, J.N.
4824*
LOESCHKE, K.
4759*
LOEWE, K.R.
5339
LOHS, K.
5226
LOMBARD-PLATET, R.
5123
LONDON, W.T.
5268
LONGMAN, E.S.
4838*
LOPEZ RODRIGUEZ, F.
4993
LORENZ, W.
5036
LORRIAUX, A.
5294
LORTAT-JACOB, J.L.
5079
LOUISOT, P.
4742
LOUW, J.H.
5119
LU, A.Y.H.
4716
LUBIN, E.
4891*
LUDERS, D.
5220
LUDWIG, J.
5072*
LUEDERS, K.K.
5177*
LUKF, C.G.
5071*
LUNDGREN, O.
4868
LUTHARDT, T.
5257
MACALLISTER, R.
4976*
MACHADO, J.O.
5406
MACLEOD, J.H.
5108
MACPHERSON, R.I.
4914
MADDOCKS, I.
5219
MAENPAA, P.H.
5211
MAESTRACCI, D.
4703*
MAFART, Y.
5340
MAGANINI, R.J.
5117
MAHADEVAN, V.
5280*, 5281*
MAHOUDEAU, D.
5217
MAILLARD, J.N.
5150, 5152, 5153,
5186, 5297
MAILLARD, J.P.
5348
MAIOLO, A.T.
5282*
MAIZEL, H.
5087
MALLET-GUY, P.
4746, 4874
MALLFT-GUY, Y.
4746
MANCHESTER, K.L.
4745
MANCHON, P.
5231
MANGAN, F.R.
4821*
MANN, C.V.
4804
MANNERING, G.J.
4858
MANOWITZ, P.
4735
MANTECON, R.L.
4946
MARCHE, C.
4777, 5229, 5230,
5264, 5346
MARCHE, J.
5229, 5230
MARCHETTI, M.
4827*
MARCHI, N.
4741
MARGARFTTEN, W.
5238
MARION, P.
5213
MARKGRAF, E.
5015
MARKI, H.H.
4938
MARQUAND, J.
4985
MARSH, W.H.
4701*
MARTIN, H.F.
4862
MARUBBIO, A.T.
5219
MASON, H.S.
4822*
MASSON-BORAS, F.
4854
MATEEV, B.
4894*
MATHIS, P.
5149
MATSUI, E.
4856
MATSUMOTO, M.
5009, 5010, 5320,
5378
MAUER, I.
5069
MAWER, G.E.
4769
MAX, E.
4899
MAYES, G.R.
4926
MAZZARELLA, L.
4725

MCBEE, J.W.
4990
MCBROOM, G.L.
4953
MCCRAY, R.S.
4924
MCKENZIE, K.
5168*
MCNAMARA, H.
4711*
MCSHERRY, C.K.
5317
MEDICI, A.
5306
MEEUWISSE, G.
5371
MEEUWISSE, G.W.
5084
MEHNERT, W.H.
5228
MEILHAC, B.
4982
MELGAR, A.
4929
MELLIERE, D.
5145
MELLITS, E.D.
4829*
MENDELOFF, J.
5003
MENDOZA, C.B., JR.
5070, 5113
MENICK, F.
5047
MENICK, F.J.
5047
MERILLON, H.
5346
MERSSERCHMITT, J.
5294
MERTZ, D.P.
4761*, 4805*
MESSMER, K.
5338
METAYER, J.
5264
MIA, A.S.
5205
MICHELETTI, J.
5172*
MIDTVEDT, T.
4790*
MIKAELOFF, P.
5213
MILDSCHUH, W.
5234
MILLER, C.G.
5168*
MILLER, H.H.
4708*
MILLER, W.A.
5099
MILLMAN, I.
5268
MINERVINI, R.
4921
MIRANDA, M.
5403
MIRAVET, L.
5159
MISIEWICZ, J.J.
5090*
MISTRY, S.P.
4836*
MITCHELL, A.V.
5344
MITJAVILA, S.
4780, 5233
MITZNEGG, P.
5166*
MIYAWAKI, H.
4988
MIZON, J.P.
5294
MIZUNO, T.
4697*
MODAI, M.
5273
MOLIMARD, R.
4835*, 4851, 4852
MOLLARD, P.
4956
MONDON, C.E.
4837*
MONGES, H.
4796*
MONGUIDI, G.
5051
MONOD-BROCA, P.
4901, 5351
MONSON, R.R.
5029
MONTEIL, R.
5347
MONTZ, R.
5251*
MOORE, G.T.
4880
MORALES, R.
5184
MOREAU, C.
5187
MOREAU, J.F.
5023
MORETTI, G.
5181
MORGENTHALER, F.
5198
MORIWAKI, K.
4850
MORRISSEY, J.F.
4927
MORSE, W.H.
4954
MORTIMORE, G.E.
4837*
MOSCHINSKI, D.
4955
MOSCHOUTIS, N.
5397*
MOSSE, A.
5187
MOSSINI, A.
5051
MOUCHET, A.
4985
MOUTAFFIAN, J.J.
5016
MUELLER, K.
5333
MULLER, E.
4955
MURAT, J.
5014
MURATA, I.
5388
NADAI, T.
4778
NAFRADI, J.
4807*
NAGELE, E.
5012
NAHUM, H.
5187
NAKAGAWA, S.
5388
NAKAJIMA, N.
4979
NAKAJIMA, S.
4809
NAKAMURA, M.
4979
NAKAMURA, T.
5006
NAKANISHI, M.
4856
NAOME, J.
5402
NARAYAN, A.S.
5358
NASU, T.
5043
NAUDIN, G.
5292
NAVATEL
5016
NAVON, R.S.
4838*
NEAL, G.E.
4821*
NELSEN, T.S.
4911
NELSON, K.M.
4776
NELSON, R.S.
4912, 5237
NERSTROM, B.
5086
NEWEL, K.W.
5357
NEWEY, H.
4760*
NEWTON, L.H.
4880
NIILO, L.
4884, 5396
NIETZSCH, W.
4963
NILSSON, L.H.
5076
NILSSON, T.
5068
NINI, N.
5097

NINI, W.
5097
NIOSI, P.
5240
NISHI, K.
4778
NISHIDA, T.
5043
NIXON, S.E.
4769
NOCTON, F.
5190
NOHARA, H.
4697*
NOIR, B.A.
5241
NORDENSTRAND, A.
4920
NORIKI, H.
5271
NORMAN, A.
5254*
NORTH, L.B.
4990
NORTHRUP, S.
5000
NORUM, K.R.
5167*
NUKI, G.
5206
NUNES, G.
5238
NUSSBAUMER, A.
5328
O'BRIEN, G.F.
5210
ODIEVRE, M.
5190
OEHLERT, W.
5326
OISHI, R.H.
4992
OKAMOTO, Y.
5374
O'KEEFE, D.D.
5107
OKPAKO, D.T.
5053
OLATUNBOSUN, D.
5072*
OLBRICH, E.
5325
OLDHAM, S.
4822*
OLIVER, I.T.
4727
OLIVIER, C.
5336
OLMER, J.
5016
OMATA, S.
4834*
ONISHI, T.
4702*
OPOLON, P.
5216
ORCEL, L.
5263
OROZCO, A.
4782
ORRENIUS, S.
4732
OSHIMA, H.
4923
OSTROVERKHOV, G.
5312
OTTENI, J.C.
5007
OTTENJANN, R.
5368
OTTOLENGHI, C.
4842*
OVE, P.
4690*
OVECKA, M.
4813
OZER, A.
4797*
PAI, S.T.
4889*
PAILLET, R.
5340
PANTIN, R.
5347
PAOLAGGI, A.
4908
PAPA, S.
4725
PAPADIMITRIOU, J.M.
4770
PAPAIOANNOU, A.N.
5313
PARAF, A.
4851, 4855, 5185
PARKS, R.E., JR.
4862
PARSA, I.
4701*
PASCAL, J.P.
4935
PASCAUD, A.
4707*
PASCAUD, M.
4707*
PASQUALI, P.
4827*
PATEL, M.S.
4836*
PATTERSON, H.C.
5208
PAULY, H.
5166*
PEBAY-PEYROULA, F.
5232
PECK, O.C.
5315
PEDERSEN, S.A.
5019*
PELISSIER, G.
5401
PELLEGRINO, E.D.
5077
PELLERIN, D.
5093
PELTIER, L.
5121
PERAINO, C.
4700*
PERLMUTTER, A.
4867
PEROL, C.
5031
PEROL, R.
5200
PERRET, J.P.
4885
PERROT, J.
5288
PERROTIN, J.
5031, 5105, 5300*
PESENDORFER, F.
4945
PESSEREAU, G.
5347
PETASNICK, J.
5359
PETER, B.
4950
PETER, M.A.
5328
PETKOV, G.
5207
PETTAVEL, J.
5198
PETTY, A.M.
5003
PFEFFER, F.
4877
PFEIFER, K.
5228
PFEIFFER, C.J.
5020*
PFLIEDERER, A.
5092
PHILIBERT, H.
5260
PHILLIPS, J.C.
4995
PHILLIPS, J.F.
5052
PHILLIPS, L.D.
5085
PHILLIPS, L.J.
4714
PHILLIPS, R.F.
5196
PHILPOT, J.
5102
PICARD, J.
5310
PICK, A.I.
4891*
PICOT, A.
4962
PIERCE, G.F.
5379
PILLON, D.
5408
PIPER, D.W.
4910
PIRK, F.
4799
PITZLER, K.
5015

PLANCE, N.E.
5314
PLAUCHU, M.
5296
POILLEUX, F.
5322
POILLEUX, J.
5142
POIRIER, J.P.
5352
POLASKOVA, A.
5122*
POLCAKOVA, J.
5122*
POLONSKY, L.
4972
POPPE, W.
4805*
PORTA, E.A.
5250
POSER, G.
4805*
POTEL, J.
4999
POTET, F.
5147
POTTER, C.
4975
POUILLART, P.
5217
POUSTI, A.
5021*
PRAGER, W.
4986
PREUSSNER, S.
5173*
PRINCE, A.M.
5253*
PRINSLOO, J.G.
5384, 5385
PROLLA, J.C.
4890*
PUENTE, J.L.
4999
PUESTOW, C.B.
4970
PUIG, J.F.E.
5293
PUIG, R.F.DE E.
5293
PURVES, J.K.B.
5108
PUVION, E.
4739
QUAGLIARIELLO, E.
4725
RACEVSKIS, J.
4735
RAIJMAN, L.
4733
RAISFELD, I.H.
4832*
RAIVIO, K.O.
5211
RAMACHANDRAN, K.
5360
RAMBOUD, J.C.
5159

RAMSER, O.
5328
RANDALL, H.T.
5171*
RAO, N.R.
5358
RAUBER, G.
5192
RAUTUREAU, J.
5185
RAUTUREAU, M.
5159, 5256*
RAVAL, D.
4755*
RAYNAUD, P.
4886
READ, C.P.
5404
RECHATIN, J.
4974
REDDI, A.S.
4845
REHNER, M.
4943
REICHMANN, M.E.
4750
REID-SMITH, A.
4913
REIF, W.
5164*
REIMUND, P.
5105
REINICKE, V.
5272
REISSMANN, G.
5202
REMINE, W.H.
5109
RENAUD, F.
4993
RENSON, J.
4853
RETTENBACHER, F.
5287
RETTORI, R.
5336
REUBER, M.D.
5277*
REVILLE, P.
5341
REY, J.
4773, 4863*
REYNOLDS, H.Y.
4865
REYNOLDS, WALKER, JR.
5120
RICHTER, E.
5255*
RICHTER, H.
4983, 5092
RICOUR, C.
4863*
RIECKEN, F.O.
4939
RIGAMONTI, P.P.
5004, 5306
RIGDON, R.H.
5184

RIGHETTI, A.
4756*
RO, J.S.
5283*
ROBAYE, B.
4853
ROBERT, P.
5289
ROBERTSON, D.
4925
ROBERTSON, T.A.
4770
ROBINSON, B.H.
4843*
ROCHEMONT, S.
5247
ROCKMAN, S.E.
4927
RODING, H.
5034
ROGISTER, C.
5402
ROMANIUK, P.A.
4964, 4965
ROSCH, W.
5065
ROSE, T.F.
5330
ROSENBERG, D.
5032
ROSS, E.M.
5207
ROTH, F.J.
4949
ROTH, J.L.A.
5020*
ROTT, H.D.
5138
ROTTE, K.H.
4894*
ROTTER, S.
5255*
ROUSSEAU, J.
4962
ROWE, D.J.F.
5156
ROWLANDS, F.N.
5090*
ROZE, C.
4786*
ROZENBERG, H.
4909, 5048
RUBBO, S.D.
4881
RUBIN, E.
5222*
RUDDON, B.W.
4793*
RUDDON, R.W.
4801
RUEFF, B.
5232, 5297
RUFFIN, J.M.
5087
RUHL, R.
5059
RUSSELL, J.G.B.
4873

RUSSELL, R.I.
4976*
RUVIDIC, R.
5189
RYAN, P.
5101
SAADEH, F.
5235
SABEL, M.
5166*
SABELLI, H.C.
4782
SAEKI, Y.
5388
SAGLIER, G.
4985
SAGNET, H.
5340
SAILER, R.
4955
SAINT-LAURENT, P.M.
5159
SAITO, K.
4720
SAITO, S.
5009, 5010, 5320,
5378
SALDUCCI, J.
4796*
SALEN, G.
4785
SALIOU, A.
5288
SALZER, G.M.
5311, 5325
SAMA, S.K.
5360
SANCHEZ, M.F.
4909
SANDERS, R.C.
5331*
SANDNER, H.
4876
SANKALE, M.
5183
SANOWSKI, R.A.
5391
SANZ SANZ, T.
5400
SARKANY, I.
5285
SARLES, H.
5182, 5314
SARMA, K.P.
5028
SARRADE-LOUCHEUR, C.
5288
SASSOON, H.F.
4737
SATGE, P.
5349
SATO, S.
5175*
SAUBERLICH, H.F.
4712*
SAUBIER, E.
4974
SAUNDERS, S.J.
5223*
SAVOYE, B.
5354
SBRICCOLI, A.
5067
SBUELZ, B.
5304
SCAEFER, J.M.
5129
SCARSELLI, R.
4921
SCHAFFER, J.W.
5077
SCHAFFNER, F.
4832*
SCHARLI, A.F.
4802
SCHAUMANN, W.
4779
SCHEIG, R.
5246
SCHIAU, S.
5302*
SCHICKEDANZ, H.
5050
SCHILLINGS, P.H.M.
5057
SCHLEGEL, J.F.
4789*
SCHLEIFF, I.
5041
SCHMID, R.
4825*
SCHMIDT, E.
4933
SCHMIDT, F.W.
4933
SCHMIDT, H.D.
5144
SCHMIDT, J.
5194
SCHMIDT-MENDE, M.
5338
SCHMIEGE, S.K.
4793*
SCHNACK, H.
5215
SCHNEIDER, R.
4967
SCHNEIDERBAUR, A.
5265, 5287
SCHOPEN, R.D.
5165*
SCHRADER, L.E.
4712*
SCHREMMER, K.
5226
SCHROEDER, H.
5095
SCHUBERT, W.
5063
SCHULTEN, H.J.
5074*
SCHULTIS, K.
5040, 5333
SCHULTZ, S.G.
4771
SCHULZ, K.
5173*
SCHUMACHER, K.
5276
SCHUSTER, M.M.
5002
SCHWANITZ, G.
5138
SCHWARZMANN, V.
5174*
SCOTTO, J.
5252*, 5258, 5259
5263
SECAF, F.
5032
SEDGWICK, C.E.
5303
SEIFART, K.H.
4710*
SEKERIS, C.E.
4710*
SEKHARA VARMA, T.N.
4694*
SELIGMANN, M.
5346
SENN, A.
5332
SERYCZYNSKA, H.
4876
SETHBHAKDI, S.
5020*
SEVERIDT, H.J.
4898
SHAFFIR, M.
5151
SHALITA, A.R.
4814
SHEAR, L.
5299
SHEARER, M.J.
4757*
SHEARMAN, D.J.C.
5075*
SHEEN, M.R.
4862
SHERIF, S.M.
5089
SHERLOCK, S.
5180
SHIM, W.K.T.
4989
SHIMEONI, A.
4891*
SHIN, C.S.
4764*
SHORTEN, E.A.
5008
SICOT, C.
5232
SIEGEL, N.H.
5207
SIEBENS, L.
4691*
SIMCIC, V.
5203
SIMKOVA, Z.
5131
SIMPSON, J.D.
5075*
SINHA, V.N.
5008

SJOBERG, H.E.
5076
SJOVALL, J.
5254*
SKALA, I.
4799
SKALOVA, M.
5122*
SKYRING, A.
5124
SLIM, M.S.
4971
SMADJA, A.
5263
SMADJA, M.
5216
SMITH, H.
5324
SMITH, L.C.
4817
SMITH, T.
5090*
SMITH, V.M.
5002
SMYTH, D.H.
4760*
SMOLDAS, J.
4893*
SNARR, J.W.
4914
SOMAYAJI, B.N.
5237
SOSA GALLARDO, C.
5324
SOW, A.M.
5183
SPOHN, K.
5144
SRIVASTAVA, K.K.
5361, 5362, 5363
STADELMANN, O.
5368
STAHL, J.
4950
STALHANDSKE, T.
4828*
STEARNS, M.W., JR.
5112
STEFENELLI, N.
4961
STIEHL, A.
4932
STIFEL, F.B.
4848
STILLE, W.
5262
STOENESCU, R.
5302*
STOIAN, I.
4705*
STOICULESCU, P.
5302*
STOLZNER, H.
4896
STOODLEY, B.J.
5156
STOPPANI, A.O.M.
4724, 5241
STOREN, E.J.
5307
STRALIN, H.
5258
STRANDBERG, K.
4790*
STRAUCH, M.
5326
STREICHENBERGER, R.
5401
STRNAD, F.
5365
STROBEL, H.W.
4716
STROHMEYER, G.
5278*
STROTGES, M.W.
4922
STURM, R.E.
4789*
SUDRE, Y.
5261
SUEMATSU, T.
4819*
SUGIMURA, T.
5175*
SULTAN, M.N.
4927
SUN, S.H.
5289
SUNSHINE, P.
4864*
SUTNICK, A.I.
5268
SVANVIK, J.
4868
SWAMI, K.S.
4845
SWIATEK, K.R.
4689*
SWICK, R.W.
4700*
SWINTON, N.W., SR.
5107
SYBESMA, J.P.H.B.
4919
SYLVEN, C.
4766*
SZMUNESS, W.
5253*
TAIRA, N.
4788*
TAKAHASHI, J.
4930
TAKAI, S.I.
4831*
TALBOTT, R.E.
4882
TAMEMASA, O.
4749
TAMVAKOPOULOS, E.
4826*
TAMVAKOPOULOS, S.K.
5171*
TAN, C.V.
5210
TANAKA, T.
5043
TANDON, B.N.
5360
TANG, J.
4810
TANK, F.S.
4867
TASSIN, B.
5023
TASSO, H.
5182
TATEMATSU, A.
4778
TAUBERT, W.
4986
TAYLOR, W.H.
5045
TCHANG, S.P.K.
5319
TESTART, J.
5031, 5105
TETE, R.
5106
TEXIER, J.
5185
THEODOR, F.
5273
THEODOROPOULOS, G.
5259
THEUERKAUF, F.J., JR.
5109
THIEBAULT, F.
5227, 5284
THOMAS, G.
4964, 4965
THOMAS, G.M.
5390
THOMAS, J.
5340
THOMAS, M.
4942, 5216
THOMASSIN, N.
5218
THOMERET, G.
4975
THOMFORD, N.R.
4996
THOMPSON, A.
4877, 5242
THOMPSON, E.B.
5177*
THOMPSON, J.H.
4998
THORSHAUGE, C.
5376
THURNHEEER, W.
5163
TIETZE, F.
4689*
TILDON, T.
4689*
TOBE, T.
5009, 5320, 5378
TOCHEV, K.
4934
TODA, N.
5009, 5010, 5320,
5378
TODOROFF, T.
5221*

TOH, C.C.S.
5082
TOLENTINO, E.M.
4824*
TOMASINI, J.T.
4713*
TOMKINS, G.M.
5170*
TONDI, D.
4987
TORNOCZKY, J.
5161
TORRANCE, H.B.
4873
TOSTIVINT, R.
4909, 5048
TOURNIER-LASSERVE, A.
5289
TRAUL, D.
4973
TREY, C.
5179, 5240
TRINH, S.
5408
TRUCKENBRODT, H.
5345
TRUEBLOOS, H.W.
4911
TSCHUDY, D.P.
4847
TSUNEMATSU, K.
4991
TURKER, R.K.
4797*
TURPIN, G.
5346
UBEZIO, G.
5033
UENO, K.
4988
UHLMANN, W.
4980
UMEDA, T.
4831*
UNDT, W.
4961
UNGER, K.
5062
UPSON, D.W.
4781
URBANOWICZ, M.
5169*, 5176*
URIEL, J.
4740
USHIJIMA, H.
4709*
UY, F.
4859
VACHON, A.
5106
VADHAT, A.
5353
VAITTINEN, E.
5309
VALBERG, L.S.
5072*
VAN ACKEREN, H.
4943
VAN CANFORT, J.
4853
VAN DE BERG, A.
5402
VAN DE STAAK, W.J.B.M.
5057
VAN DUUREN, M.
4698*
VAN KAICK, G.
4949
VANKEMMEL, M.
5061, 5334, 5337,
5348, 5350, 5364
VAN LANCKER, J.L.
4826*
VAN TONGEREN, J.H.M.
5057
VARRO, V.
4807*
VAUGHN, J.P.
5219
VAYRE, P.
4994
VAYSSE, N.
4812
VEECH, R.L.
4733
VEIDENHEIMER, M.C.
5133
VEISSIERE, D.
5310
VERESS, B.
4730
VERGOZ, D.
5288
VERHAEGHE, M.
5111
VERNE, J.
4741
VERNES, A.
4907
VEYRE, B.
5296
VIAL, J.D.
4751
VIALETTES, T.
5288
VIALLET, A.
5291
VICK, R.L.
4803
VIDO, J.
4898
VIHKO, R.
4875
VINCENZI, L.
5033
VINOGRADOV, V.
5312
VIRAG, R.
5105
VISSET, J.
5148
VODOVAR, N.
4707*
VOIGTLANDER, W.
4779
VOINCHET, C.
5200
VON BRUCKE, F.T.
5201
VON OLDERHAUSEN, H.F.
5224
VON STELZNER, F.
5115
WAALER, G.
5307
WADA, A.
5043
WALDHAUSL, W.
4892*
WALLACE, R.B.
5393
WALLNOFER, H.
5274*
WALTERS, J.
5398
WALTERS, M.N.I.
4770
WANGENSTEEN, S.L.
5037
WASHINGTON, R.J.
4806*
WASSERMAN, R.H.
4775
WATERMAN, M.R.
4822*
WATSON, A.
4873
WATSON, J.J.
4737
WEBSTER, G.R.
4757*
WEINBERG, T.
5316
WEINSTEIN, L.D.
5380
WEIR, M.R.
5243
WELCH, J.S.
5377
WELLING, R.E.
4899
WEMEAU, J.
5111
WEMEAU, L.
5111
WENCKERT, A.
5069
WENGER, J.
5003
WENZ, W.
4941, 4949
WESER, U.
4830*
WEWALKA, F.
4892*, 4945
WHALEY, K.
5206
WHEATLEY, V.
4814
WHELAN, G.
4754*
WHITCOMB, F.F.
5179
WHITELEY, H.W., JR.
5112

WHITESELL, F.B., JR.
5054
WICHERN, W.A., JR.
4959
WIDNER, A.
5381
WIEBECKE, B.
5367
WIETZNER, S.
5001
WILDER, G.P.
5226
WILDER, J.R.
5308
WILFRED, G.
4694*
WILKINS, J.L.
4804
WILLIAMS, L.P., JR.
5357
WILLIAMS, R.C.
5390
WILLIAMSON, J.
5206
WIMHURST, J.M.
4745
WINAVER, S.J.
5392
WINNE, D.
4774
WIONTZEK, H.
5194
WITZ, J.P.
5341
WODAK, E.
4960
WOHLHEUTER, R.M.
4818*
WOLF, R.
4750
WOLFF, G.
4978
WOLTER, J.
4969
WOOD, E.E.
5245
WOOD, R.L.
4747
WORNING, H.
5086
WRIGHT, F.W.
5331*
WRIGHT, H.K.
5380
WRIGHT, S.W.
4989
YAMADA, K.
4752
YAMAMOTO, M.
4788*
YAMAMOTO, T.
4991
YAMAOKA, Y.
4930
YAMASHINA, K.
5009, 5320, 5378
YATVIN, M.B.
4823*
YOKOYAMA, M.
4991
YONG, F.C.
4822*
YOSHII, Y.
4930
YOSHIKAWA, I.
5271
YOSHITOMI, G.
4746, 4874
YUKIMORI, S.
4798
YUNOKI, H.
5271
ZAKIM, D.
4848
ZBARSKY, S.H.
4723, 4748
ZBORALSKE, F.F.
4968
ZEITLHOFER, J.
4966
ZIELSKE, F.
4779
ZIEVE, L.
5280*, 5281*
ZIMMERLI, W.
5407
ZIMMERMAN, H.
5164*
ZUBAS-ADAMS, D.
4859
ZUMTOBEL, V.
4957
ZWEIBAUM, A.
5126
ZWIRNER, K.
4937

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- ABDOMEN
  - ACUTE, PAIN, PANCREATITIS, CHOLELITHIASIS, PYRAZOLONE DERIVATIVE, SPASMOLYTIC, INTOXICATION (5369)
  - ANGIOGRAPHY (4931)
  - ANGIOGRAPHY, GASTROINTESTINAL HEMORRHAGE, AORTA, CAVOGRAPHY, PATHOMORPHISM, BARIUM, GALLBLADDER (4949)
  - AORTOGRAPHY, SURGERY (5359)
  - APOPLEXY, HEMORRHAGE (5387)
  - DIAPHRAGMATIC HERNIA, CYANOSIS, NEONATE, CONGENITAL (5049)
  - FIBRODYSPLASIA, POLYPOSIS COLI, SURGERY (5100)
  - HODGKIN'S DISEASE, SURGERY, DIAGNOSIS (4911)
  - INTESTINAL OCCLUSION, ADHESIONS, INTRAPERITONEAL ABSCESS (5334)
  - PAIN, LYMPHOMA, JEJUNAL MUCOSA, ALPHA GLOBULIN (5346)
  - PAIN, PANCREATITIS, BILIARY LITHIASIS, AMYLASE, LIPASE (5153)
  - PAIN, PANCREATITIS, PANCREATIC CARCINOMA, PSEUDOCYST, TRAUMA, ABSCESS (5144)
  - TERATOMA, INFANT, RADIOLOGY (4914)
  - TRAUMA, LAPAROSCOPY, PERITONEAL HEMORRHAGE, SCINTIGRAPHY, PERFORATION, SURGERY, HEMATOMA (4909)
  - TRAUMA, LIVER, SMALL BOWEL, STOMACH, PANCREAS (5390)
  - TRAUMA, RADIOLOGY, CHILDREN (4920)
- ABSCESS
  - APPENDIX, HERNIA (5113)
  - COLON, SURGERY, HEALING (5101)
  - LIVER, ASCARIS (5399)
  - LIVER, SURGERY (5208)
- ABSORPTION
  - BILE, EXCRETION, CARDIOGLYCOSIDE (4479)*
  - CALCIUM, SMALL INTESTINE, VITAMIN D3, STRONTIUM (4775)
  - CARBOHYDRATE, MEMBRANE PERMEABILITY, DIARRHEA (4870)*
  - COBALT, INTESTINE, CIRRHOSIS, HEMOCHROMATOSIS (5072)*
  - FAT, DIGESTION, ENZYME (4773)
  - GLUCOSE, GASTRIC RESECTION, ILEUM, VITAMIN B12, PERISTALSIS, MALIGNANT TUMOR (5083)
  - ILEUM, SALT LOADING, CAT (4783)
  - INTESTINAL, MUCOSA, TANNIC ACID, GLUCOSE, BUTYRIC ACID, METHIONINE, MOUSE (4780)
  - INTESTINE, BLOOD FLOW, WATER (4774)
  - INTESTINE, IRON, REGULATION, FERRITIN (4755)*
  - INTESTINE, LIVER, VITAMIN B12, WHOLE BODY SCANNING, RADIOACTIVE COBALT (5075)*
  - INTESTINE, PROTEIN, ENZYME (4767)
  - INTESTINE, SODIUM, SUGAR (4771)
  - INTESTINE, TETRACYCLINE, RAT (4778)
  - INTESTINE, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (5380)
  - LACTOSE, IRON UTILIZATION, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
  - LIPID, SMALL INTESTINE, BLOOD SUPPLY, MICELLE (4766)*
  - PROTEIN, DIGESTION, MAN (4768), (4769)
  - SMALL INTESTINE, PREGNANCY, LACTATION (4753)
  - SMALL INTESTINE, PROTEIN, CARBOHYDRATE, FAT, CHOLECYSTOJEJUNOSTOMY (4764)*
  - SMALL INTESTINE, SUGAR, WATER (4784)
  - SMALL INTESTINE, WATER, CHLORIDE, SODIUM, GLUCOSE, HYPOPHYSECTOMY, RAT (4756)*
  - THIAMINE, PANCREAS, THIAMINE PYROPHOSPHOKINASE, PHOSPHORYLATION, INTESTINAL TRANSKETOLASE (5143)
  - TRANSPERITONEAL EXCHANGE, OSMOSIS, HYPEROSMOLARITY, GLUCOSE INFUSION (4758)*
  - VITAMIN K1, GASTROINTESTINAL ABSORPTION, RADIOISOTOPES TRACING, URINE, FECES, PLASMA (4757)*
  - WATER, ILEUM, ELECTROLYTE, ATPASE, ULTRASTRUCTURE (4713)*
- ACHALASIA
  - CARDIA, ESOPHAGUS, SURGERY (4972)
  - CARDIAC, PYLORIC SPASM, STOMACH DILATATION, SURGERY, CARDIOMYOTOMY, PYLOROPLASTY, CHILDREN (4963)
- ACID-BASE
  - ACIDITY, STOMACH, GASTRIN, PENTAGASTRIN, MOTILITY, ANTRAL MUCOSA (4808)
  - ALKALOID, LIVER, TOXICITY, RAT (5239)
  - REDOX CHANGES, LIVER, CYTOCHROME P-450, OXYGEN ACTIVATION, ENDOPLASMIC RETICULUM, RABBIT (4822)*
  - RESPIRATORY ALKALOSIS, LIVER, CIRRHOSIS, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA (5292)
  - STOMACH, SECRETION, DUODENAL ULCER (5033)
  - URIC ACID, STOMACH ACID SECRETION, TRANSPORT, MUCOSA (4761)*
- ACTINOMYCIN
  - D, ENZYME, CYCLOHEXAMIDE, INTESTINE, EPITHELIAL CELLS (4692)*
  - RNA SYNTHESIS, RAT LIVER CHROMATIN, CORTISOL, RNA POLYMERASE (4710)*
- ADRENAL
  - ADRENALECTOMY, LIVER, RADIATION TOXICITY, HEAVY POLYRIBOSOMES, LIVER REGENERATION, RAT (4823)*
  - MICROSOME, MONO-OXYGENASE, LIVER, GUINEA PIG (4732)
- ALCOHOL
  - ALCOHOLIC CIRRHOSIS, PANCREATIC FUNCTION, AMYLASE, LIPASE, PANCREOZYMIN (5278)
  - ALCOHOLISM, FATTY LIVER, PARENCHYMAL DAMAGE, SILYMARIN, BLOOD CHEMISTRY (5165)
  - ALCOHOLISM, LIPID METABOLISM, MAIZE OIL, UNSATURATED FATTY ACIDS, LIVER MITOCHONDRIA (5234)
  - ALCOHOLISM, PANCREATITIS, DIABETES (5157)
  - ALLYL, HEPATIC PELIOSIS, HEPATIC ENZYMES, RATS, LDH, TRANSAMINASE (5174)*
  - ALLYL, LIVER, PROTECTION, BSP TEST, STATISTICAL EVALUATION, RAT (4895)

- CHLORETHANOL, LIVER TOXICITY, GROWTH, CHLORHYDRIN, RAT (5231)
- CHRONIC ALCOHOLISM, FOLIC ACID, URINE, LIVER BIOPSY, MALABSORPTION (5074)
- CHRONIC GASTRITIS, GASTRIC MUCOSA (4978)
- CONGENERS, FUSEL OIL, LIVER, PARENCHYMAL DAMAGE, STEATOSIS, NECROSIS, TUMORS (5226)
- FAT, LIVER, CIRRHOSIS (5235)
- GASTRIC MUCOSA, BLOOD FLOW, ASPIRIN (5382)
- GLYCEROL, LIVER, ENZYME, TROUT (4846)
- LIPID METABOLISM, INSULINEMIA, GLYCEMIA, CHOLESTEROL, ELECTROPHORESIS, CHYLOMICRONS (5227)
- LIVER, CIRRHOSIS, LIPID (5246)
- LIVER, CIRRHOSIS, NECROSIS, HEMODYNAMICS, STEATOSIS (5295)
- LIVER, FAT, DIET (5236)
- LIVER DAMAGE, UROBILINOGENURIA, CIRRHOSIS, FATTY LIVER, HEPATOMEGALY, POLYNEUROPATHY (5224)
- LIVER MITOCHONDRIA, PERMEABILITY, FRAGILITY, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)•
- RETICULOENDOTHELIAL SYSTEM, ABSORPTION, STEATOSIS, INTOXICATION, RAT (5233)

AMINO ACID
- ARGININE, ORNITHINE, HEPATITIS, CIRRHOSIS, RADIATION (5197)
- GLYCINE, TRANSPORT, SMALL INTESTINE, SODIUM, BIRD (4776)
- HEPATIC INCORPORATION, POLYRIBOSOMES, ATP, ASSAY, ISOLATION (4712)•
- HYPOGLYCIN, TOXICITY, METABOLISM (5249)
- LEUCINE, LYSINE, REGENERATION, LIVER, RADIATION, PROTEIN (4826)•
- LIVER, DEHYDROGENASES, PROTEIN CATABOLISM, HEPATIC ENZYMES (4818)•
- LIVER, PROTEIN SYNTHESIS, CORTISOL TREATMENT, IN VIVO, IN VITRO, RAT (4834)•
- METABOLISM, LIVER, SPLEEN (4847)
- METHIONINE, DEFICIENCY, RAT EMBRYO, PANCREAS, ULTRASTRUCTURE, ENZYME ACTIVITY (4701)•
- PEPSIN, GASTRICSIN, HUMAN (4810)
- THREONINE DEFICIENCY, ENZYME, LIVER (4694)•

AMMONIA
- AMMONIEMIA, HEPATIC COMA, BLOOD PLATELETS, HETEROLOGOUS PERFUSION (5215)
- AMMONIEMIA, HEPATIC COMA, FLAPPING TREMOS, HEMORRHAGE (5217)
- HYPERAMMONEMIA, GASTRECTOMY, TRANSHEPATIC SHUNT, HEPATIC LESIONS (4950)
- HYPERAMMONIEMIA, LIVER, CIRRHOSIS, RENAL DISEASE, RESPIRATORY ALKALOSIS (5292)
- UREA, GASTROENTERITIS, ELECTROLYTE (5385)

AMPULLA OF VATER
- STENOSIS, SPHINCTERECTOMY, GALLBLADDER (4999)

ANALGESIC
- ASPIRIN, STOMACH, MUCOSA, BLOOD FLOW, ALCOHOL (5382)
- PANCREATITIS, CHOLELITHIASIS, ACUTE ABDOMINAL PAIN, SPASMOLYTICS, PYRAZOLONE DERIVITIVE (5369)

ANAPHYLAXIS
- ANTIGEN, ILEUM, GUINEA-PIG (5053)

ANASTOMOSIS
- BILE DUCT, CYST, ATRESIA, JAUNDICE (5327)
- BILIARY-JEJUNAL BYPASS, PANCREATIC LESIONS, STENOSIS, CALCULI (5300)•
- CHOLECYSTOJEJUNOSTOMY, INTESTINAL ABSORPTION, PROTEIN, CARBOHYDRATE, FAT (4764)•
- CHRONIC PANCREATITIS, BILE DUCT, THORACIC SYMPATHECTOMY, SPLANCHIECTOMY (5162)
- CHRONIC PANCREATITIS, BILIARY LITHIASIS, WIRSUNG'S CANAL, CHOLANGIOGRAPHY (5151)
- ESOPHAGEAL, MOTILITY, HEMORRHAGE, ARTIFICIAL ESOPHAGUS (4964)
- ESOPHAGUS, ATRESIA, LIPIODOL, BARIUM-OXIDE, RADIOLOGY (4956)
- OESOGASTRIC, GASTRECTOMY, METALLIC CLIP, P.K.S. 25, TERMINOLATERAL TECHNIQUE (5350)
- P.K.S. 25, ESOINTESTINAL, HEMICOLECTOMY, ILEO-TRANSVERSE (5364)
- PANCREATIC CANCER, METASTASES, BIOPSY (5141)
- PANCREATIC CYSTS, DRAINAGE, ANASTOMOSIS, PRESSURE (5139)
- PORTACAVAL, CIRRHOSIS (5297)
- PORTACAVAL, LIVER CIRRHOSIS, HEMMORHAGE, PROGNOSIS (4940)
- POSTOPERATIVE RECTOCOLITIS, PROGNOSIS, MORTALITY RATE (5123)
- RECTUM, TRIGONE (4867)

ANEMIA
- APLASTIC, HEMORRHAGE, GASTROINTESTINAL TRACT, HEPATITIS, PANCYTOPENIA (5266)
- BIAFRAN CHILDREN, MALNUTRITION, LIVER, SPLEEN, CARDIOPATHY (5340)
- GASTRIC, ADENOCARCINOMA, OSTEMEDULLARY BIOPSY, HEMOPATHIC, YOUNG ADULT (5016)
- ICTERUS, CHOLANGITIS, LIVER (4919)
- NORMOCHRONIC, MULTIPLE MYELOMA LIVER, KAHLER'S DISEASE, PROTEINURIA, PROTEINEMIA (5275)
- PENICIDUS, GASTRITIS, IMMUNOLOGY, ANTIBODIES, MUCOSA, INTRINSIC FACTOR (5005)

ANESTHESIA
- ESOPHAGUS, STOMACH, ULCER, DIAGNOSIS (4953)
- HALOTHANE, EXPOSURE, LIVER, SULFOBROMOPHTHALEIN, CLEARANCE, RAT (5223)•
- TOXICITY, LIVER, SURGERY (5244)
- TRACHIAL INTUBATION, PERFORATION, CERVICAL ESOPHAGUS, EMPHYSEMA (4975)
- BLOOD FLOW, LIVER (5376)

ANOMALY
- CONGENITAL, ANUS, RECTUM, SPHINCTER, SURGERY (5093)
- CONGENITAL, RECTUM, DUPLICATION, SURGERY (5108)
- GALLBLADDER, DUPLICATION, CONGENITAL, CHOLECYSTOGRAPHY (5313)
- GALLBLADDER, MULTISEPTATE, EMBRYOGENESIS (5316)
- HIRSCHPRUNG DISEASE, MALROTATION, PERITONITIS, ATRESIA, NEONATE, DIAPHRAGM (5058)
- MALROTATION, DUODENUM, ATRESIA, STENOSIS (5013)

ANTIBIOTIC
- COLON, SURGERY, CARCINOMA (5118)
- EMETINE, LIVER, DRUG METABOLIZING ENZYME (4708)*
- ENTERITIS, DIARRHEA, NEONATE (5371)
- PENICILLIN, SURGERY, COLON, BACTERIA (4881)
- PERITONITIS, DUODENAL FISTULA, DRAINAGE, PROTEASE INHIBITORS, BILLROTH RESECTION (4983)
- PROTEIN SYNTHESIS, INHIBITION, HEPATECTOMY, DNA REPLICATION, CYCLOHEXAMIDE, PACTAMYCIN, SPARSOMYCIN (4831)*
- TETRACYCLIN, INTESTINE, ABSORPTION, RAT (4778)
- TETRECYCLINE, PANCREAS, LIPASE (4814)

ANTIBODY
- ISO, ANTI-COLON, DIGESTIVE GROUP, AUTO-IMMUNE, HUMAN (5126)
- ULCERATIVE COLITIS, HYPERSENSITIVITY, DNA, SALAZOPYRINE, TISSUE DAMAGE, AUTOLOGOUS LEUCOCYTES (5132)
- VIRUS-SPECIFIC, CHRONIC HEPATITIS, IMMUNOSUPPRESSIVES, CIRRHOSIS, ACUTE INTOXICATION (5247)

ANTIGEN
- AUSTRALIA, HEPATITIS (5272)
- AUSTRALIA, HISTORY, HEPATITIS (5270)
- AUSTRALIA, HEPATITIS, VIRAL (5268)
- ENTAMEBA, SEROLOGY (5403)
- HEPATITIS, IMMUNOELECTROPHORESIS, OUCHTERLONY TECHNIQUE, SERUM PROTEIN, BLOOD TRANSFUSION (4945)
- ILEUM, ANAPHYLAXIS, GUINEA-PIG (5053)
- PROTEIN, IMMUNOLOGY, CHOLERA (5107)
- SERUM HEPATITIS, INFECTIOUS HEPATITIS (5253)*

ANTISEROTONIN
- DUMPING SYNDROME, GASTROENTEROSTOMY, PEPTIC ULCER, GASTRECTOMY METHYSERGIDE (5079)

ANUS
- ANATOMY, SURGERY, RECTUM (4729)
- DEFECATION, COLON, RECTUM (4802)
- MALFORMATION, SPHINCTER, SURGERY, CLOACAL PARTITION (5093)
- PROLAPSE, ULCERATIVE COLITIS, INTESTINAL COMPLICATIONS, LIVER, EYES, ABSCESS (5130)
- SPHINCTER, INCONTINENCE, SURGERY, FASCIA PLASTIC, GRACILIS MUSCLE (4968)

APPENDIX
- ABSCESS, HERNIA (5113)
- APPENDOECTOMY, TOTAL (5120)
- APPENDICITIS, GAS GANGRENE, PERFORATION, FATAL, DRAINAGE (5097)
- APPENDICITIS, PREGNANCY, OVARIAN SURGERY, PROGESTERONE, LABOR, ABORTION, ILEUS (5092)
- CROHN'S DISEASE, REGIONAL ENTERITIS (5067)
- DIVERTICULITIS, APPENDICITIS, SURGERY (5103)
- ENDOMETRIOSIS, SURGERY (5104)

ARTHRITIS
- AMYLOIDOSIS, HEPATIC, REGRESSION, RENAL CANCER, NEPHRECTOMY, MUCOPROTEINS, LIVER BIOPSY (5185)
- POLY, CHRONIC, GOLD TREATMENT, CHOLESTASIS, MUCOSA, REVERSIBLE CHANGES, AURO-DETOXIN (5194)
- RHEUMATOID, LIVER, PATHOLOGY, SJOGREN'S SYNDROME (5206)

ASCITES
- HEPATIC, ALBUMIN, PORTAL HYPERTENSION, HYPOVOLEMIA, DIURETICS, SPIROLACTONE (5279)

BACTERIA
- CHOLERA, FOWL, IMMUNOLOGY (5363)
- CLOSTRIDIUM, PERFRINGENS, INTESTINE, IMMUNOLOGY, LAMB (5396)
- CLOSTRIDIUM, PERFRINGENS, SMALL INTESTINE, FOOD POISONING, DIARRHEA (4884)
- ELECTRON MICROSCOPY, ALIMENTARY TRACT, INSECT (4876)
- IMMUNOLOGY, CHOLERA, FOWL (5362)
- INFECTION, BILIARY TRACT, AMPICILLINE, JAUNDICE (5323)
- SALMONELLA, EXCRETION, STRESS, PIG (5357)
- SALMONELLA, TYPHOID, PARATYPHOID, ANTIBIOTICS, ELECTROLYTES (5333)

BILE
- ACID, CONCENTRATION, SERUM, INFECTIOUS HEPATITIS (5254)*
- ACID, CIRCADIAN RHYTHYM, ENDOCRINE FACTOR, RIBOSOMAL PROTEIN, CHOLESTEROL-7-ALPHA-HYDROXYLASE (4853)
- ACID, LIVER, JAUNDICE, HEPATIC COMA, HEMOLYTIC TOXINS (5256)
- CORTICOSTERONE METABOLISM, SEX DIFFERENTIATION, RAT (4854)*
- DIET, CHOLESTEROL, GALLSTONE (5314)
- EXCRETION, ABSORPTION, CARDIOGLYCOSIDE (4779)*
- FLOW, BODY TEMPERATURE, SKF-525-A, EXCRETION, INDOCYANINE GREEN (4860)*
- HEMOBILIA, TUMOR, TRAUMA (5303)
- HEMOBILIA, TUMOR, TRAUMA, ETIOLOGY (5303)
- LIVER, CHOLANGITIS, SCLEROSIS (5307)
- SECRETION, VIRAL HEPATITIS, VEDRENAN, CHOLERETIC, CIRRHOSIS, MIGRAINE, LITHIASIS (5172)
- STONES, GALLBLADDER, ULTRASONIC DETECTION (4893)*
- ATRESIA, OBSTRICTIVE JAUNDICE, CIRRHOSIS, CHOLESTYRAMINE (5218)

BILE DUCT
- APT, ATRESIA, ANASTOMOSIS, JAUNDICE (5327)

  - BILIARY-JEJUNAL BYPASS, SURGICAL TECHNIQUE, JEJUNUM (5300)*
  - CANCER, ULCERATIVE COLITIS (5315)
  - CHOLESTASIS, PHOSPHOLOIPID, LIPOPROTEIN, ANTIGEN, ALBUMIN (5310)
  - CHOLESTASIS, RECURRENT, INTRAHEPATIC, JAUNDICE, MITOCHONDRIAL FLUORESCENCE (5195)
  - COMMON, EPITHELIUM, ELECTRON MICROSCOPE (4752)
  - CONCREMENT, LIVER, RUTIN, INFLAMMATION, SIDE EFFECT (5228)
  - CYST, DUODENUM, STONE (5318)
  - LIVER, DIGESTIVE TRACT, CHOLELITHIASIS, MIGRAINE, DYSKINESIA (5343)
  - RADIOLOGY, CHOLANGIOCHOLECYSTOGRAPHY (4917)
  - RADIOLOGY, ORAL, INTRAVENOUS, SURGICAL, CHOLECYSTOGRAPHY, CHOLANGIOGRAPHY (4906)
  - STASIS, LIVER TUMOR, METASTASES, ECHINOCOCCOSIS (5407)
- BILIARY TRACT
  - BACTERIAL INFECTION, METAMPICILLINE, JAUNDICE, LITHIASIS, AMPICILLINE, ELIMINATION (5323)
  - CHOLESTASIS, GOLD TREATMENT, ALLERGY, RHEUMATOID ARTHRITIS, MUCOSA, REVERSIBLE CHANGES, AURO-DETOXIN (5194)
  - CHOLESTASIS, JAUNDICE, SURGERY, HEPATITIS (5179)
  - CHOLESTASIS, LIPOPROTEIN, PHOSPHOLIPID, ANTISERUM, ANTIGEN, ALBUMIN (5310)
  - CHOLESTASIS, RECURRENT, INTRAHEPATIC, JAUNDICE (5195)
  - GALLBLADDER, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)*
  - HYDATIDOSIS, LIVER, SURGERY (5400)
  - MEXASE, COLON, PANCREATITIS (5356)
  - OBSTRUCTION, CHOLESTASIS, CYTOMEGALIC INCLUSION, NEONATE, HEPATITIS, JAUNDICE, HYPERLIPEMIA (5190)
  - OBSTRUCTION, DUODENUM, DIVERTICULUM (5317)
  - PANCREATIC CYST, RADIOLOGY, GASTROINTESTINAL TRACT, JAUNDICE, SURGERY, DRAINAGE (5140)
  - PANCREATITIS, PERFORATION, PERITONITIS, NECROSIS (5149)
  - SURGERY, BIOLOGICAL GLUE (5312)
  - SURGERY, GALLBLADDER, LIVER (5308)
- BILIRUBIN
  - CARBON MONOXIDE, HEME CATABOLISM, RAT (4825)*
  - CONJUGATION, LIVER, HUMAN, RAT (4844)*
  - HYPERBILIRUBINEMIA, CONGENITAL, LIVER, GILBERT'S SYNDROME (5205)
  - HYPERBILIRUBINEMIA, NEONATE, LUMINAL TREATMENT (5220)
  - LIVER, MITOCHONDRIA, METABOLISM (5241)
  - PROTEIN BINDING, SERUM ALBUMIN, HUMAN, BOVINE, OPTICAL DENSITY (4859)
  - SECRETION, LIVER, SHEEP (4781)
  - SERUM, ASSAY, SPECTROPHOTOMETRY (4849)
- BIOPSY
  - LIVER, MENGHINI, LEUKEMIA, LAPAROTOMY, HEMORRHAGE, SHOCK (5344)
- BLOOD VESSEL
  - MESENTERIC ARTERY, HYPERVASCULARIZATION, CROHN'S DISEASE, ANGIOGRAPHY (5066)
  - MESENTERIC ARTERY, OCCLUSION, EMBOLECTOMY (5332)
- CALCULUS
  - CONCREMENT, LIVER, ANIMAL STUDY, RUTIN, BILE DUCT (5228)
  - CYST, BILE DUCT, DUODENUM (5318)
  - DUODENUM, DIVERTICULUM, PERFORATION (4997)
  - GALLBLADDER, AGE FACTOR, NUTRITION, GALLBLADDER PERFORATION, SEX FACTOR (5325)
  - GALLBLADDER, BILE, DIET, CHOLESTEROL (5314)
  - GALLBLADDER, CHOLECYSTOGRAPHY (4918)
  - GALLBLADDER, ICTERUS, CARCINOMA, DIAGNOSIS (5306)
  - GALLBLADDER, ILEUS (5047)
  - GALLBLADDER, ILEUS, SURGERY (5054)
  - GALLBLADDER, OBSTRUCTION, DUODENUM (5330)
  - GALLBLADDER, X-RAY, ORAL TRIJOBIL, I.V. CYSTOGRAPHY, STOMACH, DUODENUM, SEX DIFFERENCE (5041)*
  - GALLSTONES, PANCREATITIS, SURGERY, NECROTIC LESION, PERITONEAL DIALYSIS (5152)
  - RECTUM, MILK OF MAGNESIA (5098)
- CANCER
  - ACUTE LEUKEMIA, LIVER BIOPSY, SHOCK, HEMORRHAGE, MENGHINI (5344)
  - BILE DUCT, ULCERATIVE COLITIS (5315)
  - COLON, SURGERY (5107)
  - DIAGNOSIS, STOMACH, INTESTINE, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
  - EARLY MANIFESTATION, STOMACH, ULCER, POLYP, INTESTINE (5367)
  - HEMORRHAGE, ULCER, SURGERY (5372)
  - LUNG, JEJUNUM (5043)
  - MEDIASTINAL TUMOR, ESOPHAGUS, RADIOLOGY, EPITHELIOMA (4962)
  - METASTASES, LIVER, GAMMA-GLUTAMYLTRANSPEPTIDASE, ALKALINE PHOSPHATASE, OBSTRUCTIVE JAUNDICE (4936)
  - NEOPLASTIC, POLYP, STOMACH, PYLORIC ANTRUM, MUCOSA, SUBMUCOSA (5006)
  - METASTASES, COLON, RECTUM, LIVER, CHEMOTHERAPY (5198)
  - PANCREATIC, METASTASES, ANASTOMOSIS, BIOPSY (5141)
  - PRIMARY, LIVER, DIAGNOSIS (5183)
  - PROSTATIC, RECTAL OCCLUSION, EPITHELIOMA, DYSURIA, ESTROGEN THERAPY (5111)
  - RECTUM, COLON, RADIATION THERAPY (5112)
  - RENAL, HEPATIC, REGRESSION, MUCOPROTEINS, NEPHRECTOMY, LIVER BIOPSY, AMULOIDOSIS (5185)
  - STOMACH, COLON, THORAX, RADIOGRAPHY (4947)
  - STOMACH, CYTODIAGNOSIS (4890)*
  - STOMACH, DIAGNOSIS, SURGERY (4929)
  - STOMACH, ESOPHAGUS, SURGERY (4928)
  - STOMACH, IMMUNOLOGY (4991)

  - STOMACH, LYMPH NODE, GASTRECTOMY (4979)•
  - STOMACH, RADIOLOGY, DIAGNOSIS (5009)
  - RUMOR, ABDOMINAL, DIAGNOSIS, GAS INSUFFLATION (4897)•

- CARBOHYDRATE
  - ABSORPTION, INTESTINE, GLUCOSE, TANNIC ACID, BUTYRIC ACID, METHIONINE (4780)
  - CARDIOGLYCOSIDE, METABOLISM, ABSORPTION, BILE, EXCRETION (4779)•
  - D-FRUCTOSE, LIVER, METABOLISM (5211)
  - GLUCOSE, INTESTINE, WORM (5404)
  - GLUCOSE, MALABSORPTION, ERYTHROCYTE, MEMBRANE TRANSPORT (5084)
  - GLUCOSE, METABOLISM, LIVER, TOLBUTAMIDE TEST (4916)
  - GLUCOSE, INTESTINE, WORM (5404)
  - GLUCOSE, PERFUSION, LIVER, ENZYME, ACTIVITY, RAT (4745)
  - GLYCOGEN SYNTHESIS, BIOTIN DEFICIENCY, DIURNAL CYCLES (4836)•
  - GLYCOGEN SYNTHESIS, LIVER, RADIOACTIVITY, PRECURSOR, GLUCOSE INCORPORATION, MICE, GLUTAMIC ACID (4861)
  - HYPERGLYCEMIA, GASTRECTOMY, HYPERINSULINISM, PREDISPOSITION, DIABETES MELLITUS (4982)
  - LACTOSE, IRON UTILIZATION, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
  - METABOLISM, LIVER, PATHOLOGY (5180)
  - SIMPLE SUGAR, ABSORPTION, SMALL INTESTINE, WATER (4784)
  - SORBITOL, SMALL INTESTINE, RADIOLOGY, DIAGNOSIS (4913)
- CARCINOMA
  - ADENO, STOMACH, HEMOPATHIC, ANEMIA, YOUNG ADULT (5016)
  - COLON, ADENOMA, POLYP (4915)
  - COLON, SURGERY, ANTIBIOTIC (5118)
  - ESOPHAGUS, STENOSIS, PERFORATION, SURGERY (4965)
  - GALLBLADDER, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
  - GALLBLADDER, SURGERY (5309)
  - GASTRIC, FIBROMYOMA, BILLROTH-II-RESECTION, ULCER (4980)
  - LIVER, ANGIOGRAPHY, SPLENOPORTOGRAPHY, ARTERIOGRAPHY (4952)
  - LIVER, METASTASES, ULTRASONIC SCANNING, PARENCHYMAL DAMAGE (4892)•
  - MEDULLARY, THYROID, DIARRHEA, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)
  - MICRO, CIRRHOSIS, ESOPHAGEAL VARICES, SURGERY, MORTALITY (4966)
  - PANCREAS, 5-FLUOROURACIL, TELECOBALT (5136)•
  - PANCREAS, PANCREATITIS, CHRONIC, ACUTE, PSEUDOCYST, ABDOMINAL PAIN (5144)
  - PRIMARY, DUODENUM (5000)
  - STOMACH, SURGERY (4988), (4992)
  - STOMACH, SURGERY, GASTRECTOMY (5008)
- CATECHOLAMINE
  - HEPATOCYTE, TRANSMEMBRANE POTENTIAL, NICOTINE (4782)
  - NOREPINEPHRINE, EPINEPHRINE, STOMACH, ULCER, VAGOTOMY (5020)•
- CECUM
  - CONTAMINATION, RAT (4790)•
  - WALL, WATER TRANSPORT, RAT (4759)•
- CELIAC AXIS
  - DISEASE, STEATORRHEA, JEJUNUM, MUCOSA (5085)
  - HYDATID CYSTS, LIVER, ARTERIOGRAPHY, CYSTECTOMY (4934)
  - STENOSIS, SMALL INTESTINE, ENTERITIS (5069)
  - VASCULARIZATION, PANCREAS, LIVER, COLON (5145)
- CELIAC TRUNK
  - FIBROSIS, PANCREATITIS (5160)
- CHOLANGITIS
  - ICTERUS, ANEMIA, LIVER (4919)
  - MULTIFOCAL FIBROMATOSIS, XANTHOFIBROGRANULOMA, LIVER, BILE DUCT, ESOPHAGUS (5326)
  - SCLEROSIS, JAUNDICE, BILE (5307)
- CHOLECYSTITIS
  - ACUTE, GALLBLADDER, SURGERY (5305)
  - ACUTE, LIVER, SURGERY, PANCREATIC ENZYME, JAUNDICE, LIVER BIOPSY (5324)
  - LITHIASIS, CIRRHOSIS, LIVER PARENCHYMA, HYPOKINESIA (5302)
- CHOLERA
  - ETIOLOGY, ANTIGEN, PROTEIN, IMMUNOLOGY (5107)
  - FOWL, BACTERIA, IMMUNOLOGY (5363)
  - IMMUNOLOGY, BACTERIA, FOWL (5362)
  - IMMUNOLOGY, VACCINE, FOWL (5361)
- CIRCULATION
  - ANOXEMIA, HEPATIC INSUFFICIENCY, PROTHROMBIN, SHOCK, COAGULATION, NEWBORN INFANTS (5288)
  - BLOOD CLOTTING, CIRRHOSIS, VITAMIN K, FIBRINOGEN, THROMBOCYTE, SPLENOMEGALY (5290)
  - BLOOD FLOW, INTESTINE, ABSORPTION, WATER (4774)
  - BLOOD FLOW, LIVER, ANESTHESIA (5376)
  - BLOOD FLOW, LIVER, BILIGRAFIN, EXCRETION, CHOLANGIOGRAPHY (4873)•
  - BLOOD FLOW, LIVER FUNCTION, INDOCYANINE GREEN DYE, DENSITOMETER (4840)•
  - BLOOD FLOW, STOMACH, MUCOSA, ETHANOL, ASPIRIN (5382)
  - CROSS, HETEROGRAFT, LIVER, BABOON, COMA, MAN (5213)
  - DISSECTING, ANEURYSM, HEPATIC ARTERY, HEMORRHAGE (5395)
  - ENZYMATIC TOXEMIA, PANCREATITIS, HEMORRHAGE, EDEMA, NECROSIS (5154)
  - ENZYMATIC TOXEMIA, PERITONEAL EFFUSIONS, DIALYSIS, HYPOTHERMY, ACUTE PANCREATITIS, DOG (5148)
  - ERYTHROCYTE, GLUCOSE, MALABSORPTION, MEMBRANE TRANSPORT (5084)
  - ERYTHROCYTOSIS, POLYGLOBULISM, HEPATOMA, ELECTROPHORESIS, LIVER BIOPSY (5189)
  - ESOPHAGEAL, VARICES, HEMORRHAGE, SENGSTAKEN-BLAKEMORE TUBE (4973)•
  - HEMATOMA, COLON, ETIOLOGY, MESOCOLON (5105)

HEMODYNAMIC, LIVER, NERVOUS SYSTEM, PERIARTERIAL NEURECTOMY, VASOMOTOR ACTION (4874)
HEMOLYTIC ANEMIA, ALCOHOLIC CIRRHOSIS, BURR CELLS, JAUNDICE, HYPERSPLENISM (5294)
HEMORRHOIDS, RECTAL PROLAPSE, INCONTINENCE, SURGERY (5115)
HEMORRHOIDS, TREATMENT, DILATATION (5091)
HYPERBILIRUBINEMIA, CONGENITAL, LIVER, GILBERT'S SYNDROME (5205)
HYPERBILIRUBINEMIA, CRIGLER-NAJJAR SYNDROME, ICTERUS (5182)
HYPERBILIRUBINEMIA, HEPATIC INSUFFICIENCY, ENZYMATIC DEFICIT, DETOXIFICATION, GLYCOGENOSIS (5191)
HYPERBILIRUBINEMIA, LUMINAL TREATMENT, NEONATE (5220)
HYPERLIPEMIA, ALCOHOLIC CIRRHOSIS, ZIEVE'S SYNDROME, JAUNDICE, HEMOLYTIC ANEMIA (5284)
HYPERTRIGLYCERIDEMIA, ALCOHOL, LIPID METABOLISM, ELECTROPHORESIS (5227)
INFARCTION, MESENTERY, OBSTRUCTION (5379)
INTESTINAL, HYPEROSMOLARITY, HEMORRHAGE, VASOPRESSIN, SHOCK, MOTILITY (5338)
ISCHEMIA, INTESTINE, MALABSORPTION, SURGERY (5086)
LIVER, ANEURYSM, POLYARTERITIS, ARTERIOGRAPHY (4904)
LIVER DISEASE, ACUTE VENOUS OCCLUSION, LIVER BIOPSY, ELECTRON MICROSCOPY, PATHOLOGY (5168)•
MACROGLOBULINEMIA, HYPERPROTEINEMIA, LAENNEC'S CIRRHOSIS, PARAPROTEINS, IMMUNOELECTROPHORESIS (5287)
MESENTERIC INFARCT, EMBOLECTOMY, GRAFTS, REIMPLANTATIONS, THROMBOENDARTERIECTOMY, INTESTINAL RESECTION (5336)
PANCREAS, LIVER, COLON, CELIAC TRUNK, SURGERY, HEPATIC ARTERIES (5145)
PANCYTOPENIA, ACUTE HEPATITIS, APLASTIC ANEMIA, GASTROINTESTINAL BLEEDING, BONE MARROW (5266)
PLASMAPHERESIS, LIVER, ATROPHY, ULTRASTRUCTURE, LIVER BIOPSY (5293)
PLATELET, COAGULATION, HEPATOCELLULAR DISEASE, FIBRINOGEN (5203)
POLYCYTHEMIA, LIVER CARCINOMA, CIRRHOSIS, METASTASES, ERYTHROPOIETIC FACTOR (5193)
PORTACAVAL SHUNT, CIRRHOSIS, LIVER, HEMODYNAMICS, METABOLISM (5282)•
PORTAL HYPERTENSION, HEMORRHAGE, ESOPHAGEAL VARICES, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
PORTAL HYPERTENSION, PERIHEPATITIS, ANASTOMOSIS, SPLENECTOMY (5289)
PORTAL HYPERTENSION, RADIOLOGY, SURGERY (5298)
PORTAL, LIVER, CIRRHOSIS, PORTACAVAL ANASTOMOSIS (4940)
RHESUS INCOMPATIBILITY, JAUNDICE, LUMINAL THERAPY, XENOENZYME, ENTOPLASTIC RETICULUM, PROPHYLAXIS, NEWBORN INFANT (5201)
SEROLOGY, ENTAMEBA HISTOLYTICA, ANTIGEN (5403)
SERUM, BILIRUBIN, SPECTROPHOTOMETRY (4849)
SERUM, PROTEIN, SYNTHESIS, METHYLCOBALAMIN, LIVER DAMAGE, REGENERATION, RAT (4819)•
SMALL INTESTINE, LIPID ABSORPTION, MICELLE (4766)•
SMALL INTESTINE, MESENTERIC ARTERY OCCLUSION, HYPERMOTILITY (4788)•
SMALL INTESTINE, KCI EFFECTS, THIAZIDES, HYPEROSMOLARITY (4871)•
TELANGIECTASIA, HEMORRHAGE, ENDOSCOPY (5391)
TELEANGIECTASIA, HEMORRHAGE, GASTROINTESTINAL TRACT, MELENA (5386)
UREMIA, DIALYSIS, ILEAL LOOP, RENAL FAILURE, RAT (4777)
VASODILATION, JEJUNUM, MUCOSA (4868)

CIRRHOSIS
ALCOHOL, NECROSIS, FATTY LIVER (5224)
ALCOHOLIC, JAUNDICE, HEMOLYTIC ANEMIA, BURR CELLS, HYPERSPLENISM (5294)
ALCOHOLIC, ZIEVE'S SYNDROME, HYPERLIPEMIA, JAUNDICE, HEMOLYTIC ANEMIA (5284)
ALCOHOLISM, PANCREATIC FUNCTION, AMYLASE, LIPASE, PANCREOZYMIN (5278)
BILIARY DUCT, ATRESIA, OBSTRUCTIVE JAUNDICE, CHOLESTYRAMINE (5218)
BLOOD CLOTTING, VITAMIN K1, FIBRINOGEN, THROMBOCYTE, SPLENOMEGALY (5290)
CARBON TETRACHLORIDE, 3-METHYLCHOLANDTHRENE, AGE FACTOR, RAT (5277)•
CHRONIC HEPATITIS, HYPERSPLENISM, LIVER METASTASES, FATTY LIVER, THROMBOCYTOPENIA (5202)
CHRONIC HEPATITIS, IMMUNOGLOBINS, MITOCHONDRIA (5276)
CHRONIC HEPATITIS, THROMBOCYTOPENIA, HYPERSPLENISM, FATTY LIVER (5173)
ENZYME ACTIVITY, HEPATITIS, HEMOLYSIS, PLASMA, SERUM, SGOT, SGPT, LDH, LIVER METASTASES (4933)
ESOPHAGEAL VARICES, HEMORRHAGE, WEATHER CONDITIONS (4161)
ESOPHAGEAL VARICES, MICROCARCINOMA, SURGERY, MORTALITY (4966)
ETHANOL, LIPID (5246)
FAT, ALCOHOL, LIVER (5235)
FATTY LIVER, CHRONIC HEPATITIS, SERUM ALBUMIN, SERUM, GLOBULIN, ELECTROPHORESIS (5212)
FOLIC ACID, MALABSORPTION, LIVER BIOPSY, URINE, CHRONIC ALCOHOLISM, PTEROYLGLUTAMIC ACID (5074)
GASTROINTESTINAL HEMORRHAGE, ESOPHAGEAL VARICES, ULCER, ENDOSCOPY (5368)
HEPAMERZ, HEPATITIS, LIVER METASTASES, RADIATION, ASPARAGINE, ORNITHINE (5197)
HEPATIC CARCINOMA, POLYCYTHEMIA (5193)
HEPATITIS, ICTERUS, VIRUS (5263)
HYPERGLOBULINEMIA, JAUNDICE, HEPATITIS (5261)
HYPERPROTEINEMIA, MACROGLOBULINEMIA, IMMUNO-ELECTROPHORESIS, LAENNEC'S

PARAPROTEINS (5287)
  - IMMUNOSUPPRESSIVES, CHRONIC HEPATITIS, ACUTE INTOXICATION (5274)
  - JAUNDICE, GERIATRICS (5210)
  - JUVENILE, CUTANEOUS LESIONS, ALLERGY, CAPILLARIES, PARAKERATOSIS (5285)
  - LIVER, ABSORPTION, COBALT (5072)*
  - LIVER, BLOOD LIPIDS, FATTY ACIDS, CHOLESTEROL, HEPATIC INFILTRATION, COAGULATION (5291)
  - LIVER, DIMETHYL SULFIDE, MERCAPTONS, METHIONINE (5281)*
  - LIVER, FATTY ACID, BREATH (5280)*
  - LIVER, HEPATITIS, BILIRUBIN, PROTEIN FRACTIONS, GAMMA GLOBULIN, COAGULATION, AMMONIUM, TRANSAMINASE (4932)
  - LIVER, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)*
  - LIVER METASTASES, DIAGNOSIS, SCINTIGRAM, PHOTOSCAN (4922)
  - LIVER, PORTACAVAL SHUNT, HEMODYNAMICS, METABOLISM (5282)*
  - LIVER, PROGNOSIS, PORTAL CIRCULATION, HEMORRHAGE, PORTACAVAL ANASTOMOSIS (4940)
  - LIVER, PORTAL HYPERTENSION, STEATOSIS, NECROSIS (5295)
  - LIVER, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA, RESPIRATORY ALKALOSIS (5292)
  - LIVER SCAN, COLLOIDAL GOLD, AMEBIC ABSCESS (4889)*
  - MALABSORPTION, CALCIUM, VITAMIN D (5081)
  - METABOLISM, PROTEIN, DIET (5299)
  - PLEURAL EFFUSION, PLEURESY (5296)
  - PORTAL HYPERTENSION, ESOPHAGEAL VARICES, HEMORRHAGE (5286)
  - PORTACAVAL SHUNT, LIVER (5297)
  - POST-HEPATIC, MORTALITY RATE, ALCOHOL, DHOLELITHIASIS, HEMICOLECTOMY (5265)
  - ULTRASONIC SCANNING, CANCER, METASTASES, ASCITES (4892)*
  - VIRAL HEPATITIS, BILE SECRETION, VEDRENAN, MIGRAINE LITHIASIS (5172)

- COENZYME
  - LIVER, ENZYME, ALDEHYDE (4724)
- COLITIS
  - GRANULOMATOUS, ULCER, INFARCTION (5129)
  - GRANULOMATOUS ILEO-, IMMUNOSUPPRESSIVES, CORTICOIDS, FEVER, LYMPHOID HYPERTROPHY, ULCERATION (5135)
  - RECTO-, BISMUTHBILE, DIARRHEA, SORBITOL, CONSTIPATION (5253)
  - RECTO-, HEMORRHAGE, AZOTHIOPRINE (5106)
  - RECTO-, POSTOPERATIVE, HEMORRHAGIC, ILEORECTAL ANASTOMOSIS, PROGNOSIS, COLECTOMY (5123)
  - ULCER, SURGERY (5133)
  - ULCERATIVE, BILE DUCT, CANCER (5315)
  - ULCERATIVE, COLON, SURGERY (5124)
  - ULCERATIVE, DNA, HYPERSENSITIVITY, ANTIBODY, SALAZOPYRINE, TISSUE DAMAGE, AUTOLOGOUS LEUCOCYTES (5132)
  - ULCERATIVE, HEMORRHOIDS, ANAL PROLAPSE, ABSCESS, EXTRAINTESTINAL COMPLICATION, LIVER, EYES, VASCULAR (5130)
  - ULCERATIVE, REGIONAL ENTERITIS, CROHN'S DISEASE, ANTIBIOTIC, INTESTINAL FLORA, CYTOSTATICS (5127)
  - ULCERATIVE, ISOENZYME, LACTIC DEHYDROGENASE, RECTAL MUCOSA, RECTOSCOPY (5131)
  - ULCERATIVE, LIVER PERFUSION, COMA, HEMOSTASIS (5283)*
  - ULCERATIVE, MUCOSA, BIOPSY, ROENTGENOLOGY, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (4939)
  - ULCERATIVE, OIB TEST, LIVER DETOXIFICATION, GLUCURONIDATION, RADIO ISOTOPES, TRANSAMINASE, GLUCURONYLTRANSFERASE (5122)
  - ULCERATIVE, RECTO-, SURGERY, PSYCHIATRY, DIAGNOSIS, THERAPY, PSYCHOSOMATICS (5125)
  - ULCERATIVE, SURGERY, CONTINENECE, RECTUM, ILEUS, ILEOSTOMY, COLECTOMY, GASTRIC MUCOSA, ANASTOMOSIS (5128)
- COLON
  - ABSCESS, SURGERY, HEALING (5101)
  - ACUTE VOLVULUS, SURGERY, RECTO-SIGMOID INTUBATION, SMALL INTESTINE, PERFORATION (5121)
  - ADENOMA, CARCINOMA, POLYP (4915)
  - ANGIOTENSIN, ACETYLCHOLINE, SMOOTH MUSCLE CONTRACTIONS, AGONISTS (4795)*
  - APPENDIX, DIVERTICULITIS, APPENDICITIS, SURGERY (5103)
  - CANCER, RADIATION THERAPY, RECTUM (5112)
  - CANCER, SURGERY (5107)
  - CARCINOMA, SURGERY, ANTIBIOTIC (5118)
  - COLITIS, ULCER, SURGERY (5124)
  - DEFECATION, RECTUM, ANUS (4802)
  - DIVERTICULITIS, FISTULA (5117)
  - DIVERTICULITIS, SURGERY (5114)
  - HEMORRHAGE, RADIOGRAPHY (4900)
  - HEMORRHAGE, ULCER, DIVERTICULUM, TUMOR (4901)
  - ILEUM, MUCOSA, SURGERY, DUODENUM (5045)
  - INFARCTION, ULCERATION, COLITIS (5129)
  - LAXATIVES, ENEMA, DULCODOS, DULCOLAX, SENOKOT, COLON WASHOUT, ABDOMINAL RADIOGRAPH (5331)*
  - MEXASE, PANCREATITIS, BILIARY TRACT (5356)
  - MICROORGANISMS, PROTEIN, NITROGEN, VITAMINS, ENZYMATIC SECRETIONS, RABBIT (4886)*
  - MUCOSA, ELECTRICAL POTENTIAL (4800)
  - MUCOSA, LYMPHOSARCOMA (5392)
  - NEOANTE, OCCLUSIONS, PERITONITIS, RADIOLOGY, DIAPHRAGM, MALROTATION, HIRSCHPRUNG'S DISEASE (5058)
  - NEOSTIGMINE, ATROPINE, ILEUM, RECTUM (4804)
  - OBSTRUCTION, UROGENITAL SYSTEM (4902)
  - PARASITES, HELIGMOSOME NEMATODES, RODENTS (5405)
  - PLASMACYTOMA (5099)

- POLYPOSIS, GASTROINTESTINAL MUCOSA, GASTRECTOMY, COLOTOMY (5065)
- PSEUDOTUMORS, CHRONIC DIVERTICULTIIS, SIGMOID FLEXURE (4894)*
- RADIOLOGY, PREPARATION (4925)
- RECTOCOLITIS, HEMORRHAGE, AZOTHIOPRINE (5106)
- RECTUM, CANCER, METASTASES, CHEMOTHERAPY, SURGERY, LIVER (5198)
- SIGMOID, HEMATOMA, ETIOLOGY, MESOCOLON (5105)
- SLOW WAVES, OXYGEN CONSUMPTION, HYPOTHYROIDISM, RABBITS (4786)*
- SURGERY, PENICILLIN, BACTERIA (4881)
- ULCER, COLITIS, SURGERY (5133)
- ULCERATIVE COLITIS, CANCER, BILE DUCT (5315)
- ULCERATIVE, COLITIS, INTESTINAL COMPLICATIONS, LIVER, VASCULARITY, HEMORRHOIDS, EYES, ANAL PROLAPSE (5130)

COMA
- HEPATIC, AMMONIEMIA, HEMODYNAMICS, HETEROLOGOUS PERFUSION, BLOOD PLATELETS (5215)
- HEPATIC, HETEROGRAFT, BABOON, MAN, CROSS CIRCULATION (5213)
- JAUNDICE, HEPATIC CANCER, VIRAL HEPATITIS, HEMOLYTIC ANEMIA (5192)
- LIVER FAILURE, DIABETES, EXCHANGE TRANSFUSION (5240)
- LIVER PERFUSION, HEMOSTASIS, HEPATIC COMA, LEUCOCYTES, PLATELETS, CLOTTING FACTORS (5283)*

CONSTIPATION
- COW'S, MILK, DIARRHEA, DEHYDRATION (5366)
- RECTOPANBILINE GEL, DYSCHEZIA, FUNCTIONAL, CHRONIC (5094)

CROHN'S DISEASE
- APPENDIX, REGIONAL ENTERITIS (5067)
- ILEOSTOMY, SURGERY (5068)
- REGIONAL ENTERITIS, ANGIOGRAPHY, HYPERVASCULARIZATION (5066)
- ULCERATIVE COLITIS, REGIONAL ENTERITIS, CYTOSTATICS, INTESTINAL FLORA (5127)

CULTURE
- HEPATOCYTE, ATPASE, CHICK EMBRYOS, MITOCHONDRIA, L-CYSTEINE, AMNIOTIC CELLS, FIBROBLASTS (4741)*

CYTOLOGY
- ACINAR CELL, PANCREAS, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
- ENDOTHELIAL CELLS, LIVER, CHOLINESTERASE, LIVER MESODERM, CHICK (4736)
- HEPATIC CELL, CHOLESTEROL SYNTHESIS, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
- HEPATOCYTE, AMYLOID, DUCK (5184)
- HEPATOCYTE, NUCLEUS, MEMBRANE (4731)
- HEPATOCYTE, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE, NICOTINE (4782)
- TUMOR, STOMACH, DIAGNOSIS (4930)

CYTOSTATIC
- 5-FLUOROURACIL, RADIATION, CARCINOMA, PANCREAS (5136)*
- MITOMYCIN C, LIVER, ULTRASTRUCTURE, RABBIT (4709)*

DIABETES MELLITUS
- GASTRECTOMY, HYPERGLYCEMIA, HYPERINSULINISM, JEJUNUM (4982)
- HEPATIC FAILURE, EXCHANGE TRANSFUSION, COMA (5240)
- HEPATITIS, ICTERUS (5269)
- PANCREATITIS, ALCOHOLISM (5157)

DIAGNOSIS
- AMYLOCLASTIC TECHNIQUE, DUODENAL JUICE, AMYLASE, AUTOANALYZER (4812)
- ANGIOGRAPHY, ABDOMEN (4931)
- ANGIOGRAPHY, GASTROINTESTINAL HEMORRHAGE, ABDOMINAL AORTA, CAVOGRAPHY, PATHOMORPHISM, BARIUM, GALLBLADDER (4949)
- AORTOGRAPHY, ABDOMEN, SRUGERY (5359)
- ARTERIOGRAPHY, CELIAC DISEASE, PANCREAS, ADENOPATHY, ISCHEMIA (5348)
- ARTERIOGRAPHY, INTESTINAL HEMORRHAGE, DIVERTICULI (5351)
- ARTERIOGRAPHY, LIVER, ANEURYSM, POLYARTERITIS (4904)
- ARTERIOGRAPHY, PANCREATIC TUMOR, ADENOMA, MICROSCOPIC EXAMINATION (5146)
- AUTOANALYZER, PANCREATITIS, AMYLASE (4942)
- BETAZOL TEST, GASTRIC SECRETION, PYLOROPLASTY, VAGOTOMY, AMINOETHYLPYRAZOL (4943)
- BIOPSY SPECIMEN, TRANSDUODENAL SPHINCTEROTOMY, TECHNIQUE, VATER'S PAPILLA (4944)
- CHOLANGIOCHOLECYSTOGRAPHY, BILE DUCT, RADIOLOGY (4917)
- CHOLANGIOGRAPHY, BILIGRAFIN, EXCRETION, LIVER, BLOOD FLOW, CONTRAST MEDIA (4873)*
- CHOLECYST-CHOLANGIOGRAPHY, INFUSION, ADIPIODON, LIVER DISEASE, OBESITY, CONTRAST-FLUID INTOLERANCE (5252)*
- CHOLECYSTOGRAPHY, CHOLANGIOGRAPHY, BILE DUCT (4906)
- CHOLECYSTOGRAPHY, GALLBLADDER, DUPLICATION, CONGENITAL (5313)
- CHOLECYSTOGRAPHY, GALLSTONE (4918)
- CYST, ECCHINOCOCCUS, LIVER, SCAN (4887)*
- CYSTOMETRIC EXAMINATION, RECTUM, BLADDER PRESSURE, RETENTION, SURGERY (5095)
- CYTOLOGY, LYMPHOMA, STOMACH (4890)*
- CYTOPHOTOMETRY, NUCLEAR, DNA, LIVER, ACRIDINORANGE, PROTEIN BIOSYNTHESIS, GUINEA PIG, AGE FACTOR (4715)
- DISTOMATOSIS, CAPSULITIS, LIVER BIOPSY (4908)
- ENDOSCOPY, ESOPHAGEAL VARICES, HEMORRHAGE, SCLEROSIS (4960)
- ENDOSCOPY, ESOPHAGUS, STOMACH, ANESTHESIA, ULCER (4953)
- ENDOSCOPY, GASTROINTESTINAL TRACT, DIAZEPAM (4926)
- ENDOSCOPY, HEMORRHAGE, GASTROINTESTINAL TRACT, RADIOLOGY (4924)
- ENDOSCOPY, TELANGIECTASIA, HEMORRHAGE (5391)
- ESOPHAGOSCOPY, FIBERESOPHAGOSCOPE (4927)

- ESOPHAGOSCOPY, PERFORATION, MORTALITY, RUPTURE, DILATATION (4955)
- GASTROSCOPY, GASTRIC ULCER, HEMORRHAGE (4954)
- GASTROSCOPY, GASTRITIS, HISTOLOGY (5003)
- GASTROSCOPY, PYLORUS, STENOSIS, CERVIX SIGN (5002)
- GASTROSCOPY, STOMACH, FIBERSCOPY, GASTRO-CAMERA, CARCINOMA, SERIAL EXAMINATIONS (4923)
- HEPATIC INJURY, BSP TEST, STATISTICAL EVALUATION, LIVER PROTECTION, ALLYL ALCOHOL, RAT (4895)
- HETEROLOGOUS PERFUSION, HEPATIC COMA, BLOOD PLATELETS, AMMONIEMIA (5215)
- HODGKIN'S DISEASE, ABDOMEN, SURGERY (4911)
- I.V. PYELOGRAPHY, COLONIC PREPARATION, LAXATIVES, DULCODOS, DULCOLAX, SENOKOT (5331)*
- IMMUNOELECTROPHORESIS, HYDATID CYST, LIVER, ARTERIOGRAPHY, CYSTECTOMY (5402)
- IMMUNOFLUORESCENCE, DISTOMATOSIS, LAPAROSCOPY, COMPLEMENT FIXATION (4907)
- INDOCYANINE GREEN DYE, LIVER FUNCTION, BLOOD FLOW, DENSITOMETER (4840)*
- IRON-BINDING CAPACITY, HEMOCHROMATOSIS, GASTROFERRIN (5071)*
- LAPAROSCOPY, ABDOMINAL TRAUMA, PERITONEAL HEMORRHAGE, HEMATOMA, SURGERY (4909)
- LESION, LIVER, VASCULARIZATION, SCAN (4891)*
- LIVER CYSTATHIONINE, ASSAY (4735)
- LIVER DEHYDROGENASE, ASSAY (4737)
- LIVER DISEASE, SPLENOPORTOGRAPHY, ARTERIOGRAPHY, CARCINOMA, SURGERY (4952)
- LIVER LIPID, SPECTROPHOTOTOMETRIC METHOD, FATSPECIFIC DYE (5164)
- LIVER SCAN, RADIOISOTOPE SCAN, LIVER DISEASE, LIVER ABSCESS, AMEBIC ABSCESS, CIRRHOSIS (4889)*
- PANCREATIC JUICE, COLLECTION, SURGERY (4772)
- PHOTOSCANNING, SCINTIGRAM, LIVER METASTASES, CIRRHOSIS, RADIOIODINE, COLLOIDAL RADIOGOLD (4922)
- POSTOPERATIVE INTESTINAL OBSTRUCTION, ILEUS, X-RAY (5060)
- PRECANCEROUS INDICATIONS, INTESTINE, STOMACH, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
- RADIOGRAPHY, ALIMENTARY CANAL, BARIUM MEAL, ULCER, TUMOR THORAX, LUNG (4947)
- RADIOGRAPHY, HEMORRHAGE, SMALL INTESTINE, COLON, RECTUM (4900)
- RADIOLOGY, ABDOMEN, TRAUMA, CHILDREN (4920)
- RADIOLOGY, BARIUM SULFATE, GASTROINTESTINAL MOTILITY (4898)
- RADIOLOGY, COLON, PREPARATION (4925)
- RADIOLOGY, GALLBLADDER, CHOLELITHIASIS (5320)
- RADIOLOGY, GALLBLADDER, HYDROP (5319)
- RADIOLOGY, LARGE INTESTINE, POLYP, CHILDREN (5119)
- RADIOLOGY, MECKEL'S DIVERTICULUM, DIARRHEA, SURGERY (5051)
- RADIOLOGY, PANCREATIC DISEASE, ARTERIOGRAPHY, ANGIOSCINTIGRAPHY, SURGERY (4948)
- RADIOLOGY, PANCREATITIS (4905)
- RADIOLOGY, PORTAL HYPERTENSION, SURGERY (5298)
- RADIOLOGY, PROLAPSE, STOMACH, MUCOSA (4986)
- RADIOLOGY, SORBITOL, SMALL INTESTINE, DIAGNOSIS (4913)
- RADIOLOGY, STOMACH, CANCER (5009)
- RADIOLOGY, STOMACH, LEIOMYOSARCOMA, DIAGNOSIS (4995)
- RADIOLOGY, STOMACH, ULCER, TUBERCULOUS ULCER, RECESS, ENDOSCOPY, GREATER CURVATURE (5023)
- RADIOLOGY, TERATOMA, ABDOMEN, INFANT (4914)
- RADIOLOGY, TUMOR, DUODENUM, METASTASES (5012)
- RECTO-SIGMOIDOSCOPY, VOLVULUS, RECTO-SIGMOID INTUBATION, SMALL INTESTINE (5121)
- SCAN, PANCREAS, LIVER (4749)
- SCINTOGRAPHY, HYDATID CYSTS, ECHINOCOCCOSIS, TUMORS (4946)
- SPECTROPHOTOMETRY, BILIRUBIN, SERUM (4849)
- TECHNETIUM 99M, GASTRIC SCANNING, GASTRIC SECRETION, MUCOSA (4888)
- TOLBUTAMIDE TEST, LIVER, METABOLISM, GLUCOSE (4916)
- TUMOR, STOMACH, ESOPHAGUS, GASTROSCOPY (4957)
- ULCERATIVE COLITIS, OIB TEST, HEPATIC DETOXIFICATION, GLUCURONIDATION (5122)
- ULCERATIVE COLITIS, RECTOSCOPY, RECTAL MUCOSA, LACTIC DEHYDROGENASE, ISOENZYME (5131)
- ULTRASONIC SCANNING, LIVER, CIRRHOSIS, METASTASES, CARCINOMA, ASCITES (4892)*
- X-RAY, STOMACH, DUODENUM, GALLBLADDER, SEX DIFFERENCE, ULCER (5041)*

DIARRHEA

- CHOLERA, ETIOLOGY, ANTIGEN, IMMUNOLOGY (5107)
- COW'S MILK, GASTRIC JUICE, VEGETABLES (5366)
- DUMPING SYNDROME, DUODENUM, ILEUM, ION (5080)
- ENTERITIS, ANTIBIOTIC, NEONATE (5371)
- MECKEL'S DIVERTICULUM, RADIOLOGY, SURGERY (5051)
- THYROID TUMOR, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)
- VAGOTOMY, STOMACH, ACID (5375)

DIET

- BILE, CHOLESTEROL, GALLSTONE (5314)
- FAT, LIVER, ALCOHOL (5236)
- FISTULA, FECES (5116)
- LIPID, METABOLISM (4848)
- PELLETED, GASTRIC SECRETION, ENERGY REQUIREMENT, LABORATORY ANIMALS (4879)

- PROTEIN, LIVER INJURY (5250)
- PROTEIN, METABOLISM, CIRRHOSIS (5299)
- WEIGHT, MALNUTRITION, PROTEIN, CHILD MORTALITY, SENEGALESE CHILDREN (5349)

DIGESTION
- FAT, ABSORPTION, ENZYME (4773)
- PROTEIN, ABSORPTION, MAN (4768), (4769)
- SMALL INTESTINE, SECRETION, ION, SHEEP (4877)

DIVERTICULUM
- DIVERTICULITIS, APPENDIX, APPENDICITIS, SURGERY (5103)
- DIVERTICULITIS, COLON, FISTULA (5117)
- DIVERTICULITIS, COLON, SURGERY (5114)
- DIVERTICULOSIS, JEJUNUM, MALABSORPTION, OSTEOMALACIA, RICKETS (5078)
- DIVERTICULITIS, PSEUDO TUMORS, DOUBLE CONTRAST, SIGMOID COLON, STENOSIS, INFLAMMATION (4894)•
- DUODENUM, OBSTRUCTION, BILIARY TRACT (5317)
- DUODENUM, PERFORATION, ENTEROLITH (4997)
- MECKEL'S, INTESTINE, HEMORRHAGE, SURGERY, GASTRIC MUCOSA, SHOCK (5064)
- MECKEL'S, PERFORATION, PERITONITIS, SURGERY, NEWBORN, INTESTINAL OBSTRUCTION (5050)

DRUG
- AMPICILLINE, BILIARY TRACT, BACTERIAL INFECTION, JAUNDICE, LITHIASIS (5323)
- ATROPINE, ILEUM, COLON, RECTUM (4804)
- COLCHICINE, PEPTIDASE, DISACCHARIDASE, SMALL INTESTINE (4711)•
- DIAZEPAM, ENDOSCOPY, GASTROINTESTINAL TRACT (4926)
- DIMETHYL SULFIDE, MERCAPTONS, METHIONINE, CIRRHOSIS (5281)•
- DOGMATIL, DIGESTIVE DISEASES, ANTIDEPRESSANT, PSYCHOTROPIC DRUG, HYPOTHALAMIC CENTER (5335)
- DOGMATIL, SULPHIRIDE, PEPTIC ULCER, HYPOTHALAMIC CENTER (5035)
- DYSENTERY, AMOEBIASIS (5383)
- EUBIOSIS, INTESTINE (5406)
- HEMOSTATIC, PEPTIC ULCER, STOMACH, HEMORRHAGE (5007)
- IMMUNOSUPPRESSIVES, GRANULOMATOUS ILEOCOLITIS, FEVER, LYMPHOID HYPERTROPHY, ULCERATION, CORTICOIDS (5135)
- ISONIZID, HEPATIC LESION, ANTITUBERCULAR ACTIVITY, LUNG TUMOR, RIFAMPICINE (5230)
- METHYSERGIDE, DUMPING SYNDROME, ANTISEROTONIN, GASTRECTOMY, GASTROENTEROSTOMY, ULCER (5079)
- NEMATICIDE, TETRACHLOROTHIOPHENE, PESTICIDE, MICE, SYPHACIA OBVELATA (5408)
- PANCREABIL, L L 505, CHOLERETIC, ANTISPASMODIC, CONSTIPATION, POSTHEPATITIS (5354)
- PENTOBARBITAL, PHENOBARBITAL, HEPATIC ENZYME INDUCTION, REVERSIBILITY, SLEEPING TIME, MICE (4743)
- SILYMARIN, FATTY LIVER, ALCOHOLISM, BLOOD CHEMISTRY, ELECTRON MICROSCOPY, PARENCHYMAL DAMAGE (5165)
- SODIUM OXYFERRISCORBONE, PEPTIC ESOPHAGITIS, ENDOSCOPY, GASTRODUODENAL ULCER, HYPERACIDITY (4958)
- SULFOBROMOPHTHALEIN, BILIARY TRANSPORT, GLUTATHIONE CONJUGATE, BILIARY EXCRETION, HEPATIC UPTAKE (4754)•
- SULFOBROMOPHTHALEIN, CLEARANCE, LIVER, RAT, HALOTHANE EXPOSURE (5223)•
- SULPIRIDE, GASTRODUODENAL ULCER, HEMORRHAGE, ARTERIAL TENSION, DUMPING SYNDROME (5038)
- TRANQUILIZER, ULCER, STOMACH, DUODENUM, GASTRIC SECRETION (5040)

DUODENUM
- ACID, SECRETION, STOMACH (4866)
- ATRESIA, STENOSIS, OCCLUSION, MESENTERY ARTERY, MALROTATION (5013)
- BILLROTH RESECTION, PERITONITIS, ANTIBIOTICS, DUODENAL FISTULA, DRAINAGE, PROTEASE INHIBITORS (4983)
- CARCINOMA (5000)
- CONTRACTION, NICOTINE, STOMACH (4801)
- CYST, BILE DUCT, STONE (5318)
- CYSTIC DYSTROPHY, STENOSIS (5147)
- DIVERTICULUM, BILIARY TRACT, OBSTRUCTION (5317)
- DIVERTICULUM, PERFORATION, ENTEROLITH (4997)
- DUMPING SYNDROME, ILEUM, ION (5080)
- DUODENAL BULB, MUCOSA, STOMACH (5004)
- DYSKINESIA, OBSTRUCTIVE JAUNDICE, ODDI SPHINCTER, RADIOKINETICS (5322)
- FISTULA, TRYPSIN INACTIVATOR, ACUTE PANCREATITIS (4981)
- ILEUM, COLON, MUCOSA, SURGERY (5045)
- ISOLATED, BRADYKININ, PROSTAGLANDIN E1, MOTILITY, RAT (4797)•
- JUICE, AMYLASE, DETERMINATION, AMYLOCLASTIC TECHNIQUE, AUTOANALYZER (4812)
- MUCOSA, EPITHELIUM, ULTRASTRUCTURE, GOLGI APPARATUS, TRACER STUDY (4704)•
- NICOTINE ACTION, CONTRACTILITY, DOG (4793)•
- OBSTRUCTION, GALLSTONE (5330)
- PARAGANGLIOMA, NONCHROMAFFIN (5001)
- STENOSIS, DYSPNEA, CYANOSIS, ATRESIA, EMERGENCY, CHILDREN (5345)
- TRANS-SPHINCTEROTOMY, TECHNIQUE BIOPSY, VATER'S PAPILLA (4944)
- TUMOR, RADIOLOGY, PAPILLOMA, METASTASES (5012)
- ULCER, DOGMATIL, SULPIRIDE (5035)
- ULCER, GASTRECTOMY, PYLOROPLASTY, PANCREAS (4993)
- ULCER, RESECTION, JEJUNAL ULCER, PERITONITIS, VAGOTOMY, DYSTONIA, PAIN, NUTRITION (5025)
- ULCER, GASTRIC RESECTION, PANCREATITIS (5155)

- ULCER, GASTRIC RESECTION, VAGOTOMY, PYLORIC STENOSIS, HYPERSECRETION (4951)
- ULCER, GASTRIC SECRETION, ACID (5033)
- ULCER, GASTRIC SECRETION, HISTAMINE, GASTRIN, PEPSIN (4935)
- ULCER, GASTRIC ULCER, GASTRIC SECRETION, TRANQUILIZER (5040)
- ULCER, MOTILITY, SURGERY (5032)
- ULCER, PERFORATION, PYLOROPLASTY (5028)
- ULCER, SMOKING, STOMACH (5029)
- ULCER, STOMACH, SURGERY (5027)
- ULCER, SURGERY (4899)
- ULCER, SURGERY, ERRORS, SECRETION TEST, VAGOTOMY RESECTION, ACIDITY (5036)
- ULCER, SURGERY, RECURRENCE (5037)
- ULCER, SULPIRIDE, HEMORRHAGE, DUMPING SYNDROME (5038)
- ULCER, VAGOTOMY, PARIETAL CELL MASS (5030)

DYSENTERY
- DRUG, AMOEBIASIS (5383)

DYSPEPSIA
- GASTRIC JUICE, COW'S MILK, CONSTIPATION, DIARRHEA, DEHYDRATION, VEGETABLES (5366)
- L L 505, CHOLERETIC, ANTISPASMODIC, CONSTIPATION, POST-HEPATITIS, MIGRAINE, PANCREABIL (5354)
- LIVER, METASTASES, ALKALINE PHOSPHATASE, LAPAROSCOPY, HYPOCHONDRIUM (5204)

ELECTROLYTE
- CALCIUM, ABSORPTION, INTESTINE, VITAMIN D3, STRONTIUM (4775)
- CALCIUM, MALABSORPTION, CIRRHOSIS (5081)
- GASTROENTERITIS, UREA (5385)
- IRON, ABSORPTION, INTESTINE, REGULATION, FERRITIN (4755)*
- IRON, ACCUMULATION, LIVER, RADIOIRON KINETICS, HEMATOLOGICAL DISEASE, HUMAN-PHANTOM-REMCAL (5251)
- IRON, METABOLISM, IRON-BINDING CAPACITY, HEMOCHROMATOSIS (5071)*
- IRON UTILIZATION, ABSORPTION, LACTOSE, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
- NUTRITION, GASTROENTERITIS (5384)
- OSTEOMALACIA, JEJUNUM, DIVERTICULOSIS, MALABSORPTION, RICKETTS (5078)
- OSTEOMALACIA, PANCREATITIS, BLIND LOOP SYNDROME, MALABSORPTION (5159)
- OSTEOMALACIA, RENAL, CADMIUM, ITAI ITAI DISEASE (5388)
- POTASSIUM CHLORIDE, GASTROINTESTINAL TRACT, GASTRIC PERFORATION, ULCERATION, GASTRIC MUCOSA (4984)
- POTASSIUM CHLORIDE, ULCER, INTESTINE, MUCOSA, STENOSIS (5048)
- RUTIN, CONCREMENT, LIVER, BILE DUCT, SIDE EFFECT, INFLAMMATION, ANIMAL EXPERIMENT (5228)
- SALT LOADING, ILEUM, ABSORPTION, CAT (4783)
- SODIUM, ABSORPTION, INTESTINE, SUGAR (4771)
- SODIUM, SMALL INTESTINE, GLYCINE TRANSPORT, BIRD (4776)

ENDOCRINE SYSTEM
- CIRCADIAN RHYTHM, BILE ACIDS, CHOLESTEROL-7-ALPHA-HYDROXYLASE, RIBONUCLEIC ACIDS, RIBOSOMAL PROTEINS (4853)
- HYPOPHYSECTOMY, NUCLEIC ACIDS, ZINC, MANGANESE, LIVER, RAT (4829)*
- HYPOTHYROIDISM, SURGERY, SLOW WAVES, COLON, ILEUM, OXYGEN CONSUMPTION, RABBITS (4786)*
- ISLET CELL, PANCREAS, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
- THYROID, TUMOR, DIARRHEA, MEDULLARY CARCINOMA, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)

ENTERITIS
- ANTIBIOTIC, DIARRHEA, NEONATE (5371)
- CLOSTRIDIUM, DIARRHEA, SMALL INTESTINE (4884)
- CROHN'S DISEASE, HYPERVASCULARIZATION, MESENTERIC ARTERY, ANGIOGRAPHY (5066)
- HEMORRHAGE, GASTROINTESTINAL TRACT (5070)
- JEJUNUM, ILEUM, OSCARIS (5358)
- MALABSORPTION, PANCREATIC INSUFFICIENCY (5076)
- REGIONAL, CROHN'S DISEASE, APPENDIX (5067)
- REGIONAL, ULCERATIVE COLITIS, CROHN'S DISEASE, CYTOSTATICS, ANTIBIOTIC (5127)
- SMALL INTESTINE, STENOSIS, CELIAC ARTERY (5069)

ENZYME
- ACTIVITY, HEPATITIS, CIRRHOSIS, METHODS, HEMOLYSIS, SGOT, SGPT, SERUM, LDH, PLASMA, LIVER METASTASES (4933)
- ACTIVITY, PANCREAS, AMYLASE, LIPASE, CHYMOTRYPSIN, RAT EMBRYO, METHIONINE DEFICIENCY (4701)*
- ADENOSINE TRIPHOSPHOTASE, HEPATOCYTES, CELL CULTURE, FIBROBLASTS, CHICK EMBRYO (4741)*
- ALDOLASES, HEPATOMA, YOSHIDA ASCITES, ALDOLASE C (5175)*
- ALKALINE PHOSPHATASE, AMINOPEPTIDASE, ATPASE, GLUCURONIDASE, VIRAL HEPATITIS, ACUTE ATROPHY (5267)
- ALKALINE PHOSPHATASE, INTESTINE, X-IRRADIATION, RAT (4721)
- ALKALINE PHOSPHATASE, LIVER, METASTASES, DYSPEPSIA, LAPAROSCOPY, HYPOCHONDRIUM (5204)
- AMYLASE, DUODENAL JUICE, DETERMINATION, AMYLOCLASTIC TECHNIQUE, AUTO-ANALYZER (4812)
- AMYLASE, LIPASE, PANCREATITIS, BILIARY LITHIASIS, ABDOMINAL PAIN, LEUCOCYTE (5153)
- AMYLASE, PANCREATITIS, ALBUMIN (5156)
- AMYLASE, PANCREATITIS, DIAGNOSIS, AUTOANALYZER (4942)
- AMYLASE, PANCREATITIS, SHOCK, TRYPSIN INHIBITORS, INTERNAL BURN (5150)
- AMYLASE, SECRETION, PANCREAS (4816)

CARBOXYLASE, LIVER, HISTOCHEMISTRY, MICROSOMES, PHOSPHOPYRUVATE (4689)*
CHOLESTEROL-7 ALPHA-HYDROXYLASE, CIRCADIAN RHYTHM, BILE ACIDS, RIBONUCLEIC ACIDS, RIBOSOMAL PROTEINS (4853)
CHOLINESTERASE, EMBRYONIC LIVER, ENDOTHELIAL CELLS, CHICK (4736)
CYSTATHIONINE, ASSAY, LIVER (4735)
DEHYDROGENASE, ASSAY, LIVER (4737)
DEHYDROGENASE, OXIDOREDUCTASE, LIVER, METABOLISM (4857)
DISACCHARIDASE, PEPTIDASE, COLCHICINE, JEJUNUM (4711)*
DISULFIDE REDUCTASE, TRANSHYDROGENASE, MICROSOMES, NADH, PYRIDINE NUCLEOTIDES (4688)*
DRUG-METABOLISM, LIVER, EMETINE (4708)*
FAT, ABSORPTION, DIGESTION (4773)
GALACTOSYL-TRANSFERASE, INTESTINAL MUCOSA, CYTOPLASMIC FRACTIONS, GLYCOPROTEINS, RAT (4742)*
GAMMA-GLUTAMYL-TRANSPEPTIDASE, ALKALINE PHOSPHATASE, LIVER METASTASES, OBSTRUCTIVE JAUNDICE (4936)
GLUCURONIDASE, GASTRIC MUCOSAL CELL, GASTRIC JUICE (4976)*
GLUCURONYL TRANSFERASE, LIVER, BILIRUBIN, MENTHOL (4844)*
GLUCURONYLTRANSFERASE, LIVER, URANYL NITRATE, RENAL ACTIVITY, RAT (5225)
HEPATIC, MONOAMINE OXIDASES, MITOCHONDRIA, ELECTROPHORESIS, RADIOISOTOPE ASSAY (4691)*
INHIBITORS, ACUTE PANCREATITIS, LIPASE, ANTITHROMBIN III, SPLANCHNIC BLOCK (5163)
INHIBITORS, TRYPSIN, PANCREATITIS, CONTRYCAL, DUODENAL FISTULA (4981)
INTESTINAL, GLYCOSIDASE, DISACCHARIDE, CARBOHYDRATE, ABSORPTION, DIARRHEA, MEMBRANE PERMEABILITY (4870)*
INTESTINAL, FATS, EMULSIFICATION, LIPASE, TRIGLYCERIDE, HYDROLYSIS, ATP (4869)*
INTESTINE, MUCOSA, DNA (4723)
INTESTINE, MUCOSA, RAT (4748)
ISO-, GLUCOSE-6-PHOSPHATE-DEHYDROGENASE, LIVER EXTRACT, ERYTHROCYTE, RAT (4740)
ISO-, ULCERATIVE COLITIS, LACTICDEHYDROGENASE, RECTOSCOPY, ISOENZYME, RECTAL MUCOSA (5131)
ISOENZYME, LIVER, PURIFICATION, HUMAN, CHICKEN (4717)
LECITHIN-CHOLESTEROL ACYLTRANSFERASE, OBSTRUCTIVE, JAUNDICE (5301)*
LIPASE, PANCREAS, TETRACYCLINE (4814)
LIPASE, PANCREAS, TRIOCTANOIN (4817)
LIPASE, SMALL INTESTINE, PANCREAS, SECRETION, TRIBUTYRINE (4815)
LIVER, ADENOSINE, NUCLEOTIDE (4850)
LIVER, ALLYL ALCOHOL, LDH, TRANSAMINASE, MALIC DEHYDROGENASE, RATS (5174)*
LIVER, COENZYME, ALDEHYDE (4724)
LIVER, DEHYDROGENASES, AMINO ACID CATABOLISM, ALPHA-KETO ACIDS (4818)*
LIVER, GLYCEROL, TROUT (4846)
LIVER, ISOZYME (4728)
LIVER, INTERACTION, NUCLEOSIDE (4862)
LIVER, KIDNEY, AMPHIBIAN (4845)
LIVER, KWASHIORKOR, CHILDREN (5394)
LIVER, MICROSOME, WAX (4720)
LIVER, MITOCHONDRIA (4725)
LIVER, MITOCHONDRIA, CHICKEN (4719)
LIVER, MITOCHONDRIA, DEVELOPMENT (4727)
LIVER, MITOCHONDRIA, RAT, KINETICS (4843)*
LIVER, RAT, FOLATE, T4 INFLUENCE (4827)*
MEXASE, COLON, PANCREATITIS, BILIARY TRACT (5356)
MICROSOMAL HYDROXYLASE, LIVER, INDUCTION, REVERSIBILITY, SLEEPING TIME, BARBITURATE METABOLISM, RAT (4744)
MICROSOMAL HYDROXYLASE, LIVER, PENTOBARBITAL, SLEEPING TIME, INDUCTION (4743)
MICROSOME, LIVER, RAT (4716)
MITOCHONDRIAL DEHYDROGENASE, GASTRIC MUCOSA, BIOPSY, ELECTRON MICROSCOPY (4977)
MONOAMINE OXIDASE, LIVER MITOCHONDRIA, RADIOISOTOPE ASSAY, ELECTROPHORESIS, RAT (4691)*
MONOXYGENASE, LIVER, ADRENAL, MICROSOME, GUINEA PIG (4732)
MUCOSA, STOMACH, ATP (4751)
NEUTRAL, ACID B-GALACTOSIDASE, SMALL INTESTINE (4864)*
ORNITHINE AMINOTRANSFERASE, IMMUNOFLUORESCENCE, LIVER, RAT (4700)*
ORNITHINE-CARBAMYL TRANSFERASE, HEPATOMEGALY, AMEBIASIS, HISTOLOGICAL LESIONS, RADIOGRAPHY (5397)*
OXIDASE, MICROSOME, LIVER (4858)
PANCREAS, SECRETION, FASTING (4813)
PANCREATIC, LIPASE, AMYLASE, CHRONIC PANCREATITIS, ACUTE PANCREATITIS, PANCREOZYMIN (4938)
PEPSIN, GASTRICSIN, AMINO ACID, HUMAN (4810)
PHOSPHATASE, GLUCOSE-6, THIAMINE PYROPHASPHATASE, JEJUNUM, EPITHELIUM (4703)*
PROTEASE, PAPAIN, HEPATIC REGENERATION, PARTIAL HEPATECTOMY, RATS (4851)
PROTEIN, INTESTINE, ABSORPTION (4767)
REDUCTASE, METYRAPONE, MICROSOME, LIVER (4839)*
REGULATORY MECHANISM, INTESTINE, EPITHELIAL CELLS, CYCLOHEXAMIDE, ACTINOMYCIN D (4692)*
RIBONUCLEASE, PANCREAS, PROTEIN (4750)
SECRETION, COLON, NUTRITION (4886)*
SUBCELLULAR, THREONINE DEFICIENCY (4694)*
SUPPRESSION, PYRUVATE CARBOXYLASE, GLUCOSE, LIVER, RAT (4745)
SYNTHETASE, PANCREAS, TRYPTOPHANYL-TRNA, SPECTROFLUOROMETRY, PROTEIN CHROMOPHORES, TRYPTAMINE (4738)
THIAMIN PYROPHOSPHAKINASE, TRANSKETO-

  - LASE, PANCREAS, THIAMIN ABSORPTION, PHOSPHORYLATION, INTESTINE, RAT (5143)
  - TRANSAMINASE, LIVER DISEASE, EXERCISE, CHRONIC HEPATITIS, SUBSIDING HEPATITIS, CIRRHOSIS, LIVER CELL PERMEABILITY (4937)
  - TYROSINE AMINOTRANSFERASE, INDUCTION, HEPATOMA, GLUCOCORTICOID BINDING, CORTISOL, HEXAMETHASONE (5170)*
- EPIDEMIOLOGY
  - HEMORRHOID, RECTUM, PREGNANCY (5102)
  - HEPATITIS, ADOLESCENT (5262)
- ESOPHAGUS
  - ARTIFICIAL, SURGERY, PERFORATION, STENOSIS, CARCINOMA, CARDIA (4965)
  - ATRESIA, FISTULA, CATHETERIZATION, RADIOLOGY, BARIUM OXIDE, LIPIODOL, ANASTOMOSIS (4956)
  - ATRESIA, FISTULA, SURGERY (4971)
  - CANCER, MEDIASTINAL TUMOR, EPITHELIOMA, RADIOLOGY (4962)
  - CANCER, STENOSIS, CICATRIX, MALIGNANT DEGENERATION (4947)
  - CARDIA, ACHALASIA, SURGERY (4972)
  - CYANOSIS, DYSPNEA, ATRESIA, CHILDREN, EMERGENCY (5345)
  - ELECTRICAL ACTIVITY, GASTROESOPHAGEAL SPHINCTER, INTRALUMINAL PRESSURE, DEGLUTITION (4789)*
  - ESOPHAGOSCOPY, FIBERESOPHAGOSCOPE (4927)
  - MOTILITY, ANASTOMOSIS, HEMORRHAGE (4964)
  - PERFORATION, ANESTHESIA, TRACHIAL INTUBATION, CERVICAL PAIN, EMPHYSEMA, ESOPHAGOSCOPY, RADIOGRAPHY, PLEURISY, SURGERY (4975)
  - PERFORATION, DILATATION, RUPTURE, ESOPHAGOSCOPY, MORTALITY (4955)
  - PEPTIC ESOPHAGITIC, GASTRODUODENAL ULCER, HYPERACIDITY, OXYFERRISCORBONE, ENDOSCOPY (4958)
  - RECONSTRUCTION, GASTROINTESTINAL TUBES, HUMORAL FACTORS (4798)
  - RUPTURE, PYLORUS, OBSTRUCTION (4970)
  - STOMACH, SURGERY, CANCER (4928)
  - STOMACH, CARDIAC INFARCT, ANEURYSM, ARTERIOSCLEROSIS, EMOTIONAL FACTOR (4967)
  - TUMOR, GASTROSCOPY, HIATUS HERNIA, POLYP, STOMACH, DIVERTICULI (4957)
  - ULCER, ESOPHAGOSCOPY, ANESTHESIA, DIAGNOSIS (4953)
  - VARICES, CIRRHOSIS, MICROCARCINOMA, SURGERY, MORTALITY (4966)
  - VARICES, GASTROINTESTINAL HEMORRHAGE, ULCER, ENDOSCOPY, CIRRHOSIS, HEMANGIOMA (5368)
  - VARICES, HEMORRHAGE, ENDOSCOPY, SCLEROSIS (4960)
  - VARICES, HEMORRHAGE, SENSTAKEN-BLAKEMORE TUBE (4973)*
  - VARICES, HEPATIC COMA, HEMORRHAGE, BILIRUBIN, CARCINOMA (5342)
  - VARICES, WEATHER, HEMORRHAGE, CIRRHOSIS (4961)
  - VARICES, PORTAL HYPERTENSION, HEMORRHAGE, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
- EXCRETION
  - BILE, ABSORPTION, CARDIOGLYCOSIDE (4779)*
  - BILE, BODY TEMPERATURE, SKF 535-A, INDOCYANINE GREEN, BILE FLOW (4860)*
  - SALMONELLA, STRESS, PIG (5357)
  - STEROID, LIVER, PERFUSION, RAT (4762)*
  - SULFOBROMOPHTHALEIN, LIVER, STEROID, RAT (4833)*
- FECES
  - DEFECATION, CONTINENCE, COLON, RECTUM, ANUS (4802)
  - FISTULA, DIET (5116)
  - GIARDIASIS, BACTERIA, PARASITE, VIRUS (4880)
  - STEROID, HUMAN, METABOLISM (4875)
- FEVER
  - TYPHOID, CHLORAMPHENICOL, PENICILLIN, STEROIDS, ELECTROLYTES, INTESTINAL HYPERMOTILITY (5333)
- FIBROSIS
  - CELIAC TRUNK, PANCREATITIS (5160)
  - HEPATIC, TUBULAR ECTASIA, RENAL LESION, PYELITIS, UROGRAPHY (5187)
  - LIVER, RAT, REVERSIBILITY, COLLAGEN (5222)*
- FUNGUS
  - CANDIDA, GASTROINTESTINAL TRACT (5374)
- GALLBLADDER
  - BILE STONES, ULTRASONIC DETECTION, A-SCANNING (4893)*
  - BILIARY TRACT, SURGERY, LIVER (5308)
  - CARCINOMA, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
  - CARCINOMA, GALLSTONE, CHOLECYSTECTOMY (5311)
  - CARCINOMA, SURGERY (5309)
  - CHOLANGITIS, SCLEROSIS, JAUNDICE, BILE (5307)
  - CHOLECYSTITIS, SURGERY (5305)
  - CHOLECYSTOGRAPHY, GALLSTONE (4918)
  - CHOLELITHIASIS, PANCREAS, SECRETION (5329)
  - CHOLELITHIASIS, RADIOLOGY (5320)
  - DUPLICATION, CONGENITAL, CHOLECYSTOGRAPHY (5313)
  - DYE TRANSPORT, BSP, EXCRETION, GLUTATHIONE CONJUGATES (4754)*
  - GALLSTONE DUODENUM, OBSTRUCTION (5330)
  - GALLSTONE, ILEUS (5047)
  - GALLSTONE, ILEUS, SURGERY (5054)
  - GALLSTONE, CHOLECYSTECTOMY, THROMBOSIS, JAUNDICE (5328)
  - HYDROP, RADIOLOGY (5319)
  - ILEUM, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)*
  - LIVER DISEASE, CHOLECYSTOGRAPHY, LIVER PARENCHYMA, HYPERKINESIA (5302)
  - MULTISEPTATE, EMBRYOGENESIS (5316)
  - PERFORATION, GALLSTONE, AGE FACTOR, SEX FACTOR, NUTRITION (5325)
  - STENOSIS, AMPULLA OF VATER, SPHINCTERECTOMY (4999)
  - SURGERY, VAGOTOMY (5178)
  - X-RAY, STOMACH, DUODENUM, SEX DIFFERENCE, GALLSTONES (5041)*
- GAS
  - GANGRENE, APPENDICITIS, PERFORATION, FATAL, DRAINAGE (5097)

GASTROINTESTINAL TRACT
  - BACTERIA, ELECTRON MICROSCOPY, INSECT (4876)
  - CANCER, ULCER, POLYP, STOMACH, INTESTINE (5367)
  - CANDIDA (5374)
  - DOGMATIL, ANTIDEPRESSANT, PSYCHOTROPIC DRUG, HYPOTHALAMIC CENTER, ANXIETY (5335)
  - DYSPNEA, CYANOSIS, ATRESIA, STENOSIS, CHILDREN, ESOPHAGUS, DUODENUM (5345)
  - ENDOSCOPY, DIAZEPAM (4926)
  - ESOPHAGUS, STOMACH, DUODENUM, ULCER, HIATAL HERNIA, BISMUTHBILE, SORBITOL, RECTOCOLITIS (5352)
  - FATTY ACID, METABOLISM, LIPID (4883)
  - FOOD-POISONING, DIARRHEA, STAPHYLOCOCCI, BACTERIOPHAGE, EPIDEMIC (5353)
  - GASTROENTERITIS, ELECTROLYTE, UREA (5385)
  - GASTROENTERITIS, NUTRITION, ELECTROLYTE (5384)
  - GASTROENTERITIS, VIBRIO, MARINE (5393)
  - HEMORRHAGE, ABDOMEN, AORTA, CAVOGRAPHY, ANGIOGRAPHY, GALLBLADDER (4949)
  - HEMORRHAGE, ENTERITIS (5070)
  - HEMORRHAGE, MELENA, TELEANGLECTASIA (5386)
  - HEMORRHAGE, TREATMENT, DOG (5370)
  - ISO-ANTIBODIES, AUTO-IMMUNE, ANTI-COLON, HUMAN (5126)
  - LD50, GAMMA RAYS (4878)
  - LIPID METABOLISM, CHROMATOGRAPHY, DIET, ESTERS, FATTY ACIDS, RABBIT (4885)
  - LIVER, BILE DUCT, CHOLELITHIASIS, DYSKINESIA, MIGRAINE, ACHLORHYDRIA (5343)
  - MESENTERIC ARTERY, OCCLUSION (5332)
  - MOTILITY, TRIGLYCERIDE (4799)
  - MOTILITY, ULCER, STOMACH, DUODENUM (5032)
  - PERIARTERITIS NODOSA, INTESTINAL OBSTRUCTION, PERFORATION, INFARCT, SURGERY, COLLAGEN DISEASE (5339)
  - TYPHOID FEVER, PARATYPHOID, ANTIBIOTICS, ELECTROLYTES (5333)
  - ULCERATION, GASTRIC MUCOSA, PERFORATION, POTASSIUM CHLORIDE (4984)

GENETICS
  - BLOOD GROUPS, VIRAL HEPATITIS, HEMOGLOBIN A2, JAUNDICE (5260)
  - CHROMOSOME ABERRATIONS, CYSTIC FIBROSIS, DERMATOGLYPHICS, DYSPLASIA (5238)

GENITOURINARY TRACT
  - COLON, RECTUM, OBSTRUCTION (4902)
  - KIDNEY, ENZYME, LIVER, AMPHIBIAN (4845)
  - KIDNEY, OSTEOMALACIA, CADONIUM, ITAI ITAI DISEASE (5388)
  - RENAL ACTIVITY, HEPATIC ACTIVITY, GLUCURONYLTRANSFERASE, URANYL NITRATE, ENZYMOLOGY, RAT (5225)
  - RENAL RUBULI, PORPHYRIN DEPOSITS, FLUORESCENCE MICROSCOPY, HEPATIC PORPHYRIA, ABSORPTION, SECRETION (5216)
  - RENAL DISEASE, LIVER, CIRRHOSIS, RESPIRATORY ALKALOSIS, HYPERAMMONIEMIA, HYPONATREMIA (5292)
  - TRIGONE, SURGERY, RECTUM, ANASTAMOSIS (4867)
  - UREMIA, RENAL FAILURE, INTESTINAL DIALYSIS, ILEAL LOOP, RAT (4777)

GRANULOMA
  - HEPATITIS, HISTOPLASMOSIS (5237)
  - SMALL INTESTINE, SPRUE, JEJUNAL BIOPSY (5052)

GROWTH
  - FETAL LIVER, PLACENTA, IRRADIATION, RNA, PROTEIN, RAT (5166)

HEART
  - INFARCT, ESOPHAGUS, STOMACH, ANEURYSM, FUNCTIONAL DISORDER, ABDOMINAL PAIN, DIFFUSE ARTERIOSLEROSIS, EMOTIONAL FACTORS (4967)
  - MYOCARDIUM, GASTRIC, ULCER PERFORATION (5039)

HELMINITH
  - SYPHACIA OBVELATA, TETRACHLOROTHIOPHENE, PESTICIDE, MICE (5408)

HEMORRHAGE
  - ABDOMEN, APOPLEXY (5387)
  - ABDOMINAL SURGERY, PERITONITIS, CARDIAC INSUFFICIENCY (5337)
  - ACUTE LEUKEMIA, LIVER, BIOPSY, SHOCK, MENGHINI (5344)
  - BENIGN TUMOR, STOMACH, MYOID, GASTROSCOPY, POLYP (5017)
  - CANCER, ULCER, SURGERY (5372)
  - COLON, SMALL INTESTINE, RECTUM, DIVERTICULI, ARTERIOGRAPHY (5351)
  - ENTERITIS, GASTROINTESTINAL TRACT (5070)
  - ESOPHAGEAL VARICES, ENDOSCOPY, SCLEROSIS (4960)
  - ESOPHAGEAL VARICES, PORTAL HYPERTENSION, GASTRODUODENAL ULCERS, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
  - ESOPHAGEAL VARICES, PROGNOSIS, HEPATIC COMA, CARCINOMA, CIRRHOSIS, BILIRUBIN (5342)
  - ESOPHAGEAL VARICES, WEATHER CONDITIONS CIRRHOSIS (4961)
  - ESOPHAGUS, VARICES, SENGSTAKEN-BLAKEMORE TUBE (4973).
  - GASTRODUODENAL, SURGERY, WILSON'S DISEASE, JAUNDICE, LEUCOPENIA, THROMBOPENIA (5200)
  - GASTRODUODENAL ARTERY, PERFORATION, STENOSIS, MALIGNANCY, PROTEINASE INHIBITION, ULCER (5034)
  - GASTRODUODENAL ORIGIN, ULCERATION, BLOOD TRANSFUSION, PANCREATITIS (4994)
  - GASTRODUODENAL ULCERS, STOMACH, BURNS, PYLOROPLASTY (5347)
  - GASTROINTESTINAL, CIRRHOSIS, ULCER, HEMANGIOMA, ESOPHAGEAL VARICES, ESOPHAGOSCOPY, ENDOSCOPY (5368)
  - GASTROINTESTINAL, ENDOSCOPY, RADIOLOGY (4924)
  - GASTROINTESTINAL, HEPATITIS, PANCYTOPENIA, APLASTIC ANEMIA (5266)
  - GASTROINTESTINAL TRACT, MELENA, TELEANGIECTASIA (5386)

  - GASTROSCOPY, DIAGNOSIS, ULCER (4954)
  - HEPATIC ARTERY, ANEURYSM (5395)
  - HEPATIC COMA, FLAPPING TREMOR, CORTICAL LESIONS, PYRAMIDAL SIGNS, AMMONIEMIA (5217)
  - LIVER, ANGIOPLASTIC SARCOMA, THOROTRAST, DELAYED DAMAGE (5214)
  - MASSIVE, GASTROINTESTINAL TRACT, TREATMENT, DOG (5370)
  - MECKEL'S DIVERTICULUM, INTESTINE, SURGERY, GASTRIC MUCOSA, SHOCK (5064)
  - PANCREATITIS, ENZYMATIC TOXEMIA, EDEMA, NECROSIS (5154)
  - PELIOSIS, HEPATITIS, LIVER, RADIOTHERAPY (5243)
  - PERITONEAL, ABDOMINAL TRAUMA, SURGERY, HEMATOMA (4909)
  - RECTOCOLITIS, AZOTHIOPRINE (5106)
  - RECTOCOLITIS, ULCERATIVE COLITIS, PSYCHIATRY, DIAGNOSIS, THERAPY (5125)
  - SMALL INTESTINE, COLON, RECTUM (4901)
  - SMALL INTESTINE, COLON, RECTUM, RADIOGRAPHY (4900)
  - STOMACH, PEPTIC ULCER, HYPOTHERMIA, HEMOSTATIC DRUGS (5007)
  - TELANGIECTASIA, ENDOSCOPY (5391)
  - ULCERATIVE RECTOCOLITIS, PROGNOSIS, SURGERY, ILEORECTAL ANASTOMOSIS (5123)
- HEMORRHOID
  - RECTUM, EPIDEMIOLOGY, PREGNANCY (5102)
- HEPATITIS
  - ACUTE, CELL REGENERATION, STEATOSIS, ELECTRON MICROSCOPY (5252)*
  - ACUTE, HEPATIC FAILURE, ULTRASTRUCTURE, NUCLEOLAR HYPERTROPHY, ENDOPLASMIC RETICULUM, MITOCHONDRIA (5258)
  - ACUTE, PANCYTOPENIA, GASTROINTESTINAL, BLEEDING, APLASTIC ANEMIA, BONE MARROW (5266)
  - ANTIGEN, IMMUNOELECTROPHORESIS, SERUM PROTEIN, OUCHTERLONY TECHNIQUE, BLOOD TRANSFUSION (4945)
  - ARGININE, ORNITHINE, CIRRHOSIS, RADIATION (5197)
  - AUSTRALIA ANTIGEN (5272)
  - CHRONIC, IMMUNOGLOBULINS, MITOCHONDRIA, CIRRHOSIS (5276)
  - CHRONIC, IMMUNOSUPPRESSIVES, VIRUS-SPECIFIC ANTIBODY, CIRRHOSIS, ACUTE INTOXICATION (5247)
  - CHRONIC, FATTY LIVER, CIRRHOSIS, SERUM PROTEIN, ELECTROPHORESIS (5212)
  - CHRONIC, THROMBOCYTOPENIA, HYPERSPLENISM, GAMMA GLOBULINS, PLATELETS, FATTY LIVER (5173)
  - CIRRHOSIS, BILIRUBIN, TRANSAMINASE, COAGULATION, PROTEIN FRACTIONS, AMMONIUM, ALBUMIN, GAMMA-GLOBULIN (4932)
  - ENCAPSULATED, PERI-, PORTAL HYPERTENSION, SPLENECTOMY, HEPATIC INSUFFICIENCY, ANASTOMOSIS (5289)
  - ENZYME ACTIVITY, CIRRHOSIS, SERUM, PLASMA, METHODS, LDH, SGOT, SGPT (4933)
  - GLUCOCORTICOID, LIVER BIOPSY, PROTEIN SYNTHESIS, BILIRUBIN, TRANSAMINASE, PREDNISOLON (5255)
  - GRANULOMATOUS, HISTOPLASMOSIS (5237)
  - INFECTIOUS, BILE ACID, STEROID SULPHATE, CONCENTRATION, SERUM (5254)*
  - INFECTIOUS, CIRRHOSIS, PROPERDIN, UNSPECIFIC IMMUNITY, NEWCASTLE DISEASE (5202)
  - INFECTIOUS, SERUM ANTIGEN, IMMUNOLOGIC, DISTINCTION (5253)*
  - JAUNDICE, REGENERATION, STEATOSIS, PARENCHYMAL VOLUME (5259)
  - LECITHIN-CHOLESTEROLACYLTRANSFERASE, CHOLESTEROL (5167)*
  - LIVER, HEPATIC INSUFFICIENCY, PANMEDIA, STEATOSIS, ANOREXIA (5199)
  - LUPOID, CIRRHOSIS, HYPERGLOBULINEMIA (5261)
  - PELIOSIS, RADIOTHERAPY (5243)
  - PHALLOIDIEN, MUSHROOM POISONING, DIARRHEA, CARDIOVASCULAR COLLAPSE (5332)
  - PROTEIN SYNTHESIS, DNA VIRUS, RNA VIRUS, CELL CULTURES, ANTINUCLEAR ANTIBODIES (5257)
  - SASHIMA, IMMUNOGLOBIN, TRANSAMINASE (5271)
  - SURGERY, JAUNDICE, CHOLESTASIS (5179)
  - VIRAL, ADOLESCENT, EPIDEMIOLOGY (5262)
  - VIRAL, AUSTRALIA ANTIGEN (5268), (5270)
  - VIRAL, BILE SECRETION, VEDRENAN, CHOLERETIC, CIRRHOSIS, MIGRAINE, LITHIASIS (5172)
  - VIRAL, DIABETES, ICTERUS (5269)
  - VIRAL, HEMOGLOBIN A2, HEMOLYTIC ANEMIA, JAUNDICE, GENETIC FACTORS, BLOOD GROUPS (5260)
  - VIRAL, HISTOCHEMISTRY, ALKALINE PHOSPHATASE, AMINOPEPTIDASE, ATPASE (5267)
  - VIRAL, ICTERUS, LUPOID, CHRONIC (5263)
  - VIRAL, JAUNDICE, PREGNANCY (5209)
  - VIRAL, LIPID MEAL, INTESTINAL CONTENTS (5273)
  - VIRAL, POSTHEPATIC CIRRHOSIS, CHOLELITHIASIS, HEMICOLECTOMY, ALCOHOL, CHOLECYSTOPATHY (5265)
  - VIRAL, REGENERATION, EPITHELIUM (5264)
- HEPATOBILIARY TRACT
  - PANCREABIL, CHOLERETIC, ANTISPASMODIC, CONSTIPATION, POST-HEPATITIS (5354)
- HERNIA
  - CONGENITAL, CYANOSIS, NEONATE, ASPHYXIATION (5049)
  - FEMORAL, APPENDIX, ABSCESS (5113)
  - PARAESOPHAGEAL, RUPTURE, PYLORUS (4970)
- HISTOLOGY
  - ENDOTHELIUM, PANCREAS, PERMEABILITY, HORSERADISH PEROXIDASE (4770)
  - EPITHELIUM, BILE DUCT, ULTRASTRUCTURE (4752)
  - EPITHELIUM, INTESTINE, LIPID, ULTRASTRUCTURE (4722)
  - EPITHELIUM, REGENERATION, VIRAL HEPATITIS (5264)

  - GASTRIC MORPHOGENESIS, MUCOSA, MESENCHYMES ORGAN SPECIFICITY, RABBIT EMBRYO (4734)
  - INTESTINE, MUCOSA, HISTOCHEMISTRY, RADIATION, RAT (4698)*
  - SMALL INTESTINE, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION, ULCERATIVE COLITIS, BIOPSY, MUCOSA (4939)
- HORMONE
  - ANGIOTENSIN, BRADYKININ, GASTRIC SECRETION, MUCOSA, CALCIUM IONS, ELEDOISIN (4805)
  - CHOLECYSTOKININ, OCTAPEPTIDE, ILEUM, GALLBLADDER, CONTRACTION (4794)*
  - CORTISOL, LIVER, PROTEIN SYNTHESIS, IN VIVO, IN VITRO, AMINO ACID INCORPORATION, RAT (4834)*
  - CORTISONE, EFFECT, RNA SYNTHESIS, LIVER, RAT (4824)*
  - GASTRIN, ANTRAL MUCOSA, MOTILITY, HISTAMINE, PENTAGASTRIN (4808)
  - GASTRIN, ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS, BIOASSAY (4921)
  - GASTRIN-LIKE TETRAPEPTIDE, ESOPHAGUS, RECONSTRUCTION, GASTROINTESTINAL TUBES (4798)
  - GROWTH, BOVINE, LIVER, LIPID METABOLISM, HYPOPHYSECTOMY, RAT (4838)*
  - HYPOPHYSECTOMY, ABSORPTION, SMALL INTESTINE, WATER, CHLORIDE, SODIUM, GLUCOSE, RAT (4756)*
  - INSULIN, HEPATIC ENZYMES, DISULFIDE BONDS, NADH, NADPH, GLUTATHIONE REDUCTASE, SULFHYDRYL CONTENT (4688)*
  - INSULIN, PROTEOLYSIS INHIBITION, VALINE TURNOVER, LIVER PROTEIN METABOLISM (4837)*
  - PANCREOZYMIN, ALCOHOLIC, CIRRHOSIS, PANCREATIC FUNCTION, AMYLASE, LIPASE, SECRETIN (5278)
  - PANCREOZYMIN, PANCREATITIS, GLUCOSE TOLERANCE, CARCINOMA, SERUM LIPASE, AMYLASE (4938)
  - PENTAGASTRIN, GASTRIC SECRETION, STIMULATION, INHIBITION, ANTIGASTRIN, RAT (4807)*
  - PENTAGASTRIN, STIMULATION, GASTRIC ACID SECRETION (5019)*
  - PROSTAGLANDIN E, BRADYKININ, DUODENUM, ISOLATED, MOTILITY, RAT (4797)*
- ICTERUS
  - CHRONIC, CRIGLER-NAJJAR SYNDROME, HYPERBILIRUBINEMIA (5182)
- ILEUM
  - ABSORPTION, SALT LOADING, CAT (4783)
  - ANAPHYLAXIS, ANTIGEN, GUINEA-PIG (5053)
  - DUMPING SYNDROME, DUODENUM, ION (5080)
  - ENTERITIS, JEJUNUM, ASCARIS (5358)
  - GALLBLADDER, CONTRACTION, CHOLECYSTOKININ, OCTAPEPTIDE (4794)*
  - GLUCOSE ABSORPTION, VITAMIN B12, GASTRIC RESECTION, PERISTALSIS, MALIGNANT TUMOR (5083)
  - ILEITIS, ILEOSTOMY (5044)
  - ILEOSTOMY, CROHN'S DISEASE (5068)
  - MOTILITY, COLON, SLOW WAVES, HYPOTHYROIDISM (4786)*
  - MUCOSA, ABSORPTION, WATER, ELECTROLYTE, MORPHOLOGY, ATPASE, ULTRASTRUCTURE (4713)*
  - NEONATE, RAT (4730)
  - NEOSTIGMINE, ATROPINE, RECTUM, COLON (4804)
  - SURGERY, MUCOSA, COLON, DUODENUM (5045)
- IMMUNOLOGY
  - ALPHA GLOBULIN, LYMPHOMA, JEJUNAL MUCOSA, IGA, ABDOMINAL PAIN, HYPOKALEMIA, TUBERCULOSIS (5346)
  - ANTI-COLON, AUTO-IMMUNE, HUMAN, ANTIBODY (5126)
  - BACTERIA, CHOLERA, FOWL (5363)
  - CHOLERA, BACTERIA, FOWL (5362)
  - CHOLERA, VACCINE, FOWL (5361)
  - GASTRITIS, PERNICIOUS ANEMIA, INTRINSIC FACTOR, MUCOSA (5005)
  - IMMUNOFLUORESCENCE, ORNITHINE AMINOTRANSFERASE, LIVER, RAT (4700)*
  - INTESTINE, CLOSTRIDIUM, LAMB (5396)
  - STOMACH, CANCER (4991)
  - UNSPECIFIC IMMUNITY, INFECTIONS HEPATITIS, CIRRHOSIS, PROPERDIN, NEWCASTLE DISEASE (5202)
- INTESTINE
  - ABSORPTION, CALCIUM, VITAMIN D3, STRONTIUM (4775)
  - ABSORPTION, COBALT, CIRRHOSIS, HEMOCHROMATOSIS (5072)*
  - ABSORPTION, IRON, REGULATION, FERRITIN (4755)*
  - ABSORPTION, PROTEIN, ENZYME (4767)
  - ABSORPTION, SODIUM, SUGAR (4771)
  - ABSORPTION, MUCOSA, TANNIC ACID, GLUCOSE, BUTYRIC ACID, METHIONINE, PROTEIN DENATURATION, MOUSE (4780)
  - ABSORPTION, TETRACYCLINE RAT (4778)
  - ABSORPTION, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (5380)
  - ADHESIONS, ENTEROPTOSIS, OCCLUSIONS (5061)
  - ATONIA, HYPEROSMOLARITY, PARALYSIS, CIRCULATION (5338)
  - ATRESIA, CYSTIC FIBROSIS, MECONCIUM ILEUS, PANCREATIC FUNCTION, NEWBORN INFANT (5063)
  - BLOOD FLOW, ABSORPTION, WATER (4774)
  - CANCER, STOMACH, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
  - CHOLESTEROL, METABOLISM, RAT (4856)
  - CLOSTRIDIUM, IMMUNOLOGY, LAMB (5396)
  - ENDOMETRIOSIS, SURGERY, DILATATION, MESENTERIC GANGLIA (5042)
  - ENTEROPTOSIS, GASTROPTOSIS, EPIGASTRIC PAIN, SURGERY, ASUPANTHENOL (5018)
  - EPITHELIUM, LIPID, ULTRASTRUCTURE (4722)
  - EUBIOSIS, PHARMACOLOGY (5406)
  - FAT DIGESTION, OIL, MICELLAR PHASES, CHILDREN (4863)*
  - GALACTOSYL-TRANSFERASE, MUCOSA, GLYCOPROTEIN INCORPORATION, CYTOPLASMIC FRACTIONS (4742)*
  - MECKEL'S DIVERTICULUM, HEMORRHAGE, GASTRIC MUCOSA, SURGERY, SHOCK (5064)
  - HYMENOLEPIS, MIGRATION, GLUCOSE (5404)

- INTESTINO-MESENTERIC INFARCT, EMBOLISM, ARTERIOTOMY (5336)
- ISCHEMIA, MALABSORPTION, SURGERY (5086)
- MALABSORPTION, DERMATITIS, PSORIASIS, ROSACEA (5088)
- MALABSORPTION, ENTERITIS, PANCREATIC INSUFFICIENCY (5076)
- MESENCHYMAL TUMOR, LIOMYOMA, STOMACH, LAPAROTOMY (5015)
- MECHANICAL OBSTRUCTION, SURGERY (5056)
- MUCOSA, ENZYME, DNA (4723)
- MUCOSA, ENZYME, RAT (4748)
- MUCOSA, HISTOCHEMISTRY, RADIATION, RAT (4698)•
- OBSTRUCTION, PERIARTERITIS NODOSA, PERFORATION, COLLAGEN DISEASE, SURGERY (5339)
- OCCLUSION, SURGERY, ABSCESS, STASIS, ADHESIONS (5334)
- OCCLUSION, SURGERY, ADHESIONS, PERITONITIS, HEMORRHAGE (5337)
- POSTOPERATIVE OBSTRUCTION, RELAPAROTOMY, ILEUS, GASTRIC JUICE (5060)
- STENOSIS, TUBERCULOSIS (5355)
- STENOSIS, ULCER, POTASSIUM CHLORIDE, MUCOSA, NECROSIS (5048)
- ULCERATIVE COLITIS, REGIONAL ENTERITIS, CROHN'S DISEASE, CYTOSTATICS, ANTIBIOTIC, INTESTINAL FLORA (5127)
- VIRAL HEPATITIS, LIPID MEAL (5273)
- X-IRRADIATION, ALKALINE PHOSPHATASE, RAT (4721)

INTESTINE, LARGE
- ACUTE VOLVULUS, SURGERY, RECTO-SIGMOID INTUBATION, PERFORATION (5121)
- APPENDICITIS, PROGESTERONE, PREGNANCY, LABOR, ABORTION (5092)
- APPENDIX, CROHN'S DISEASE, REGIONAL ENTERITIS (5067)
- CECUM, CONTAMINATION, RAT (4790)•
- CECUM, WALL, WATER TRANSPORT, RAT (4759)•
- COLON, RECTUM, HEMORRHAGE, DIVERTICULI, ARTERIOGRAPHY (5351)
- DERMOID CYST, DEVELOPMENTAL (5109)
- OCCLUSION, PERITONITIS, RADIOLOGY, MALROTATION, MULTIPLE ATRESIA, HIRSCHPRUNG'S DISEASE, DIAPHRAGM, NEONATE (5058)
- PARASITES, CONGENERIC SPECIES, HELIGMOSOME, RODENTS (5405)
- POLYP, RADIOLOGY, CHILDREN (5119)

INTESTINE, SMALL
- ABSORPTION, CHOLECYSTOJEJUNOSTOMY, DOG (4764)•
- ABSORPTION, LIPID, CIRCULATION, MICELLE (4766)•
- ABSORPTION, PREGNANCY, LACTATION (4753)
- ABSORPTION, SUGAR, WATER (4784)
- ABSORPTION, WATER, CHLORIDE, SODIUM, GLUCOSE, HYPOPHYSECTOMY, RAT (4756)•
- BLOOD FLOW, KCl, THIAZIDES, INTESTINAL STENOSIS (4871)•
- CROHN'S DISEASE, ANGIOGRAPHY, INFARCT, BLOOD SUPPLY (5066)
- CROHN'S DISEASE, RESECTION, ILEUM (5068)
- DIGESTION, SECRETION, ION, SHEEP (4877)
- DUODENUM, CARCINOMA (5000)
- DUODENUM, ISOLATED, BRADYKININ, PROSTAGLANDIN E1, MOTILITY, RAT (4797)•
- DUODENUM, MUCOSA, ULTRASTRUCTURE, EPITHELIUM, GOLGI APPARATUS, TRACER STUDY (4704)•
- DUODENUM, STENOSIS, ATRESIA, MALROTATION, MESENTERIC ARTERY (5013)
- ELECTRICAL POTENTIAL, ION, MUCOSA (4803)
- ENTERITIS, CLOSTRIDIUM, DIARRHEA (4884)
- ENTERITIS, STENOSIS, CELIAC ARTERY (5069)
- ENZYME, CARBOHYDRATE ABSORPTION, MEMBRANE PERMEABILITY (4870)•
- ENZYME ACTIVITY, COLCHICINE, GUINEA PIG (4711)•
- FATS, EMULSIFICATION, GASTRIC LIPASE, TRIGLYCERIDE HYDROLYSIS, PANCREATIC LIPASE, ATP, FATTY ACIDS, MALAABSORPTION (4869)•
- GLYCINE TRANSPORT, SODIUM, BIRD (4776)
- HEMORRHAGE, DIVERTICULI, LAPAROTOMY, ARTERIOGRAPHY (5351)
- HEMORRHAGE, RADIOGRAPHY (4900)
- HEMORRHAGE, ULCER, DIVERTICULUM, TUMOR (4901)
- ILEUM, GALLBLADDER, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)•
- ILEUM, NEONATE, RAT (4730)
- INNERVATION, PLEXUS, INNER MUSCLE ALYER, CATECHOLAMINES (4696)•
- JEJUNAL LOOP, DIALYSIS, UREMIA, RENAL FAILURE, RAT (4777)
- JEJUNUM, DUODENUM, ULCER, RESECTION, VAGOTOMY, PERITONITIS, DYSTONIA, PAIN (5025)
- JEJUNUM, EPITHELIUM, GLUCOSE-6-PHOSPHATASE, THIAMINE PYROPHOSPHATASE (4703)•
- JEJUNUM, SURGERY (5046)
- JEJUNUM, SPONTANEOUS CONTRACTIONS, ANTIBIOTICS, BLOCKING AGENTS, MUSCLE RELAXATION, RECEPTOR SITES (4787)•
- MALABSORPTION, GASTRECTOMY, D-XYLOSE, FAT (5073)•
- MALABSORPTION, PARASITE (5082)
- MALABSORPTION, TETANY, GAMMA GLOBULIN (5077)
- MECKEL'S DIVERTICULUM, PERFORATION, PERITONITIS, SURGERY, OBSTRUCTION, NEWBORN INFANT (5050)
- MECKEL'S DIVERTICULUM, RADIOLOGY, DIARRHEA, SURGERY (5051)
- MOTILITY, BARIUM SULFATE (4898)
- MOTILITY, MESENTERIC ARTERY OCCLUSION, DRUG EFFECT (4788)•
- MOTOR ACTIVITY, WHOLE BODY RADIATION, DUODENUM, JEJUNUM, ILEUM (4791)•
- MUCOSA, DERMATITIS (5057)
- MUCOSA, MORPHOLOGY, ABSORPTION, WATER, ELECTROLYTE, ULTRASTRUCTURE, ATPASE (4713)•
- MUCOSA, SEROSA, TRANSMURAL POTENTIAL, ATP (4760)•

- MUCOSA, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION, ULCERATIVE COLITIS, ROENTGENOLOGY (4939)
- NEUTRAL, ACID, B-GALACTOSIDASE, DEVELOPMENT, CORTISONE (4864)•
- OBSTRUCTION, ENDOMETRIOSIS, ILEUS, MENOPAUSE (5059)
- PERFORATION, ACUTE COLONIC, VOLVULUS (5121)
- PROTEIN, MALNUTRITION, MALABSORPTION (5377)
- SECRETION, LIPASE, TRIBUTYRINE (4815)
- SORBITOL, RADIOLOGY, DIAGNOSIS (4913)
- SPRUE, GRANULOMA, JEJUNAL BIOPSY (5052)
- STOMACH, SECRETION, ACID (4866)
- WHIPPLE'S DISEASE, MACROPHAGE, MUCOSA (5087)
- ZOLLINGER-ELLISON SYNDROME, DIARRHEA, ISLET CELL TUMOR (5381)

IRRADIATION
- X-, INTESTINE, ALKALINE PHOSPHATASE, RAT (4721)

JAUNDICE
- ALCOHOLIC CIRRHOSIS, HEMOLYTIC ANEMIA, BURR CELLS (5294)
- ANEMIA, CHOLAGITIS, LIVER (4919)
- BILE ACIDS, LIVER HOMOGENATES, CONJUGATION, HEPATIC DISEASE, HEMOLYTIC TOXINS (5256)
- BILE DUCT, CYST, ATE
- BILE DUCT, CYST, ATRESIA, ANASTOMOSIS (5327)
- CHOLESTASIS, LIVER, MITOCHONDRIA (5195)
- CHRONIC, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (5219)
- GALLBLADDER, CARCINOMA, GALLSTONE (5306)
- GALLBLADDER, CHOLECYSTECTOMY, JAUNDICE THROMBOSIS (5328)
- GERIATRICS, CIRRHOSIS (5210)
- HEPATITIS, COMA, CIRRHOSIS (5263)
- HEPATITIS, DIABETES (5269)
- LIVER, CHOLANGITIS, BILE (5307)
- LIVER, SHOCK, TRAUMA (5238)
- LUMINAL THERAPY, RHESUS INCOMPATIBILITY, XENOENZYME, NEWBORN INFANT (5201)
- LUPOID HEPATITIS, CIRRHOSIS, HYPERGLOBULINEMIA (5261)
- OBSTRUCTIVE, BILE DUCT, ATRESIA, CIRRHOSIS, CHOLESTRYRAMINE (5218)
- OBSTRUCTIVE, LECITHIN-CHOLESTEROL, ACYLTRANSFERASE (5301)•
- OBSTRUCTIVE, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)•
- OBSTRUCTIVE, PANCREAS, BILIRUBIN, CHOLANGIOGRAPHY, METASTASES, LAPAROTOMY (4941)
- OBSTRUCTIVE, ODDI SPHINCTER, DUODENAL, DYSKINESIA, RADIOKINETICS, COLOSTASIS (5322)
- PREGNANCY, ECLAMPSIA, HEPATIC CANCER, VIRAL HEPATITIS (5192)
- PREGNANCY, HEPATITIS (5209)
- SURGERY, CHOLESTASIS, HEPATITIS (5179)
- VIRAL HEPATITIS, GENETIC FACTORS, BLOOD GROUPS, HEMOGLOBIN A2 (5260)

JEJUNUM
- BILIARY-JEJUNAL BYPASS, STENOSIS, CALCULI, PANCREATIC TUMOR (5300)•
- DIVERTICULOSIS, MALABSORPTION, OSTEOMALACIA, RICKETTS (5078)
- ELECTRICAL POTENTIAL, ION, MUCOSA (4803)
- ENTERITIS, ILEUM, ASCARIS (5358)
- EPITHELIUM, GLUCOSE-6-PHOSPHATASE, THIAMINE PYROPHOSPHATASE (4703)•
- INVAGINATION, CANCER, LUNG (5043)
- MALABSORPTION, PARASITE (5089)
- MOTILITY, MOTOR ACTIVITY, ANTIBIOTICS, BLOCKING AGENTS (4787)•
- MUCOSA, LYMPHOMA, ABDOMINAL PAIN, ALPHA GLOBULIN, IGA, HYPOKALEMIA, (5346)
- MUCOSA, CELIAC DISEASE, STEATORRHEA (5085)
- MUCOSA, DERMATITIS (5057)
- MUCOSA, STIMULATION, VASODILATION (4868)
- SURGERY (5046)
- ULCER, DUODENAL ULCER, PERITONITIS, NUTRITION, VAGOTOMY, DYSTONIA (5025)

LIPID
- ATHEROMA, CELIAC DISEASE, PANCREAS, ARTERIOGRAPHY, ADENOPATHY (5348)
- CHOLESTEROL, BILE, DIET, GALLSTONE (5314)
- CHOLESTEROL, METABOLISM, LIVER, INTESTINE, RAT (4856)
- CIRRHOSIS, FATTY ACIDS, CHOLESTEROL, HEPATIC INFILTRATION, COAGULATION (5291)
- FAT, ABSORPTION, DIGESTION, ENZYME (4773)
- FAT, DIET, LIVER, ALCOHOL (5236)
- FAT, DIGESTION, INTESTINE, OIL, MICELLAR PHASE, CHILDREN (4863)•
- FATTY ACIDS, EMULSIFICATION, TRIGLYCERIDES, INTESTINAL ENZYMES, MALAABSORPTION, ATP, LIPASE (4869)•
- FATTY ACIDS, ESTERS, PANCREAS, ALIMENTARY CANAL, INTESTINE, COLON, RABBIT (4885)
- LIVER, ALCOHOL, CIRRHOSIS (5235)
- LIVER INFILTRATION, ALCOHOLISM, HEPATOSIS, SILYMARIN, PARENCHYMAL DAMAGE (5165)
- LIVER, PREGNANCY (5245)
- LIVER, SPECTROPHOTOMETRIC METHOD, HISTOCHEMICAL METHOD, FATSPECIFIC DYE (5164)
- METABOLISM, ALCOHOL, INSULIN, ELECTROPHORESIS, CHOLESTEROL (5227)
- METABOLISM, DIET (4848)
- METABOLISM, FATTY ACID, GASTROINTESTINAL TRACT (4883)
- METABOLISM, LIVER, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)•
- NUCLEAR MEMBRANE, LIVER (4695)•
- PHOSPHO-, HEPATIC METABOLISM, PHOSPHORUS, MICROSOMES (4841)•
- STEATOSIS, ALCOHOLIC INTOXICATION, RETICULOENDOTHELIAL SYSTEM, RAT (5233)
- STEATOSIS, HEPATITIS, JAUNDICE,

  - REGENERATION, PARENCHYMAL VOLUME (5259)
  - STEATOSIS, LIVER, ALCOHOLIC, CIRRHOSIS, PORTAL HYPERTENSION, NECROSIS (5295)
  - STEATOSIS, LIVER BIOPSY, TRIGLYCERIDE (4896)
  - STEATOSIS, HEPATIC INSUFFICIENCY, PANMEDIA, ANOREXIA, HEPATITIS (5199)
  - STEATOSIS, OBESITY, HYPOTHALAMIC LESION, GOOSE (5188)
  - PHOSPHO-, SYNTHESIS, EXCHANGE, LIVER, CELLS (4820)*
  - TRIGLYCERIDE, LONG CHAIN, MEDIUM CHAIN, MOTILITY, DIGESTIVE TRACT (4799)
  - ULTRASTRUCTURE, INTESTINE, EPITHELIUM (4722)
  - VIRAL HEPATITIS, INTESTINAL CONTENTS (5273)
- LITHIASIS
  - BILIARY, PANCREATITIS, ABDOMINAL PAIN, AMYLASE, LIPASE, HYPOCALCEMIA (5153)
  - BILIARY, PANCREATITIS, WIRSUNG'S CANAL, ANASTOMOSIS, CHOLANGIOGRAPHY (5151)
  - CHOLE-, ACUTE ABDOMINAL PAIN, PANCREATITIS, SPASMOLYTIC, PYRAZOLONE DERIVATIVE, ANALGESIC (5369)
  - CHOLE-, CHOLECYSTECTOMY, VAGOTOMY, LIVER (5304)
  - CHOLE-, GALLBLADDER CARCINOMA, CHOLECYSTECTOMY (5311)
  - CHOLE-, GALLBLADDER PERFORATION, SEX FACTOR, AGE FACTOR, NUTRITION (5325)
  - CHOLE-, LIVER, BILE DUCT, DIGESTIVE TRACT, MIGRAINE, ACHLORHYDRIA, DYSKINESIA (5291)
  - CHOLE-, PANCREAS, SECRETION, GALLBLADDER (5329)
  - CHOLE-, POST-VAGOTOMY, CHOLECYSTECTOMY, GASTRECTOMY, ULCER, DIARRHEA (5321)
  - CHOLE-, RADIOLOGY (5320)
- LIVER
  - ABSCESS, ASCARIS (5399)
  - ABSCESS, SURGERY (5208)
  - ABSORPTION, SMALL INTESTINE, BLOOD SUPPLY, MICELLE (4766)*
  - ACUTE ATROPHY, PREGNANCY, PLASMAPHERESIS, ULTRASTRUCTURE, NECROSIS, BIOPSY (5293)
  - ACUTE CHOLECYSTITIS, SURGERY, PANCREATIC ENZYME, JAUNDICE, BIOPSY (5324)
  - ACUTE, HEPATITIS, CELL REGENERATION, STEATOSIS, BIOPSY, HISTOLOGY, ELECTRON MICROSCOPY (5252)*
  - ACUTE, HEPATITIS, GLUCOCORTICOID, PROTEIN SYNTHESIS, PREDNISOLON, BIOPSY (5255)
  - ACUTE, HEPATITIS, PANCYTOPENIA, APLASTIC ANEMIA, BONE MARROW (5266)
  - ALCOHOL, CONGENERS, TUMORS, STEATOSIS, NECROSIS, PARENCHYMAL DAMAGE, FUSEL OIL (5226)
  - ALCOHOL, REGENERATION, AGE, NUTRITION, VITAMIN B12, CORTISONE (5279)
  - ALCOHOLIC CIRRHOSIS, JAUNDICE, HEMOLYTIC ANEMIA, BURR CELLS, HYPERSPLENISM (5294)
  - ALCOHOLIC, CIRRHOSIS, HEMODYNAMICS, STEATOSIS, PORTAL HYPERTENSION, NECROSIS (5295)
  - ALCOHOLISM, FATTY LIVER, HEPATOMEGALY, JAUNDICE, HEMOLYTIC ANEMIA, POLYNEUROPATHY (5224)
  - ALLERGY, CUTANEOUS LESIONS, CUTANEOUS ARTERIES, CAPILLARIES, JUVENILE CIRRHOSIS, PARAKERATOSIS (5285)
  - AMINO ACID INCORPORATION, AMINO ACID ASSAY, POLYRIBOSOMES, GLUTATHIONE, RAT (4712)*
  - AMINO ACIDS, LEUCINE, ISOLEUCINE, VALINE, CATABOLIC PATHWAYS, DEHYDROGENASES (4818)*
  - AMOEBIASIS, TRYPANOSMIASIS, LEISHMANIASIS (5398)
  - ANEURYSM, POLYARTERITIS, ARTERIOGRAPHY (4904)
  - AUSTRALIA ANTIGEN, HISTORY, HEPATITIS (5270)
  - AUTOTRANSPLANTATION, ORTHOTOPIC HEPATECTOMY, PATHOLOGY, DNA (5171)*
  - BARBITURATE METABOLISM, SLEEPING TIME, MICROSOMAL ENZYME, INDUCTION, REVERSIBILITY, PHENOBARBITAL, RAT (4744)
  - BILE, CHOLANGITIS, SCLEROSIS (5307)
  - BILE ACIDS, HEPATIC DISEASE, JAUNDICE, HEMOLYTIC TOXINS (5256)
  - BILE DUCTS, DIGESTIVE TRACT, CHOLELITHIASIS, MIGRAINE, ACHLORHYDRIA, DYSKINESIA (5343)
  - BILIARY TRACT, SURGERY, GALLBLADDER (5308)
  - BILIRUBIN, MENTHOL, RATS, HUMAN, GLUCURONYL TRANSFERASE (4844)*
  - BILIRUBIN UPTAKE, HYPERBILIRUBINEMIA, GILBERT'S SYNDROME (5205)
  - BIOPSY, ACUTE LEUKEMIA, SHOCK, HEMORRHAGE, MENGHINI (5344)
  - BIOPSY, RENAL CANCER, NEPHRECTOMY, AMYLOIDOSIS, MUCOPROTEINS (5185)
  - BLOOD FLOW, ANESTHESIA (5376)
  - BLOOD FLOW, BILIGRAFIN, EXCRETION, CHOLANGIOGRAPHY (4873)*
  - BLOOD FLOW, MEASUREMENT, INDOCYANINE GREEN DYE, DENSITOMETER (4840)*
  - CANCER, DIAGNOSIS (5183)
  - CANCER, JAUNDICE, VIRAL HEPATITIS, PREGNANCY, ECLAMPSIA (5192)
  - CARCINOMA, BENIGN DISEASES, ARTERIOGRAPHY, SPLENOPORTOGRAPHY, ANGIOGRAPHY (4952)
  - CARCINOMA, POLYCYTHEMIA, ERYTHROPOIETIC FACTOR, HEMOCHROMATOSIS, HYPOGLYCEMIA (5193)
  - CELL, AMYLOID, DUCK (5184)
  - CELL, MITOCHONDRIA, INNER MATRIX, MONKEY (4705)*
  - CELL, NUCLEUS, MEMBRANE (4731)
  - CELL, PHOSPHOLIPID SYNTHESIS, RAT (4820)*
  - CELL, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE, NICOTINE (4782)

CELL, ULTRASTRUCTURE, MITOMYCIN C, RABBIT (4709)*
CHOLANGITIS, ICTERUS, ANEMIA (4919)
CHOLESTASIS, CYTOMEGALIC INCLUSIONS, JAUNDICE, HYPERLIPEMIA, NEONATE (5190)
CHOLESTEROL METABOLISM, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
CHOLESTEROL, METABOLISM, RAT (4856)
CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOSUPPRESSIVES, ACUTE INTOXICATION, VIRUS SPECIFIC ANTIBODY (5274)
CHRONIC HEPATITIS, FATTY LIVER, CIRRHOSIS, SERUM ALBUMIN, SERUM GLOBULIN, ELECTROPHORESIS (5212)
CHRONIC HEPATITIS, IMMUNOGLOBULINS, MITOCHONDRIA, CIRRHOSIS (5276)
CIRRHOSIS, LAENNEC'S, HYPERPROTEINEMIA, MICROGLOBULINEMIA, IMMUNOELECTROPHORESIS, PARAPROTEINS (5287)
CIRRHOSIS, CARBON TETRACHLORIDE, AGE FACTOR, 3-METHYLCHOLANTHRENE, RATS (5277)*
CIRRHOSIS, BREATH, VOLATILE, FATTY ACID (5280)*
CIRRHOSIS, DIMETHYLSULFIDE, MERCAPTONS, METHIONINE (5281)*
CIRRHOSIS, LIPIDS, FATTY ACIDS, COAGULATION (5291)
CIRRHOSIS, PORTAL CIRCULATION, HEMORRHAGE, PROGNOSIS, PORTOCAVAL ANASTOMOSIS (4940)
CIRRHOSIS, PORTACAVAL SHUNT (5282)*, (5297)
CIRRHOSIS, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA, RESPIRATORY ALKALOSIS (5292)
COMA, AMMONEMIA, HEMODYNAMICS, HETEROLOGOUS PERFUSION, BLOOD PLATELETS (5215)
CONCREMENT, BILE DUCT, RUTIN, INFLAMMATION, SIDE EFFECT (5228)
CONGENITAL FIBROSIS, TUBULAR ECTASIA, RENAL LESION, PYELITIS, UROGRAPHY, BIOPSY (5187)
CYST, ECCHINOCOCCUS, DIAGNOSIS, LIVER SCAN (4887)*
CYTOPHOTOMETRY, NUCLEAR DNA, ACRIDINORANGE, PROTEIN BIOSYNTHESIS, GUINEA PIG, AGE DIFFERENCE, FLUORESCENT EMISSION, DNA-PO4-GROUP (4715)
CYTOPLASMIC ADENINE NUCLEOTIDE SYSTEM, NICOTINAMIDE-ADENINE NUCLEOTIDE SYSTEM, EQUILIBRIUM, ATP, ADP, RAT (4733)
DEHYDROGENASE, ASSAY (4737)
DEHYDROGENASE, METABOLISM, HUMAN (4857)
DETOXIFICATION, ULCERATIVE COLITIS, OIB TEST, GLUCURONYLTRANSFERASE, TRANSAMINASE (5122)
DISEASE, ACUTE VENOUS OCCLUSION, BIOPSY, ULTRASTRUCTURE, PATHOLOGY (5168)*
DISEASE, TRANSAMINASE, EXERCISE, LIVER CELL PERMEABILITY, CHRONIC HEPATITIS, SUBSIDING HEPATITIS, FATTY LIVER (4937)
DISEASE, CIRRHOSIS, VIRAL HEPATITIS, LITHIASIS, BILE SECRETIN, VEDRENAN (5172)
DISTOMATOSIS, CAPSULITIS, BIOPSY, LAPAROSCOPY (4908)
DISTOMATOSIS, IMMUNOFLUORESCENCE, FASCIOLA HEPATICA, COMPLEMENT FIXATION, LAPAROSCOPY (4907)
DNA TRANSCRIPTION, RNA SYNTHESIS, TEMPLATE, RIBONUCLEASE INHIBITOR, LIVER SUPERNATANT (4697)*
DRUG METABOLIZING, ENZYME, EMETINE, 2, 3-DEHYDROEMETINE (4708)*
DRUG METABOLISM, REDUCTASE, METYRAPONE, MICROSOME (4839)*
ECHINOCOCCOSIS, TUMORS, BILE DUCT STASIS, METASTASES, SURGERY (5407)
EMBRYONIC, CHOLINESTERASE, ENDOTHELIAL CELLS, LIVER MESODERM, CHICK (4736)
ENZYME ACTIVITY, THREONINE DEFICIENCY, RAT (4694)*
ENZYME, ADENOSINE, NUCLEOTIDE (4850)
ENZYME, ASSAY (4735)
ENZYME, COENZYME, ALDEHYDE (4724)
ENZYME, DISULFIDE REDUCTASE, TRANSHYDROGENASE ACTIVITY, MICROSOMES, NADH, PYRIDINE NUCLEOTIDES (4688)*
ENZYME, FOLATE, T4 INFLUENCE, RAT (4827)*
ENZYME, GLYCEROL, TROUT (4846)
ENZYME, IMMUNOFLUORESCENCE, RAT (4700)*
ENZYME, INTERACTION, NUCLEOSIDE (4862)
ENZYME, ISOZYME (4728)
ENZYME, KIDNEY, AMPHIBIAN (4845)
ENZYME, KWASHIORKOR, CHILDREN (5394)
ENZYME, METABOLISM, NADH OXIDATION (4689)*
ENZYME, MITOCHONDRIA (4725)
EPITHELIUM, REGENERATION, VIRAL HEPATITIS (5264)
ETHANOL, CIRRHOSIS, LIPID (5246)
EXCRETION, STEROIDS, PERFUSION, RAT (4762)*
EXTRACT, GLUCOSE-6-PHOSPHATE-DEHYDROGENASE, ISOENZYME, ERYTHROCYTE, RAT (4740)
FAILURE, DIABETES, EXCHANGE TRANSFUSION, COMA (5240)
FAT, ALCOHOL, CIRRHOSIS (5235)
FAT, ALCOHOL, DIET (5236)
FATTY ACID, CIRRHOSIS (5280)*
FATTY, CIRRHOSIS, CHRONIC HEPATITIS, HYPERSPLENISM, THOMBOCYTOPENIA (5173)
FETAL, COBALT RADIATION, LIVER, PLACENTA, GROWTH INHIBITION, RAT (5166)
FIBROSIS, REVERSIBLITY, COLLAGEN, RAT (5222)*
FOLIC ACID, CIRRHOSIS, MALABSORPTION, CHRONIC ALCOHOLISM, PTEROYLGLUTAMIC ACID (5074)
GLUCURONYLTRANSFERASE, URANYL NITRATE, RENAL ACTIVITY, ENZYMOLOGY, RAT (5225)
GLYCOGEN METABOLISM, RADIOACTIVITY, PRECURSOR, GLUCOSE INCORPORATION, GLUTAMIC ACID, MICE, GLYCERYLTRIPALMITATE (4861)
GOLGI APPARATUS, ULTRASTRUCTURE

CHANGE, TOCOPHEROL DEFICIENCY (5169)*
HALOTHANE EXPOSURE, SULFOBROMOPHTHALEIN CLEARANCE, RAT (5223)*
HEMODYNAMICS, NERVOUS SYSTEM, VASOMOTOR ACTION, PERIARTERIAL NEURECTOM (4874)
HEMORRHAGE, THOROTRAST, ANGIOPLASTIC SARCOMA, DELAYED DAMAGE (5214)
HEPAMERZ, ORNITHINE, ASPARAGINE, RADIATION, METASTASES, HEPATITIS, CIRRHOSIS (5197)
HEPATECTOMY, REGENERATION, SPLEEN, HEMATOPOIESIS, HUMORAL FACTORS, PORTAL HYPERTENSION, RAT (4852)
HEPATIC ARTERY, ANEURYSM, HEMORRHAGE (5395)
HEPATIC COMA, ESOPHAGEAL VARICES, HEMORRHAGE, CARCINOMA, BILIRUBIN (5342)
HEPATIC COMA, FLAPPING TREMOR, PYRAMIDAL SIGNS, HEMORRHAGE, AMMONIEMIA, ELECTROLYTES, CORTICAL LESIONS (5217)
HEPATIC COMA, HETEROGRAFT, BABOON, IMMUNODEPRESSIVES, CORTICOIDS, CROSS CIRCULATION, MAN (5213)
HEPATIC FAILURE, ACUTE HEPATITIS, ULTRASTRUCTURE, MITOCHONDRIA, ENDOPLASMIC RETICULUM (5258)
HEPATIC INSUFFICIENCY, ANOXEMIA, PROTHROMBIN, COAGULATION, SHOCK, NEWBORN INFANTS (5288)
HEPATIC INSUFFICIENCY, WILSON'S DISEASE, SURGERY, LEUDOPENIA, THROMBOPENIA, GASTRODUODENAL, HEMORRHAGE (5200)
HEPATIC INSUFFICIENCY, PANMEDIA, STEATOSIS, ANOREXIA, HEPATITIS (5199)
HEPATIC LESION, ISONIAZID, LUNG TUMOR, ANTITUBERCULAR ACTIVITY, RIFAMPICINE (5230)
HEPATIC PORPHYRIA, KIDNEY BIOPSY, FLUORESCENCE MICROSCOPY, RENAL TUBULI (5216)
HEPATITIS, ADOLESCENT, EPIDEMIOLOGY (5262)
HEPATITIS, CIRRHOSIS, BILIRUBIN, TRANSAMINASE, ALBUMIN, GAMMA GLOBULIN, PROTEIN FRACTIONS (4932)
HEPATITIS, CIRRHOSIS, ENZYME ACTIVITY, METHODS, SGOT, SGPT, SERUM, LDH, PLASMA (4933)
HEPATITIS, ICTERUS, CIRRHOSIS (5263)
HEPATITIS, ANTIGEN, IMMUNOELECTROPHORESIS, OUCHTERLONY TECHNIQUE, BLOOD TRANSFUSION (4945)
HEPATITIS, IMMUNOBLOBIN, TRANSAMINASE (5271)
HEPATITIS, INFECTIOUS, SERUM, ANTIGEN, IMMUNOLOGIC DISTINCTION (5253)*
HEPATITIS, JAUNDICE, PARENCHYMAL VOLUME, STEATOSIS (5259)
HEPATITIS, PELIOSIS, RADIOTHERAPY (5243)
HEPATITIS VIRUS, PROTEIN SYNTEHSIS, CELL CULTURES, ANTINUCLEAR ANTIBODY, DNA VIRUS, RNA VIRUS (5257)
HEPATOCELLULAR DISEASE, COAGULATION, FIBRINOGEN (5203)
HEPATOMA, ALDOLASES, YOSHIDA ASCITES (5175)*
HEPATOMA, ENZYME, INDUCTION, TYROSINE AMINOTRANSFERASE, GLUCOCORTICOID BINDING, CORTISOL, DEXAMETHASONE (5170)*
HEPATOMEGALY, AMEBIASIS, ORNITHINE-CARBAMYL TRANSFERASE, RADIOGRAPHY, DIURESIS (5397)*
HEPATOSIS, ALCOHOLISM, FATTY, SILYMARIN, PARENCHYMAL DAMAGE, BLOOD CHEMISTRY, ELECTRON MICROSCOPY (5165)
HYDATID CYST, BILIARY TRACT, CHOLANGIOGRAPHY, ODDI'S SPHINCTER (5401)
HYDATID CYST, ARTERIOGRAPHY, CELIAC TRUNK, CYSTECTOMY (4934)
HYDATID CYST, LAPAROSCOPY, ARTERIOGRAPHY, IMMUNOELECTROPHORESIS, CYSTECTOMY (5402)
HYDATID CYST, SCINTOGRAPHY, ECHINOCOCCOSIS, TUMOR (4946)
HYDATIDOSIS, SURGERY, BILIARY TRACT (5400)
HYPERTROPHY, STEATOSIS, HYPERPHAGIA, HYPOTHALAMIC LESION, GOOSE (5188)
INFECTIOUS HEPATITIS, BILE ACID, STEROID SULPHATE, CONCENTRATION, SERUM (5254)*
INFECTIOUS HEPATITIS, PROPERDIN, CIRRHOSIS, CHOLECYSTOPATHY, UNSPECIFIC IMMUNITY, NEWCASTLE DISEASE (5202)
INJURY, PROTECTIVE AGENTS, ALLYL ALCOHOL, BSP TEST, STATISTICAL EVALUATION, RAT (4895)
INJURY, PROTEIN, DIET (5250)
INSUFFICIENCY, CHOLEMIA, GLYCOGENOSIS, GALACTOSE, FRUCTOSE, HYPERBILIRUBINEMIA, DETOXIFICATION, ENZYMATIC DEFICIT (5191)
IRON ACCUMULATION, HUMAN-PHANTOMREMCAL, RADIOIRON KINETICS, HEMATOLOGICAL DISEASE (5251)
ISOENZYME, PURIFICATION, HUMAN, CHICKEN (4717)
JAUNDICE, CHRONIC, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (5219)
LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)*
LESION, VASCULAR, AVASCULAR, DIFFERENTIATION, LIVER SCAN (4891)*
LESIONS, GASTRECTOMY, ENCEPHOPATHY, HYPERAMMONEMIA, HEPATIC CIRRHOSIS (4950)
LIPID, SPECTROPHOTOMETRIC METHOD, FATSPECIFIC DYE, FATTY DEGENERATION, HISTOCHEMICAL METHOD (5164)
LIPID METABOLISM, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)*
LIPID, PREGNANCY (5245)
LIPID, METABOLISM, BIOPSY, UNSATURATED FATTY ACIDS, ALCOHOLISM, MITOCHONDRIA (5234)
MEMBRANE, MICROSOMAL, CYTOCHROME, INDUCTION, MECHANISM (4832)*

METABOLISM, AMINO ACID, SPLEEN (4847)
METABOLISM, D-FRUCTOSE (5211)
METABOLISM, GLYCOGEN, SYNTHESIS, BIOTIN DEFICIENCY (4836)•
METABOLISM, VITAMIN B12 ABSORPTION, INTESTINAL ABSORPTION, PROFILE SCANNING (5075)•
METASTASES, ALKALINE PHOSPHATASE, LAPAROSCOPY, HYPOCHONDRIUM, DYSPEPSIA, EPIGASTRIUM (5204)
METASTASES, CANCER, COLON, RECTUM, CHEMOTHERAPY, ARTERIAL INFUSION, SURGERY (5198)
METASTASES, GAMMA-GLUTAMYL-TRANSPEPTIDASE, ALKALINE PHOSPHATASE, OBSTRUCTIVE JAUNDICE (4936)
METASTASES, CIRRHOSIS, SCANNING, COLLOIDAL RADIOGOLD, RADIOIODINE, SCINTIGRAM, TECHNETIUM (4922)
MICROLIPIDS, BIOPSY, TRIGLYCERIDES, STEATOSIS (4896)
MICROSOMAL ENZYME, SLEEPING TIME, PENTOBARBITAL, PHENOBARBITAL, INDUCTION, REVERSIBILITY, MICE (4743)
MICROSOME, ENZYME, RAT (4716)
MICROSOME, ENZYME, WAX (4720)
MICROSOME, LIVER CHROMATIN, RNA SYNTHESIS, ACTINOMYCIN, CORTISOL (4710)•
MICROSOME, MEMBRANES, PHOSPHOLIPID METABOLISM, ENDOPLASMIC RETICULUM, POLYSOMES (4841)•
MICROSOME, MONOOXYGENASE, ADRENAL, GUINEA PIG (4732)
MICROSOME, OXIDASE (4858)
MITOCHONDRIA, BILIRUBIN, METABOLISM (5241)
MITOCHONDRIA, CELL CULTURES, L-CYSTEINE, AMNIOTIC CELLS, ATPASE, CHICK EMBRYO (4741)•
MITOCHONDRIA, ENZYME, CHICKEN (4719)
MITOCHONDRIA, ENZYME, DEVELOPMENT (4727)
MITOCHONDRIA, ENZYME, KINETICS, RAT (4843)•
MITOCHONDRIA, FRAGILITY, PERMEABILITY, ETHANOL, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)•
MITOCHONDRIA, NUCLEIC ACIDS, ENDOPLASMIC RETICULUM, GUNIEA PIG (4739)
MITOCHONDRIA, MONOAMINE OXIDASES, BENZYLAMINE, SEROTONIN, MICHAELIS CONSTANT (4691)•
MITOCHONDRIA, ULTRASTRUCTURE CHANGE, TOCOPHEROL DEFICIENCY (5176)•
MULTIFOCAL FIBROMATOSIS, CHOLANGITIS, XANTHOFIBROGRANULOMA, BILE DUCT (5326)
MULTIPLE MYELOMA, KAHLER'S DISEASE, HYPERLEUCOCYTOSIS, PROTEINURIA, NORMOCHROMIC ANEMIA (5275)
NECROSIS, ANESTHESIA, TOXICITY (5244)
NICOTINE, METABOLISM, MOUSE (4828)•
NUCLEAR MEMBRANE, PHOSPHOLIPID, NEUTRAL LIPID, FATTY ACID (4695)•
NUCLEIC ACID, CALORIC DEFICIENCY, ZINC, MANGANESE, HYPOPHYSECTOMY, RAT (4829)•
NUCLEUS, PROTEIN, BIOSYNTHESIS, METALS, RAT (4830)•
OBSTRUCTIVE JAUNDICE, LECITHIN-CHOLESTEROL ACYLTRANSFERASE (5301)•
PARENCHYMA, GALLBLADDER CHANGES, CHOLECYSTOGRAPHY, HYPOKINESIA, LITHIASIS (5302)
PATHOLOGY, CARBOHYDRATE, METABOLISM (5180)
PATHOLOGY, SJOGREN'S SYNDROME, RHEUMATOID ARTHRITIS (5206)
PELIOSIS, ALLYL ALCOHOL, ENZYMES, RATS (5174)•
PERFUSION, GLUCOSE, ENZYME, SUPPRESSION, RAT (4745)
PERFUSION, HEPATIC COMA, ULCERATIVE COLITIS, HEMOSTASIS (5283)•
PERFUSION, SULFOBROMOPHTHALEIN, EXCRETION, STEROID, RAT (4833)•
PERIARTERIAL, NEURECTOMY, DNA, NUCLEIC ACID, HEPATOCYTE, NUCLEAR MEMBRANES (5203)
PERIHEPATITIS, PORTAL HYPERTENSION, SPLENECTOMY, ANASTOMOSIS (5289)
PHALLOIDIEN HEPATITIS, MUSHROOM POISONING, DIARRHEA (5332)
POLYGLOBULISM, CANCER, ERYTHROCYTOSIS, ELECTROPHORESIS, BIOPSY (5189)
POLYRIBOSOMES, ADRENALECTOMY, RADIATION TOXICITY, REGENERATION (4823)•
POLYRIBOSOMES, RNA, HOMOPOLYMERS, ADENINE, POLYNUCLEOTIDES, ACTINOMYCIN D (4699)•
PORTAL HYPERTENSION, RADIOLOGY, SURGERY (5298)
PROTEASE, PAPAIN, PARTIAL HEPATECTOMY, KAMBARA, MITOTIC INDEX (4851)
PROTEIN, DNA, RAT (4718)
PROTEINS, CYTOCHROME P-450, HEMOPROTEINS, OXYGEN ACTIVATION, ABSORPTION, SPECTRUM (4822)•
PROTEIN, METABOLISM, VALINE, INSULIN INHIBITION, PROTEOLYSIS, RAT (4837)•
PROTEIN, RNA, CORTISONE, RAT (4842)•
PROTEIN SYNTHESIS, AMINO ACID INCORPORATION, CORTIDOL TREATMENT, IN VIVO, IN VITRO, RAT (4834)•
PROTEIN SYNTHESIS, ANTIBIOTIC INHIBITION, DNA REPLICATION, THYMIDINE, CYTIDINE, PARTIAL HEPATECTOMY (4831)•
PROTEIN, SYNTHESIS, ENHANCEMENT, METHYLCOBALAMIN, DAMAGE, RAT (4819)•
PVNO, BLOCKING EFFECT, PHAGOCYTE ACTIVITY, RABBITS (4872)•
REGENERATION, FOLIC ACID, PARTIAL HEPATECTOMY, RAT (4835)•
REGENERATION, MITOSIS (4855)
REGENERATION, RADIATION, AMINO ACID, INCORPORATION, PROTEIN (4826)•
REGENERATION, RNA SYNTHESIS, CYCLOHEXIMIDE, RAT (4821)•
RIFAMPICINE, STEATOSIS, HYPERGLYCEMIA, PYRIDOXINE, ANTITUBERCULOUS MECHANISM, MALNUTRITION (5229)
RNA, CELLS, FASTING, RAT (4702)•
RNA, SYNTEHSIS, CORTISONE, RAT (4824)•
RUPTURE, PREGNANCY (5247)
SCAN, CIRRHOSIS, ABSCESS, COLLOIDAL GOLD (4889)•

  - SCAN, PANCREAS (4749)
  - SECRETION, BILIRUBIN, SHEEP (4781)
  - SHOCK, TRAUMA, JAUNDICE (5238)
  - SURGERY, JAUNDICE, CHOLESTASIS, HEPATITIS (5179)
  - TOLBUTAMIDE TEST, METABOLISM, GLUCOSE (4916)
  - TOXICITY (5248)
  - TOXICITY, ALKALOID, RAT (5239)
  - TOXICITY, CHLORETHANOL, GROWTH, RAT (5231)
  - TRANSPLANT, VASCULAR ANOMALIES, PRESERVATION, RENAL TRANSPLANTS, BLOOD GROUPS, TISSUE GROUPS, ISCHEMIA (5186)
  - TUMOR, SCLEROSIS (5181)
  - ULCERATIVE COLITIS, ABSCESS, EXTRAINTESTINAL COMPLICATIONS, EYES, ANAL PROLAPSE (5130)
  - ULTRASTRUCTURE, MICROBODIES, PEROXIDASE ACTIVITY, 3-AMINO-1,2,4-TRIAZOLE (4747)*
  - ULTRASONIC SCANNING, CIRRHOSIS, METASTASES, CANCER, HUMAN (4892)*
  - VAGOTOMY, CHOLEITHIASIS, CHOLECYSTECTOMY (5304)
  - VAGOTOMY, GALLBLADDER (5178)
  - VASCULARIZATION, PANCREAS, COLON, SURGERY, CELIAC TRUNK (5145)
  - VIRAL HEPATITIS, ACUTE ATROPHY, AMINOPEPTIDASE, ALKALINE PHOSPHATASE, ATPASE, GLUCURONIDASE, HISTOCHEMISTRY (5267)
  - VIRAL HEPATITIS, AUSTRAAIA ANTIGEN (5272)
  - VIRAL HEPATITIS, HEMOGLOBIN A2, HEMOLYTIC ANEMIA, BLOOD GROUPS, JAUNDICE (5260)
  - VIRUS HEPATITIS, POSTHEPATIC CIRRHOSIS, CHOLELITHIASIS, HEMICOLECTOMY, ALCOHOL CONSUMPTION, CHOLECYSTOPATHY (5265)
  - VITAMIN, PATHOLOGY (5242)
  - ZIEVE'S SYNDROME, JAUNDICE, STEATOSIS, ALCOHOLIC CIRRHOSIS, HEMOLYTIC ANEMIA (5284)

- LYMPHATIC
  - LYMPH NODE, REMOVAL, GASTRIC CANCER (4979)*
- MALABSORPTION
  - CELIAC DISEASE, STENOSIS, ISCHEMIA, ARTERIOGRAPHY, ATHEROMA, ADENOPATHY, PANCREAS (5348)
  - CIRRHOSIS, CALCIUM, VITAMIN K (5081)
  - GLUCOSE, ERYTHROCYTE, MEMBRANE TRANSPORT (5084)
  - INTESTINE, ENTERITIS (5076)
  - INTESTINE, ISCHEMIA, SURGERY (5086)
  - INTESTINE, PSORIASIS, ROSACEA (5088)
  - JEJUNUM, DIVERTICULOSIS, OSTEOMALACIA, RICKETTS (5078)
  - JEJUNUM, PARASITE (5089)
  - LIVER, CIRRHOSIS, FOLIC ACID, PTEROYLGLUTAMIC ACID (5074)
  - PANCREATITIS, OSTEOMALACIA, BLIND LOOP SYNDROME (5159)
  - PROTEIN, MALNUTRITION, SMALL INTESTINE (5377)
  - SMALL INTESTINE, PARTIAL GASTRECTOMY, D-XYLOSE, FAT (5073)*
  - SMALL INTESTINE, STRONGYLOIDES (5082)
  - SMALL INTESTINE, TETANY, GAMMA GLOBULIN (5077)
  - SPRUE, SMALL INTESTINE, GRANULOMA, JEJUNAL BIOPSY (5052)
  - STEATORRHEA, CELIAC DISEASE, JEJUNUM, MUCOSA (5085)
  - WHIPPLE'S DISEASE, SMALL INTESTINE, MUCOSA (5087)
- MESENTERY
  - INFARCTION, OBSTRUCTION (5379)
  - MESOCOLON, SIGMOID, HEMATOMA, ETIOLOGY (5105)
  - PACINIAN CORPUSCLE, BETA RADIATION (4882)
- METABOLISM
  - AMINO ACID, TOXICITY, HYPOGLYCIN (5249)
  - BARBITURATE, LIVER, MICROSOMAL HYDROXYLASE, INDUCTION, SLEEPING TIME (4744)
  - BILE, CARDIOGLYCOSIDE, ABSORPTION (4779)*
  - CARBOHYDRATE, LIVER, PATHOLOGY (5180)
  - CHOLESTEROL, LIVER, RAT (4856)
  - CHOLESTEROL SYNTHESIS, LIVER, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
  - COLLAGEN, LIVER, FIBROSIS, REVERSIBILITY, RAT (5222)*
  - DRUG, REDUCTASES, METYRAPONE, LIVER MICROSOME (4839)*
  - GLUCOSE, LIVER, TOLBUTAMIDE TEST (4916)
  - GLUCURONIDE, LIVER, ULCERATIVE COLITIS, TRANSAMINASE, GLUCURONYLTRANSFERASE, OIB TEST (5122)
  - GLYCOGEN, LIVER, RADIOACTIVITY, GLUCOSE INCORPORATION (4861)
  - GLYCOGEN SYNTHESIS, LIVER, BIOTIN DEFICIENCY, RAT (4836)*
  - INTESTINE, OIL, MICELLAR PHASES, CHILDREN (4863)*
  - IRON, GASTROFERRIN, HEMOCHROMATOSIS (5071)*
  - LIPID, ALCOHOL, INSULIN, CHOLESTEROL, FREE FATTY ACIDS, TRIGLYCERIDES (5227)
  - LIPID, ALCOHOLISM, LIVER, UNSATURATED FATTY ACIDS, RETROGRESSION, MITOCHONDRIA (5234)
  - LIPID, DIET (4848)
  - LIPID, FATTY ACID, GASTROINTESTINAL TRACT (4883)
  - LIPID, FATTY LIVER, LIVER BIOPSY, STEATOSIS, TRIBLYCERIDES (4896)
  - LIPID, GASTROINTESTINAL TRACT, FATTY ACIDS, ESTERS, RABBIT (4885)
  - LIPID, LIVER, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)*
  - LIVER, AMINO ACID INCORPORATION, POLYRIBOSOMES, ATP, RAT (4712)*
  - LIVER, D-FRUCTOSE (5211)
  - LIVER, ENZYME, HUMAN (4857)
  - LIVER, ENZYME SYSTEMS, DISULFIDE BOND, MICROSOMES, INSULIN, RAT (4795)*

- LIVER, HEPATIC ENZYMES, NADH OXIDATION (4689)•
- LIVER, PHOSPHORUS INCORPORATION, PHOSPHOLIPID FRACTION, MICROSOMAL MEMBRANE (4841)•
- LIVER, PROTEIN METABOLISM, INSULIN EFFECT, PROTEOLYSIS, LYSINE, RAT (4837)•
- LIVER, SPLEEN, AMINO ACID (4847)
- LIVER, VITAMIN B12, ABSORPTION, SCAN (5075)•
- MITOCHONDRIA, LIVER, BILIRUBIN (5241)
- NICOTINE, COTININE, LIVER, MOUSE (4828)•
- PORPHYRIA, KIDNEY BIOPSY, HEPATIC DISEASE, FLUORESCENCE MICROSCOPY (5216)
- PROTEIN, CIRRHOSIS, DIET (5299)
- RNA, LIVER, CELL, FASTING, RAT (4702)•
- STEROID, FECES, HUMAN (4875)

MITOSIS
- LIVER, REGENERATION (4855)

MOTILITY
- COLON, ANGIOTENSIN, ACETYLCHOLINE, ATROPINE, PROCAINE, HEXAMETHONIUM (4795)•
- COLON, ILEUM, HYPOTHYROIDISM, SLOW WAVES (4786)•
- CONTINENCE, ULCERATIVE COLITIS, SURGERY, ILEUS, ILEOSTOMY, COLECTOMY, ANASTOMOSIS (5128)
- DIGESTIVE TRACT, TRIGLYCERIDE (4799)
- DUODENUM, JEJUNUM, ILEUM, RADIATION INJURY (4791)•
- DUODENUM, STOMACH, NICOTINE (4801)
- DUODENAL, DYSKINESIA, OBSTRUCTIVE, JAUNDICE, ODDI SPHINCTER, RADIOKINETICS (5322)
- ELECTROMYOGRAPHY, ESOPHAGUS, GASTROESOPHAGEAL SPHINCTER, INTRALUMINAL PRESSURE, DEGLUTITION (4789)•
- ELECTROMYOGRAPHY, STOMACH, ANTRUM, MUCOSA, MUSCLE, ELECTRICAL ACTIVITY, RECORDING, MAN (4796)•
- ESOPHAGUS, ANASTOMOSIS, HEMORRHAGE (4964)
- GASTROINTESTINAL TRACT, ULCER, STOMACH, DUODENUM (5032)
- INCONTINENCE, ANAL SPHINCTER, SURGERY, FASCIA PLASTIC, GRACILIS MUSCLE (4968)
- INTESTINE, CIRCULATION, HYPEROSMOLARITY (5338)
- JEJUNUM, RELAXATION, ANTIBIOTICS, BLOCKING AGENTS (4787)•
- SMALL INTESTINE, MESENTERIC ARTERY OCCLUSION, DRUG EFFECTS (4788)•
- SMALL INTESTINE, SEROSA, MUCOSA, ATP, TRANSMEMBRANE POTENTIAL (4760)•
- STOMACH, DUODENUM, NICOTINE, SITE OF ACTION, DOG (4793)•
- STOMACH, GASTRIN PENTAGASTRIN, ACIDITY (4808)

MUCOSA
- JEJUNUM, CELIAC DISEASE, STEATORRHEA (5085)

MUSCLE
- GRACILIS, SURGERY, ANAL SPHINCTER INSUFFICIENCY (4968)
- SMOOTH, STOMACH, ANTRUM, ELECTRICAL ACTIVITY, RECORDING, MAN (4796)•

NERVOUS SYSTEM
- ADRENERGIC RECEPTORS, GASTRIC ULCER, ALPHA-RECEPTORS, BETA-RECEPTORS, PHENYLEPHRINE HYDROCHLORIDE, RAT (5021)
- HEPATIC COMA, FLAPPING TREMOR, PYRAMIDAL SIGNS, CORTICAL LESIONS, AMMONEMIA, HEMORRHAGE (5217)
- HYPOTHALAMIC, LESION, HYPERPHAGIA, STEATOSIS, OBESITY, LIVER HYPERTROPHY, GOOSE (5188)
- NERVE PLEXUS, INTESTINAL INNERVATION, INNER MUSCLE LAYER, ULTRASTRUCTURE (4696)•
- NEURINOMA, PEDUNCOLATED, STOMACH (4987)
- PACINIAN CORPUSCLE, BETA RADIATION, MESENTERY (4882)
- PELVIC PLEXUS, RECTUM AMPUTATION, CYSTOMETRIC EXAMINATION, HYPOTONUS, BLADDER PRESSURE (5095)
- PERIARTERIAL NEURECTOMY, HEMODYNAMICS, VASOMOTOR ACTION, LIVER (4874)
- VAGOTOMY, ESOPHAGUS, ELECTRICAL ACTIVITY, DEGLUTITION, GASTROESOPHAGEAL SPHINCTER (4789)•
- VAGOTOMY, LIVER, CHOLELITHIASIS, CHOLECYSTECTOMY (5304)
- VAGOTOMY, LIVER, GALLBLADDER (5178)
- VAGOTOMY, POST-VAGOTOMY SYNDROME, DIARRHEA, GASTRIC (5375)
- VAGOTOMY, ULCER, DUODENUM, PARIETAL CELL MASS (5030)

NUCLEIC ACID
- DNA INJECTION, PERIARTERIAL NEURECTOMY, LIVER, HEPATOCYTE, NUCLEAR MEMBRANE (5203)
- DESOXYRIBO, RIBO, FETAL LIVER, COBALT RADIATION (5166)
- DESOXYRIBO, ULCERATIVE COLITIS, HYPERSENSITIVITY, ANTIBODY, AUTOLOGOUS LEUCOCYTES, SALAZOPYRINE, TISSUE DAMAGE (5132)
- DESOXYRIBOSE, ENZYME, INTESTINE, MUCOSA (4723)
- DESOXYRIBOSE, LIVER, PROTEIN, RAT (4718)
- LIVER MITOCHONDRIA, ENDOPLASMIC RETICULUM, PURIFICATION, PREPARATION, GUINEA PIG (4739)
- NUCLEAR DNA, AGE FACTOR, FLUORESCENT EMISSION, DNA-PO4-GROUPS, GUNIEA PIG (4715)
- RNA, BREAKDOWN, LIVER, RAT, CORTISONE (4842)•
- RNA, DNA TRANSCRIPTION, LIVER SUPERNATENT, POLYMERASE, TEMPLATE AFFINITY, ATP (4697)•
- RNA, LIVER, CELLS, FASTING, RAT (4702)•
- RNA, LIVER POLYRIBOSOMES, HOMOPOLYMERS, ADENINE, POLYNUCLEOTIDES, ACTINOMYCIN D (4699)•
- RNA, POLYNUCLEOTIDES, ADENINE, LIVER POLYRIBOSOME CARRIER RNA, ACTINOMYCIN K (4693)•
- RNA, REGENERATING LIVER, NUCLEAR

  - TEMPLATE CAPACITY, CYCLOHEXIMIDE (4821)*
  - RNA, SYNTHESIS, CORTISOL BINDING, POLYMERASE, ACTINOMYCIN (4710)*
  - RIBOSOMAL, RNA, LIVER, CORTISONE RAT (4824)*
  - TRYPTOPHANYL-TRNA, PANCREAS, PROTEIN CHROMOPHORES, SPECTROFLUOROMETRY, TRYPTAMINE (4738)
- NUCLEOSIDE
  - ADENOSINE, ENZYME, LIVER, NUCLEOTIDE (4850)
  - LIVER, ENZYME, INTERACTION (4862)
- NUCLEOTIDE
  - ATP, SMALL INTESTINE, TRANSMURAL POTENTIAL, ELECTROPHYSIOLOGY, SEROSA, MUCOSA (4760)*
  - ADENINE, ENZYME, LIVER, ADENOSINE (4850)
  - ADENINE NUCLEOTIDE SYSTEM, EQUILIBRIUM, ATP, ADP, LIVER, RAT (4733)
  - POLYVINYLPYRIDINE-N-OXIDE, BLOCKING EFFECT, SPLEEN/LIVER, RETICULOENDOTHELIAL CELLS, PHAGOCYTE ACTIVITY, RABBITS (4872)*
- NUTRITION
  - CALORIC DEFICIENCY, RESTRICTION, NUCLEIC ACIDS, ZINC, MANGANESE, LIVER, RAT (4829)*
  - FASTING, PANCREAS, SECRETION, ENZYME (4813)
  - GASTROENTERITIS, ELECTROLYTE (5384)
  - KWASHIORKOR, ENXYME ACTIVITY, LIVER, CHILDREN (5394)
  - MAL-, BIAFRAN CHILDREN, PROTEIN, ANEMIA, LIVER, SPLEEN, CARDIOPATHY, CONVULSIONS, BACTERIAL INFECTIONS (5340)
  - MAL-, PROTEIN, MALABSORPTION, SMALL INTESTINE (5377)
  - MAL-, PROTEIN, PANCREAS (5360)
  - MAL-, PROTEIN, WEIGHT, HIGH MORTALITY, SENEGALESE CHILDREN (5349)
  - PELLETED DIET, ENERGY REQUIREMENT, MAGNESIUM, GASTRIC SECRETION, RABBIT (4879)
  - RABBIT, MICROORGANISMS, COLON, PROTEIN, NITROGEN, VITAMINS, ENZYMATIC SECRETIONS (4886)*
  - RICKETTS, JEJUNUM, DIVERTICULOSIS, MALABSORPTION, OSTEOMALACIA (5078)
- OBESITY
  - LIVER HYPERTROPHY, HYPERPHAGIA, HYPOTHALAMIC LESION, GOOSE (5188)
- OXYGEN
  - CONSUMPTION, HYPOTHYROIDISM, SLOW WAVES, COLON, ILEUM, RABBITS (4786)*
- PANCREAS
  - ABERRANT, DUODENUM, CYSTIC DYSTROPHY (5147)
  - ACUTE PANCREATITIS, CHRONIC, GLUCOSE TOLERANCE, LIPASE, AMYLASE (4938)
  - ACUTE PANCREATITIS, DIAGNOSIS, RADIOLOGY (4905)
  - ACUTE PANCREATITIS, DUODENAL FISTULA, TRYPSIN INACTIVATOR (4981)
  - ACUTE PANCREATITIS, ENZYMATIC TOXEMIA, DIALYSIS, HYPOTHERMY, DOG (5148)
  - ACUTE PANCREATITIS, HEMORRHAGE, ENZYMATIC TOXEMIA (5154)
  - ACUTE PANCREATITIS, LIPASE, ANTITHROMBIN III, ENZYME INHIBITORS, APLANCHNIC BLOCK, HYPOTHERMIA (5163)
  - ARTERIOGRAPHY, SCINTIGRAPHY, ANGIOSCINTIGRAPHY, CARCINOMA, SURGERY (4948)
  - CANCER, ADENOMA, CHOLANGIOGRAPHY, ARTERIOGRAPHY, MICROSCOPIC EXAMINATION, SURGERY (5146)
  - CANCER, ANASTOMOSIS, METASTASES, BIOPSY (5141)
  - CARCINOMA, 5-FLUOROURACIL, TELECOBALT (5136)*
  - CELIAC DISEASE, ARTERIOGRAPHY, ISCHEMIA, ADENOPATHY, STENOSIS (5348)
  - CHROMOPHORES, INTRINSIC, EXTRINSIC, TRYPTAMINE, TRYPTOPHANYL-TRNA (4738)
  - CHRONIC AND ACUTE PANCREATITIS, CARCINOMA, PSEUDOCYSTS, TRAUMA, ABDOMINAL PAIN, LAPAROTOMY, ABSCESS (5144)
  - CHRONIC PANCREATITIS, ALCOHOLISM, DIABETES (5157)
  - CHRONIC PANCREATITIS, BILE DUCT, ANASTOMOSIS, FIBROSIS, THORACIC SYMPATHECTOMY, SPLANCHIECTOMY (5162)
  - CHRONIC, PANCREATITIS, BILIARY LITHIASIS, ANASTOMOSIS, WIRSUNG'S CANAL, CHOLANGIOGRAPHY (5151)
  - CULTURE, METHIONINE, ULTRASTRUCTURE, ENZYME ACTIVITY, RAT EMBRYO (4701)*
  - CYSTIC FIBROSIS, CHROMOSOMES, DERMATOGLYPHICS DYSPLASIA, PERIPHERAL BLOOD (5138)
  - CYSTIC FIBROSIS, INTESTINAL ATRESIA, MECONIUM ILEUS, PANCREATIC FUNCTION, MUCOVISCIDOSIS, NEWBORN INFANT (5063)
  - CYSTS, PSEUDOCYSTS, CYSTADENOMAS, PRESSURE, SURGERY, DRAINAGE, ANASTOMOSIS (5139)
  - CYSTS, PSEUDOCYSTS, RADIOLOGY, SURGERY, DRAINAGE (5140)
  - DIAGNOSIS, PALPATION, SURGERY (4903)
  - ENDOTHELIUM, PERMEABILITY, HORSERADISH PEROXIDASE (4770)
  - EXOCRINE, ENDOCRINE, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
  - EXOCRINE, MALNUTRITION, PROTEIN (5360)
  - FUNCTION, ALCOHOLIC CIRRHOSIS, SECRETIN, AMYLASE, LIPASE, PANCREOZYMIN (5278)
  - INSUFFICIENCY, MALABSORPTION, ENTERITIS (5076)
  - INSUFFICIENCY, PANCREATECTOMY, DOG (5137)*
  - JUICE COLLECTION, SURGERY (4772)
  - LIPASE, TETRACYCLINE (4814)
  - LIPASE, TRIOCTANOIN (4817)
  - PANCREATITIS, ACUTE ABDOMINSL PAIN, CHOLELITHIASIS, SPASMOLYTIC, PYRAZOLONE DERIVATIVE, ANALGESIC (5369

- PANCREATITIS, ALBUMIN, AMYLASE (5156)
- PANCREATITIS, AMYLASE, AUTOANALYZER, GLYCEMIA, DIAGNOSIS (4942)
- PANCREATITIS, BILIARY LITHIASIS, AMYLASE, LIPASE, ABDOMINAL PAIN, LEUCOCYTES, HYPOCALCEMIA (5153)
- PANCREATITIS, BILIARY DUCT, PERFORATION, PERITONITIS, THROMBOSIS,, NECROSIS (5149)
- PANCREATITIS, CELIAC TRUNK, FIBROSIS (5160)
- PANCREATITIS, GASTRODUODENAL ULCER, HEMORRHAGE, BLOOD TRANSFUSION (4994)
- PANCREATITIS, INTERNAL BURN, PERITONEAL DIALYSIS, SHOCK, TRYPSIN INHIBITORS, AMYLASE (5150)
- PANCREATITIS, HEXASE, COLON, BILIARY TRACT (5356)
- PANCREATITIS, PREGNANCY, DIABETES, CHILDREN (5161)
- PANCREATITIS, OSTEOMALACIA, BLIND LOOP SYNDROME, MALABSORPTION (5159)
- PANCREATITIS, SCORPION STING (5158)
- PANCREATITIS, SURGERY, GALLSTONES, NECROTIC LESIONS, X-RAY TREATMENT, PERITONEAL DIALYSIS (5152)
- POSTOPERATIVE, PANCREATITIS, NECROSIS, GASTRIC RESECTION, DUODENAL ULCER, CARCINOMA (5155)
- RIBONUCLEASE, PROTEIN, BOVINE (4750)
- SCAN, LIVER (4749)
- SECRETION, AMYLASE (4816)
- SECRETION, CHOLELITHIASIS, GALLBLADDER (5329)
- SECRETION, FASTING, ENZYME (4813)
- SECRETION, LIPASE, TRIBUTYRINE (4815)
- THIAMINE PYROPHOSPHOKINASE, THIAMINE ABSORPTION, PHOSPHORYLATION, TRANSKETOLASE, THIAMINE PYROPHOSPHATE (5143)
- TRAUMA, FISTULA, PANCREATO-DUODENECTOMY, PSEUDOCYSTS, RUPTURE, AORTOGRAPHY (5142)
- TUMOR, BILIARY-JEJUNAL BYPASS, JEJUNUM BILE DUCT (5300)*
- TUMOR, SCLEROSIS (5181)
- VASCULARIZATION, LIVER, COLON, SURGERY, CELIAC TRUNK (5145)
- ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS, BIOASSAY, GASTRIN (4921)
- ZOLLINGER-ELLISON SYNDROME, ISLET CELL TUMOR, GASTRIN, DIARRHEA (5381)

PARASITE
- ASCARIS, LIVER, ABSCESS (5399)
- ASCARIS, ENTERITIS, JEJUNUM, ILEUM (5358)
- COLON, HELIGMOSOME, RODENTS (5405)
- ENTAMEBA HISTOLYTICA, SEROLOGY, ANTIGEN (5403)
- HYDATID CYST, LIVER, BILIARY TRACT, SURGERY, CHOLANGIOGRAPHY (5401)
- HYDATID, CYST, LIVER, CELIAC TRUNK, CYSTECTOMY, ARTERIOGRAPHY (4934)
- HYDATID CYST, LIVER, LAPAROSCOPY, CYSTECTOMY, IMMUNOELECTROPHORESIS (5402)
- HYDATID CYST, SCINTOGRAPHY, ECHINOCOCCOSIS, TUMOR (4946)
- JEJUNUM, MALABSORPTION (5089)
- SMALL INTESTINE, MALABSORPTION (5082)
- SYPHACIA OBVELATA, HELMINTH, TETRACHLOROTHIOPHENE, NEMATICIDE, PESTICIDES, MICE (5408)

PARASITIC DISEASE
- AMOEBIASIS, DYSENTERY, ANTIBIOTIC (5383)
- AMOEBIASIS, HEPATOMEGALY, ORNITHINE-CARBAMYL TRANSFERASE, DIURESIS, HISTOLOGICAL LESIONS (5397)*
- AMOEBIASIS, LEISHMANIASIS, TRYPANOSOMIASIS (5398)
- DISTOMATOSIS, FASCIOLA HEPATICA, IMMUNOFLUORESCENCE, IMMUNOELECTROPHORESIS, COMPLEMENT FIXATION, LAPAROSCOPY (4907)
- DISTOMATOSIS, LIVER, LAPAROSCOPY, CAPSULITIS, BIOPSY (4908)
- ECCHINOCOCCOSIS, E. CYSTICUS, E. ALVEOLARIS, LIVER TUMORS, BILE DUCT STASIS, METASTASES, SURGERY (5407)
- ECCHINOCOCCUS, LIVER, DIAGNOSIS, LIVER SCAN (4887)*
- GIARDIASIS, FECES, PARASITE, BACTERIA, VIRUS (4880)
- HISTOPLASMOSIS, GRANULOMATOUS HEPATITIS (5237)
- HYDATIDOSIS, LIVER, SURGERY, BILIARY TRACT (5400)
- HYMENOLEPIS, MIGRATION, INTESTINE, GLUCOSE (5404)

PERITONEUM
- DIALYSIS, PANCREATITIS, GALLSTONES, X-RAY, NECROSIS (5152)
- DIALYSIS, PANCREATITIS, INTERNAL BURN, SHOCK, TRYPSIN INHIBITORS (5150)
- EFFUSION, ACUTE PANCREATITIS, ENZYMATIC TOXEMIA, DIALYSIS, HYPOTHERMY, DIALYSIS (5148)
- HEMORRHAGE, ABDOMINAL TRAUMA, SURGERY, HEMATOMA (4909)
- OSMOSIS, TRANSPORT MECHANISM, OSMOLARITY, NET WATER FLUX, SOLUTE EXCHANGE (4758)*
- PERITONITIS, PANCREATITIS, BILIARY TRACT, PERFORATION, NECROSIS (5149)
- PERITONITIS, MECKEL'S DIVERTICULUM, SURGERY, INTESTINAL OBSTRUCTION, NEWBORN INFANT (5050)
- PERITONITIS, THERAPY (5389)
- TRANSPORT MECHANISMS, SOLUTES, FLUID TRANSPORT, SOLVENT DRAG, FILTRATION CLEARANCE (4765)*
- TUMOR, PAREITOGRAPHY, PNEUMOPERITONEUM (5378)

POISON
- 3-METHYLCHOLANTHRENE, AGE FACTOR, RAT (5277)*
- CARBON MONOXIDE, BILIRUBIN, HEME CATABOLISM, RAT (4825)*
- CARBON TETRACHLORIDE, CIRRHOSIS,
- FOOD, DIARRHEA, STAPHYLOCOCCI, EPIDEMIC, HEMOLYSINS, BACTERIOPHAGE (5353)
- FOOD, SMALL INTESTINE, CLOSTRIDIUM, DIARRHEA (4884)

  - FUSEL OIL, TUMORS, LIVER PARENCHYMA, ALCOHOL, RAT (5226)
  - HYPOGLYCIN, TOXICITY, METABOLISM (5249)
  - MUSHROOM, PHALLOIDIEN HEPATITIS, DIARRHEA (5332)
  - NICOTINE, COTININE, METABOLISM, LIVER, MOUSE (4828)•
  - NICOTINE, DUODENUM, STOMACH, CONTRACTION (4801)
  - NICOTINE, HEPATOCYTE, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE (4782)
  - NICOTINE, SITE OF ACTION, STOMACH, DUODENUM, CONTRACTILITY, DOG (4793)•
  - NICOTINE, STOMACH, MUCOSA, SECRETION (4809)
  - NICOTINE, STOMACH, SECRETION, FISTULA (4998)
- PREGNANCY
  - ABSORPTION, SMALL INTESTINE, LACTATION (4753)
  - APPENDICITIS, OVARIAN SURGERY, PROGESTERONE, LABOR, ILEUS, ABORTION (5092)
  - HEMORRHOID, RECTUM, EPIDEMIOLOGY (5102)
  - JAUNDICE, ECLAMPSIA, CANCER, VIRAL HEPATITIS, HEMOLYTIC ANEMIA, FATTY LIVER, TETRACYCLINE THERAPY (5192)
  - JAUNDICE, HEPATITIS (5209)
  - LIPID, LIVER (5245)
  - LIVER ATROPHY, LIVER BIOPSY, PLASMAPHERESIS, CYTOPLASMIC NECROSIS (5293)
  - TOXEMIA, LIVER, RUPTURE (5247)
- PROTEIN
  - ABSORPTION, DIGESTION, MAN (4768), (4769)
  - ALBUMIN, PANCREATITIS, AMYLASE (5156)
  - AMYLOID, LIVER, HEPATOCYTE, DUCK (5184)
  - ANTIGEN, CHOLERA, IMMUNOLOGY (5107)
  - BINDING, BILIRUBIN, SERUM ALBUMIN (4859)
  - BIOSYNTHESIS, NUCLEUS, LIVER, METALS, RAT (4830)•
  - DEFICIENCY, LIVER INJURY, DIET (5250)
  - ENZYME, INTESTINE, ABSORPTION (4767)
  - FRACTION, LIVER, CIRRHOSIS, HEPATITIS, TRANSAMINASE, ALBUMIN, GAMMA-GLOBULIN, COAGULATION (4932)
  - GAMMA GLOBULIN, MALABSORPTION, TETANY, SMALL INTESTINE (5077)
  - GLYCO-, INTESTINAL MUCOSA, GALACTOSYLTRANSFERASE, INCORPORATION, CYTOPLASMIC FRACTIONS, RAT (4742)•
  - HEME, CATABOLISM, BILIRUBIN, CARBON MONOXIDE, RAT (4825)•
  - HEPATIC HEMOPROTEINS, CYTOCHROME P-450, OXYGEN ACTIVATION, ABSORPTION SPECTRUM (4822)•
  - IMMUNOGLOBULIN, CHRONIC HEPATITIS, CIRRHOSIS, MITOCHONDRIA (5276)
  - IMMUNOGLOBIN, HEPATITIS, TRANSAMINASE (5271)
  - LIPO-, CHOLOSTASIS, PHOSPHOLIPIDS, ANTISERUM, ANTIGENS, ALBUMIN (5310)
  - LIVER, DNA, RAT (4718)
  - LIVER, VALINE, INSULIN INHIBITION, PROTEOLYSIS, RAT (4837)•
  - MALNUTRITION, BIAFRAN CHILDREN, ANEMIA, CARDIOPATHY, CONVULSION (5340)
  - MALNUTRITION, MALABSORPTION, SMALL INTESTINE (5377)
  - MALNUTRITION, PANCREAS (5360)
  - MALNUTRITION, WEIGHT, MORTALITY, SENEGALESE CHILDREN (5349)
  - METABOLISM, CIRRHOSIS, DIET (5299)
  - POLYGLOBULISM, HEPATOMA, ERYTHROCYTOSIS, ELECTROPHORESIS, LIVER BIOPSY (5189)
  - RIBONUCLEASE, PANCREAS, BOVINE (4750)
  - SERUM, ELECTROPHORESIS, CHRONIC HEPATITIS, CIRRHOSIS, FATTY LIVER, GLOBULIN, ALBUMIN (5212)
  - SYNTHESIS, HEPATITIS, DNA VIRUS, RNA VIRUS, ANTINUCLEAR ANTIBODIES, CELL CULTURES (5257)
  - SYNTHESIS, PARTIAL HEPATECTOMY, DNA REPLICATION, KINASES, RIBONUCLEASE REDUCTASE, ANTIBIOTIC INHIBITION (4831)•
  - SYNTHESIS, SERUM, LIVER, METHYLCOBALAMIN, RAT (4819)•
  - TURNOVER, ENZYMES, TEMPLATE STABILITY, INTESTINE, EPITHELIAL CELLS (4692)•
- PROTHIONAMID
  - RIFAMPICINE, HEPATOBILIARY EFFECTS, RAT (5229)
- PYLORUS
  - OBSTRUCTION, ESOPHAGUS, RUPTURE (4970)
  - OBSTRUCTION, GASTRIC TUMOR, MYOID, POLYP, GASTROSCOPY (5017)
  - SPASM, CARDIAC ACHALASIA, MEGAESOPHAGUS, CACHEXIA, PYROPLASTY, CARDIOMYOTOMY (4963)
  - STENOSIS, SERVIX SIGN, GASTROSCOPY (5002)
  - STENOSIS, ETHNICITY (4989)
  - TRANSPYLORIC PROLAPSE, MUCOSA, STOMACH, RADIOLOGY (4986)
- RADIATION
  - AMINO ACID, INCORPORATION, REGENERATION, LIVER, PROTEIN (4826)•
  - BETA, PACINIAN CORPUSCLE, MESENTERY (4882)
  - COBALT, DNA-SYNTHESIS, PLACENTA, FETAL LIVER, RNA, PROTEIN (5166)
  - GAMMA RAYS, GASTROINTESTINAL TRACT, LD50 (4878)
  - INTESTINE, MUCOSA, HISTOCHEMISTRY, RAT (4698)•
  - IRRADIATION, PRECURSORS, GLYCOGEN SYNTHESIS, GLUCOSE, GLUTAMIC ACID, GLYCERYL-TRIPALMITATE, MICE (4861)
  - RADIOTHERAPY, TELECOBALT, 5-FLUOROURACIL, CARCINOMA, PANCREAS (5136)•
  - RADIOTHERAPY, TUMOR, ABDOMEN (5378)
  - RADIOTHERAPY, TUMOR, ABDOMINAL, GAS INSUFFLATION (4897)•
  - THERAPY, CANCER, COLON, RECTUM (5112)
  - THERAPY, HEPATITIS, PELIOSIS (5243)
  - TOXICITY, ADRENALECTOMY EFFECT, LIVER, POLYRIBOSOMES, RAT (4823)•

  WHOLE BODY, SMALL INTESTINE, MOTILITY (4791)•

RECTUM
  ANATOMY, SURGERY, ANUS (4729)
  CANCER, RADIATION THERAPY, COLON (5112)
  COLON, CANCER, ARTERIAL INFUSION, SURGERY, CHEMOTHERAPY, LIVER (5198)
  CONGENITAL MALFORMATION, ANUS, SPHINCTER (5093)
  DEFECATION, COLON, ANUS (4802)
  DUPLICATION, SURGERY (5108)
  HEMORRHAGE, RADIOGRAPHY (4900)
  HEMORRHAGE, ULCER, TUMOR (4901)
  HEMORRHOID, EPIDEMIOLOGY, PREGNANCY (5102)
  HEMORRHOIDS, TREATMENT, DILATATION (5091)
  MUCOSA, ELECTRICAL POTENTIAL (4800)
  MUCOSA, LYMPHOSARCOMA (5392)
  MUCOSA, MELANOSIS COLI, PIGMENTATION, CARCINOMA, RECTOSCOPY, ENDOSCOPY (5096)
  NEOSTIGMINE, ATROPINE, ILEUM, COLON (4804)
  OBSTRUCTION, UROGENITAL SYSTEM (4902)
  OCCLUSION, PROSTATIC CANCER, EPITHELIOMA, DYSURIA, ESTROGEN THERAPY (5111)
  PROLAPSE, HEMORRHOIDS, CORPUS CAVERNOSUM, INCONTINENCE, SURGERY (5115)
  RECTOCOLITIS, HEMORRHAGE, AZOTHIOPRINE (5106)
  STONE, MILK OF MAGNESIA (5098)
  SURGERY, CYSTOMETRIC EXAMINATION, BLADDER PRESSURE, HYPOTONUS, RETENTION (5095)
  SURGERY, TRIGONE, ANASTOMOSIS (4867)
  TUMOR, EVALUATION, RADIOACTIVE PHOSPHORUS (4912)

REGENERATION
  ACUTE HEPATITIS, ELECTRON MICROSCOPY (5252)•
  HEPATIC, BILE ACIDS, HEPATIC DISEASE, JAUNDICE, HEMOLYTIC TOXINS (5256)
  HEPATIC, PARTIAL HEPATECTOMY, SPLEEN, HEMATOPOIESIS, PORTAL HYPERTENSION, RAT (4852)
  HEPATIC, PROTEASE, PAPAIN, PARTIAL HEPATECTOMY, MITOTIC INDEX, RAT (4851)
  HEPATIC, VIRAL HEPATITIS, CIRRHOSIS, CORTISONE, VITAMIN B12 (5279)
  LIVER, HEPATITIS, JAUNDICE, STEATOSIS, PARENCHYMAL VOLUME (5259)
  LIVER, MITOSIS (4855)
  LIVER, RNA, NUCLEAR TEMPLATE CAPACITY, RAT (4821)•

RESECTION
  ABDOMEN, FIBRODYSPLASIA, POLYPOSIS COLI (5100)
  BILLROTH, FIBROMYOMA, BENIGN TUMORS, ULCERS, STOMACH (4980)
  BILLROTH, PERITONITIS, DUODENAL FISTULA, ANTIBIOTICS (4983)
  CHOLECYSTECTOMY, GALLBLADDER, JAUNDICE, THROMBOSIS, SURGERY (5328)
  CHOLECYSTECTOMY, VAGOTOMY, LIVER, CHOLELITHIASIS (5304)
  COLON, CANCER (5107)
  COLON, DIVERTICULITIS (5114)
  COLON, ILEO-TRANSVERSE, TECHNIQUE (5364)
  COLON, ULCER, COLITIS (5133)
  COLON, ULCERATIVE COLITIS (5124)
  DUODENUM, ULCER (4899)
  ESOPHAGUS, CICATRICIAL STENOSIS, DELAYED MALIGNANCY (4947)
  GALLBLADDER, CARCINOMA (5309)
  GALLBLADDER, CHOLECYSTITIS, CHOLECYSTECTOMY (5305)
  GALLBLADDER CARCINOMA, GALL STONES, CHOLECYSTECTOMY (5311)
  GASTRECTOMY, ANTI-SEROTONIN, METHYSERGIDE, GASTROENTEROSTOMY, ULCER (5079)
  GASTRECTOMY, CHOLELITHIASIS, POST-VAGOTOMY, ULCER, DIARRHEA (5321)
  GASTRECTOMY, DIABETES MELLITUS, PREDISPOSITION, HYPERINSULINISM, ANASTOMOSIS, JEJUNUM, HYPERGLYCEMIA (4982)
  GASTRECTOMY, HEPATIC LESIONS, HYPERAMMONEMIA, AMMONIUM ACETATE, ENCEPHALOPATHY (4950)
  GASTRECTOMY, OESOGASTRIC, ANASTOMOSIS, METALLIC CLIP, P.K.S. 25, TERMINO-LATERAL TECHNIQUE (5350)
  GASTRECTOMY, PARTIAL GASTRECTOMY, HISTOLOGICAL CHANGES, INTESTINAL MALABSORPTION, D-XYLOSE, FAT (5073)•
  GASTRECTOMY, PYLOROPLASTY, DUODENAL ULCER, PANCREAS (4993)
  GASTRECTOMY, ULCER, ANTRECTOMY, PYLOROPLASTY (5022)
  GASTRIC, ILEUM, VITAMIN B12, GLUCOSE ABSORPTION, PERISTALSIS, MALIGNANT TUMOR (5083)
  GASTRIC, MYOID TUMOR, METASTASES, RADIOGRAPHY (5014)
  GASTRIC, NECROTIZING PANCREATITIS, DUODENAL ULCER, CARCINOMA (5155)
  GASTRIC, VAGOTOMY, PYLORIC STENOSIS, HYPERSECRETION (4951)
  HEPATECTOMY, FOLIC ACID, LIVER REGENERATION, RATS (4835)•
  ILEOSTOMY, CROHN'S DISEASE, SMALL INTESTINE (5068)
  ILEOSTOMY, ILEITIS (5044)
  INTESTINE, MECHANICAL OBSTRUCTION (5056)
  LIVER, HYDATIDOSIS, BILIARY TRACT (5400)
  LIVER, REGENERATION, SPLEEN, HEMATOPOIESIS, PORTAL HYPERTENSION (4852)
  MESENTERIC ARTERY, EMBOLECTOMY, OCCLUSION (5332)
  MESENTERIC INFARCT, EMBOLISM, ARTERIOTOMY, INTESTINAL RESECTION (5336)
  NEPHRECTOMY, HEPATIC, RENAL CANCER, LIVER BIOPSY, MUCOPROTEINS (5185)
  PANCREATECTOMY, PANCREATIC INSUFFICIENCY, DOG (5137)•

  - SECRETION, ELEDOISIN, BRADYKININ, CALCIUM IONS, ANGIOTENSIN, MUCOSA (4805)
  - SECRETION, HISTAMINE, GASTRIN, DUODENAL ULCER, PEPSIN (4935)
  - SECRETION, PELLETED DIET, MAGNESIUM, NUTRITION (4879)
  - SECRETION, STIMULATION, PENTAGASTRIN (5019)•
  - SECRETION, ZOLLINGER-ELLISON SYNDROME, ABSORPTION (5380)
  - SPLENIC, TUMOR, PERFORATION, METASTASES, CACHEXIA, CYTOSTATIC TREATMENT, RADIOLOGY (5011)
  - SCAN, TECHNETIUM 99M, DIFFERENTIAL DIAGNOSIS, GASTRIC MUCOSA, SECRETION (4888)
  - TUMOR, CYTOLOGY, DIAGNOSIS (4930)
  - TUMOR, GASTROSCOPY, HIATUS HERNIA, POLYP, ESOPHAGUS, DIVERTICULI (4957)
  - TUMORS, POLYP, SURGERY (4985)
  - ULCER, DOGMATIL, SULPIRIDE (5035)
  - ULCER, DUODENUM, SURGERY (5027)
  - ULCER, FISTULA, SURGERY (5031)
  - ULCER, GASTROSCOPY, ANESTHESIA, DIAGNOSIS (4953)
  - ULCER, HEMORRHAGE, STENOSIS, PERFORATION (5034)
  - ULCER, MOTILITY, SURGERY (5032)
  - ULCER, PEPTIC ULCER, DUMPING SYNDROME, VAGOTOMY (5024)
  - ULCER, PERFORATION, MYOCARDIUM, CARDIA (5039)
  - ULCER, SMOKING, DUODENUM (5029)
- STRESS
  - SALMONELLA, EXCRETION, PIG (5357)
- SURGERY
  - ABDOMINAL, HEMORRHAGE, PERITONITIS, ADHESIONS (5337)
  - ABDOMINAL TRAUMA, LAPAROSCOPY, PERITONEAL HEMORRHAGE, HEMATOMA (4909)
  - ACUTE CHOLECYSTITIS, PANCREATIC ENZYMES, LIVER BIOPSY, JAUNDICE (5324)
  - ABDOMEN, AORTOGRAPHY (5359)
  - ACHALASIA, ESOPHAGUS, CARDIA (4972)
  - ACUTE APPENDICITIS, GAS GANGRENE, PERFORATION, DRAINAGE (5097)
  - ANESTHESIA, LIVER (5244)
  - ANUS, RECTUM, ANATOMY (4729)
  - APPENDICITIS, DIVERTICULITIS, COLON (5103)
  - APPENDIX, ENDOMETRIOSIS (5104)
  - BILIARY TRACT, BIOLOGICAL GLUE (5312)
  - BILIARY TRACT, GALLBLADDER, LIVER (5308)
  - CARDIAC ACHALASIA, STOMACH DILATATION, MEGA-ESOPHAGUS, HYPERTONIC PYLORUS, PYLOROPLASTY, CARDIOMYOTOMY, CHILDREN (4963)
  - COLON, ABSCESS, HEALING (5101)
  - COLON, ANTIBIOTIC, CARCINOMA (5118)
  - COLON, PENICILLIN, BACTERIA (4881)
  - ERROR, DUODENAL ULCER, PROGNOSIS, VAGOTOMY-RESECTION, HISTAMINE STIMULATION (5036)
  - ESOPHAGUS, FISTULA, ATRESIA (4971)
  - ESOPHAGUS, STENOSIS, CARCINOMA, PERFORATION (4965)
  - HEMORRHAGE, CANCER, ULCER (5372)
  - HODGKIN'S DISEASE, ABDOMEN, DIAGNOSIS (4911)
  - HYDATID CYST, LIVER, BILIARY TRACT, CHOLANGIOGRAPHY, ODDI'S SPHINCTER, PARASITES (5401)
  - ILEUM, MUCOSA, COLON, DUODENUM (5045)
  - INTESTINAL OCCLUSION, ABSCESS, STASIS, ADHESIONS (5334)
  - INTESTINE, ENTEROPTOSIS, OCCLUCION (5061)
  - INTESTINE, ISCHEMIA, MALABSORPTION (5086)
  - JEJUNUM (5046)
  - LIVER, ABSCESS (5208)
  - LIVER, JAUNDICE, CHOLESTASIS, HEPATITIS (5179)
  - LIVER, RADIOLOGY, PORTAL HYPERTENSION (5298)
  - MECKEL'S DIVERTICULUM, HEMORRHAGE, GASTRIC MUCOSA, SHOCK (5064)
  - MECKEL'S DIVERTICULUM, PERFORATION, INTESTINAL OBSTRUCTION, PERITONITIS, NEWBORN INFANT (5050)
  - MECKEL'S DIVERTICULUM, RADIOLGOY (5051)
  - OBSTRUCTIVE JAUNDICE, PANCREAS, METASTASES, LAPAROTOMY, CHOLANGIOGRAPHY (4941)
  - PANCREAS, JUICE COLLECTION (4772)
  - PANCREAS, PALPATION (4903)
  - PEPTIC JEJUNAL, ULCER, PERFORATION, ANASTOMOSIS, INFECTION, GASTRIC RESECTION (5062)
  - PORTOCAVAL SHUNT, CIRRHOSIS (5297)
  - RECTUM, CYSTOMETRIC EXAMINATION, BLADDER PRESSUREA HYPOTONUS, RETENTION (5095)
  - RECTUM, DUPLICATION (5108)
  - RELAPAROTOMY, POSTOPERATIVE INTESTINAL OBSTRUCTION, ILEUS, GASTRIC JUICE (5060)
  - REPARATIVE, PEPTIC ULCER, GASTRIC ULCER, DUMPING SYNDROME, AFFERENT LOOP, VAGOTOMY (5024)
  - SPHINCTEROTOMY, BIOPSY, VATER'S PAPILLA, TECHNIQUE (4944)
  - STOMACH, CARCINOMA (4988)
  - STOMACH, FISTULA, ULCER (5031)
  - ULCERATIVE COLITIS, ILEUS, CONTINENCE, COLECTOMY, ANASTOMOSIS (5128)
  - ULCERATIVE SOLITIS, RECTOLITIS, PSYCHIATRY, THERAPY, DIAGNOSIS (5125)
  - VAGOTOMY, LIVER, GALLBLADDER (5178)
  - VAGOTOMY, POST-VAGOTOMY SYNDROME, DIARRHEA, GASTRIC ACID (5375)
  - WILSON'S DISEASE, GASTRODUODENAL, HEMORRHAGE, PORTAL HYPERTENSION, LEUCOPENIA, THROMBOPENIA (5200)
- SYNDROME
  - BLIND LOOP, OSTEOMALACIA, PANCREATITIS, MALABSORPTION (5159)
  - BRILL-SYMMERS, SPLENIC TUMOR, PERFORATION, STOMACH, METASTASES, CACHEXIA (5011)

  - CRIGLER-NAJJAR, HYPERBILIRUBINEMIA, ICTERUS (5182)
  - CRIGLER-NAJJAR, HYPERBILIRUBINEMIA, LUMINAL TREATMENT, NEONATE (5220)
  - DUBIN-JOHNSON'S, ROTOR'S, JAUNDICE, LIVER (5219)
  - DUMPING, ANTISEROTONIN, METHYSERGIDE, GASTRECTOMY, GASTROENTEROSTOMY, ULCER (5079)
  - DUMPING, DUODENUM, ILEUM, ION (5080)
  - DUMPING, GASTRODUODENAL ULCER, HEMORRHAGE, SULPIRIDE (5038)
  - DUMPING, GASTRIC ULCER, PEPTIC ULCER, REPARATIVE SURGERY, PYLORIC ANTRUM, VAGOTOMY (5024)
  - GILBERT'S, HYPERBILIRUBINEMIA, LIVER (5205)
  - SJOGREN'S, LIVER, PATHOLOGY, RHEUMATOID ARTHRITIS (5206)
  - ZIEVE'S, HYPERLIPEMIA, JAUNDICE, HEMOLYTIC ANEMIA, STEATOSIS, CIRRHOSIS, ALCOHOL, LIVER DAMAGE (5284)
  - ZOLLINGER-ELLISON, DIAGNOSIS, BIOASSAY, GASTRIN (4921)
  - ZOLLINGER-ELLISON, INTESTINE, ABSORPTION, GASTRIC SECRETION (5380)
  - ZOLLINGER-ELLISON, ISLET CELL TUMOR, PANCREAS, GASTRIN DIARRHEA (5381)
  - ZOLLINGER-ELLISON, SMALL INTESTINE, ULCERATIVE COLITIS, GASTRIC SECRETION (4939)
- THERAPY
  - GASTRODUODENAL ULCER, GASTRECTOMY, ANTRECTOMY, PYLOROPLASTY (5022)
  - ISONIAZID, RIFAMPICINE, ANTITUBERCULAR ACTIVITY, HEPATIC LESIONS, LUNG TUMOR (5230)
  - LUMINAL, RHESUS INCOMPATIBILITY, JAUNDICE, NEWBORN INFANTS, ENTOPLASTIC RETICULUM (5201)
  - PERITONITIS (5389)
  - POLYARTHRITIS, HEPATOSIS, CHOLESTASIS, GOLD TREATMENT, DURO--DETOXIN (5194)
  - RECTOPANBILINE GEL, CHRONIC CONSTIPATION, ENEMA, DYSCHEZIA (5094)
  - REST, LIVER DISEASE, TRANSAMINASE, EXERCISE, CHRONIC HEPATITIS, LIVER CELL PERMEABILITY (4937)
- TOXICITY
  - HYPOGLYCIN, METABOLISM (5249)
  - LIVER (5248)
  - LIVER, ALKALOID, RAT (5239)
  - LIVER, CHLORETHANOL, GROWTH, RAT (5231)
- TOXIN
  - TETANY, MALABSORPTION, GAMMA GLOBULIN, SMALL INTESTINE (5077)
- TRANSPLANT
  - GASTROINTESTINAL TUBE, ESOPHAGUS, RECONSTRUCTION, HUMORAL FACTORS (4798)
  - HETEROGRAFT, LIVER, BABOON, MAN, CROSS CIRCULATION, IMMUNODEPRESSIVES, CORTICOIDS (5213)
  - LIVER, GEPATECTOMY, DNA (5171)*
  - LIVER, KIDNEY, BLOOD GROUPS, TISSUE GROUPS, ISCHEMIA, VASCULAR ANOMALIES (5186)
- TRANSPORT
  - ELECTRICAL POTENTIAL, MUCOSA, RECTUM, COLON (4800)
  - ELECTRICAL POTENTIAL, SMALL INTESTINE, ION, MUCOSA (4803)
  - HEPATIC, ANIONS, METABOLITES, STEROIDS (4762)*
  - HEPATOBILIARY TRANSPORT, BSP, BILIARY EXCRETION, GLUTATHIONE CONJUGATES (4754)*
  - PERITONEUM, LOCAL OSMOSIS, NET WATER FLUX, TRANSPERITONEAL EXCHANGE, SOLVENT DRAG (4758)*
  - PERITONEUM, OSMOSIS, UREA, INULIN, RISA, FILTRATION (4765)*
  - TRANSMEMBRANE POTENTIAL, HEPATOCYTE, CATECHOLAMINE, NICOTINE (4782)
  - WATER, CECUM, WALL, RAT (4759)*
- TRAUMA
  - ABDOMEN, LIVER, SMALL BOWEL, STOMACH, PANCREAS (5390)
  - ABDOMEN, RADIOLOGY, CHILDREN (4920)
  - ACUTE PANCREATIC, FISTULA, RUPTURE, AORTOGRAPHY, PSEUDOCYSTS, PANCREATODUODENECTOMY (5142)
  - LIVER, SHOCK, JAUNDICE (5238)
- TUMOR
  - ABDOMEN, PAREITOGRAPHY, PNEUMOPERITONEUM (5378)
  - ABDOMINAL, DIAGNOSIS, GAS INSUFFLATION, PNEUMOPERITONEUM, PARIETOGRAPHY, TOMOGRAPHY (4897)*
  - ADENOMA, COLON, CARCINOMA, POLYP (4915)
  - ANGIOMA, ALLERGY, JUVENILE CIRRHOSIS, HEPATIC, CUTANEOUS LESIONS (5285)
  - ANGIOPLASTIC SARCOMA, LIVER, HEMORRHAGE, DELAYED DAMAGE, THOROTRAST (5214)
  - BENIGN, MYOID, POLYP, VILLOUS, STOMACH, SURGERY (4985)
  - BENIGN LIOMYOMA, STOMACH, INTESTINE (5015)
  - COLON, PLASMACYTOMA (5099)
  - DUODENUM, PARAGANGLIOMA (5001)
  - EPITHELIOMA, MEDIASTINAL, ESOPHAGUS, RADIOLOGY (4962)
  - GALLBLADDER, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
  - GASTRIC, BENIGN, MYOID, HEMORRHAGE, GASTROSCOPY, POLYP, PYLORIC OBSTRUCTION (5017)
  - HEMOBILIA, SURGERY (5303)
  - HEPATOMA, ALDOLASES, LIVER, HYBRID MOLECULES, YOSHIDA SCITES, RAT (5175)*
  - HEPATOMA, GLUCOCORTICOID BINDING, TYROSINE AMINOTRANSFERASE, INDUCTION, CORISOL, DEXAMETHASONE (5170)*
  - HEPATOMA, POLYGLOBULISM, ERYTHROCYTOSIS, ELECTROPHORESIS, LIVER BIOPSY (5189)
  - ISLET-CELL, PANCREAS, ZOLLINGER-ELLISON SYNDROME (5381)
  - LEIOMYOSARCOMA, STOMACH, RADIOLOGY, DIAGNOSIS (4995)
  - LIVER, PANCREAS, SCLEROSIS (5181)
  - LYMPHOMA, ABDOMINAL PAIN, ALPHA GLOBULIN, IGA, LUMPH NODES, JEJUNAL

  - MUCOSA, HYPOKALEMIA (5346)
  - LYMPHOSARCOMA, MUCOSA, STOMACH, COLON, RECTUM (5392)
  - LYMPHOMA, MALIGNANT, CYTODIAGNOSIS, STOMACH (4890)*
  - MELANOMA, DUODENUM, RADIOLOGY, METASTASES, LOCALIZATION (5012)
  - MULTIPLE MYELOMA, LIVER, KAHLER'S DISEASE, HYPERLEUCOCYTOSIS, PROTEINURIA, NORMOCHROMIC ANEMIA, PROTEINEMIA (5275)
  - MYOID, STOMACH, GASTRIC HEMORRHAGE, GASTRIC RESECTION, RADIOGRAPHY, METASTASES (5014)
  - PANCREAS, CYSTS, RADIOLOGY, JAUNDICE, RESECTION (5140)
  - PANCREATIC, ADENOMA, CHOLANGIOGRAAHY, ARTERIOGRAPHY, CANCER, MICROSCOPIC EXAMINATION (5146)
  - POLYCYTHEMIA, CIRRHOSIS, HEPATOCELLULAR CARCINOMA (5193)
  - PSEUDO-, SIGMOID COLON, DOUBLE CONTRAST, RADIOGRAPHY, DIVERTICULITIS (4894)*
  - RECTUM, RADIOACTIVE PHOSPHORUS, EVALUATION (4912)
  - SPLENIC, PERFORATION, STOMACH, METASTASES, CACHEXIA (5011)
  - STOMACH, INTESTINE, GASTROPTOSIS, ENTEROPTOSIS, WEIGHT LOSS, EPIGASTRIC PAIN (5018)
  - STOMACH, ESOPHAGUS, MALIGNANT, BENIGN, GASTROSCOPY, HISTUS HERNIA, POLYP (4957)
  - STOMACH, MALIGNANT, CYTOLOGY, DIAGNOSIS (4930)
  - STOMACH, NEURINOMA (4987)
  - RETROPERITONEAL, ABDOMEN, INFANT (4914)
  - XANTHOFIBROGRANULOMA, LIVER, MULTIFOCAL FIBROMATOSIS, BILE DUCT (5326)

- ULCER
  - CHOLELITHIASIS, POST-VAGOTOMY, GASTRECTOMY, DIARRHEA (5321)
  - COLITIS, SURGERY (5124)
  - COLON, COLITIS, SURGERY (5133)
  - DUODENAL, BISMUTHBILE, RECTOCOLITIS, SORBITOL (5352)
  - DUODENAL, GASTRECTOMY, PYLOROPLASTY, PANCREAS (4993)
  - DUODENAL, GASTRIC, GALLSTONES, X-RAY, SEX DIFFERENCE (5041)*
  - DUODENUM, GASTRIC RESECTION, PANCREATITIS (5155)
  - DUODENAL, GASTRIC, RESECTION, VAGOTOMY, PERFORATION, PYLORIC STENOSIS, HYPERSECRETION (4951)
  - DUODENAL, SURGERY, SECRETION TEST, PROGNOSIS, ERROR, VAGOTOMY- RESECTION, ACIDITY, HISTAMINE STIMULATION (5036)
  - DUODENUM, GASTRIC SECRETION, ACID (5033)
  - DUODENUM, HISTAMINE, GASTRIN, GASTRIC SECRETION, PEPSIN (4935)
  - DUODENUM, PERFORATION, PYLOROPLASTY (5028)
  - DUODENUM, SECRETION, STOMACH, EMPTYING, ACID, HETERONIUM BROMIDE (4792)*
  - DUODENUM, SURGERY (4899)
  - DUODENUM, VAGOTOMY, PARIETAL CELL MASS (5030)
  - GASTRIC, BILLROTH-II-RESECTION, FIBROMYOMA, ULCER, BENIGN TUMOR (4980)
  - GASTRIC, DUODENAL, HEMORRHAGE, PHENOTHIAZINES, SURGERY (5040)
  - GASTRIC, PERFORATION, CARDIA, LEFT VENTRICLE (5039)
  - GASTRIC, REPARATIVE SURGERY, PEPTIC ULCER, DUMPING SYNDROME, AFFERENT LOOP, VAGOTOMY, PYLORIC ANTRUM (5024)
  - GASTRODUODENAL, BURNS, PYLOROPLASTY, HEMORRHAGE (5347)
  - GASTRODUODENAL, DOGMATIL, SULPIRIDE, RADIOLOGY, HYPOTHALAMIC CENTER (5035)
  - GASTRODUODENAL, ESOPHAGUS, ENDOSCOPY, HYPERACIDITY (4958)
  - GASTRODUODENAL, HEMORRHAGE, PANCREATITIS, BLOOD TRANSFUSION (4994)
  - GASTRODUODENAL, HEMORRHAGE, PERFORATION, STENOSIS, MALIGNANCY, PROTEINASE, INHIBITION (5034)
  - GASTRODUODENAL, SULPIRIDE, HEMORRHAGE, DUMPING SYNDROME, RADIOLOGY, ARTERIAL TENSION (5038)
  - GASTRODUODENAL, TREATMENT, GASTRECTOMY, ANTRECTOMY, PYLOROPLASTY (5022)
  - GASTROINTESTINAL HEMORRHAGE, ESOPHAGEAL VARICES, ENDOSCOPY (5368)
  - HEMORRHAGE, CANCER, SURGERY (5372)
  - ILEOCOLITIS, IMMUNOSUPPRESSIVES, LYMPHOID HYPERTROPHY, CORTICOIDS (5135)
  - INTESTINE, STENOSIS, POTASSIUM CHLORIDE, MUCOSA (5048)
  - JEJUNAL, DUODENAL, RESECTION, VAGOTOMY, PERITONITIS, DYSTONIA, PAIN (5025)
  - PEPTIC, SMOKING, STOMACH, DUODENUM (5029)
  - PEPTIC, STOMACH, DUODENUM, SURGERY (5027)
  - PEPTIC, SURGERY, RECURRENCE, DUODENUM (5037)
  - PEPTIC JEJUNAL, PERFORATION, GASTRIC RESECTION, ANASTOMOSIS, INFECTION (5062)
  - STOMACH, DUODENUM, MOTILITY, SURGERY (5032)
  - STOMACH, ESOPHAGUS, ENDOSCOPY (4953)
  - STOMACH, EXPERIMENTAL, NOREPINEPHRINE, EPINEPHRINE, VAGOTOMY, ANTACID (5020)*
  - STOMACH, FISTULA, SURGERY (5031)
  - STOMACH, HEMORRHAGE, GASTROSCOPY (4954)
  - PEPTIC, STOMACH, HYPOTHERMIA, HEMOSTATIC DRUGS, HEMORRHAGE (5007)
  - STOMACH, SECRETION, ACID (4910)

  - TUBERCULOUS, STOMACH, ENDOSCOPY, LESSER CURVATURE, GREATER CURVATURE RADIOLOGY (5023)
- ULTRASTRUCTURE
  - BACTERIA, ALIMENTARY TRACT, INSECT (4876)
  - BILE DUCT, EPITHELIUM(4762)
  - CHANGE, GOLGI APPARATUS, LIVER, TOCOPHEROL DEFICIENCY (5169)•
  - ENDOPLASMIC RETICULUM, POLYSOME, MICROSOME, LIVER, PHOSPHOLIPID, METABOLISM (4841)•
  - LIVER, MICROBODY, PEROXIDASE ACTIVITY, 3-AMINO-1,2,4-TRIAZOLE (4747)•
  - LIVER, MITOCHONDRIA, PERMEABILITY, FRAGILITY, ETHANOL, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)•
  - LIVER, MITOCHONDRIA, MONKEY (4705)•
  - LIVER DISEASE, ACUTE VENOUS OCCLUSION, LIVER BIOPSY, ELECTRON MICROSCOPY, PATHOLOGY (5168)•
  - MICROSOME, LIVER, CYTOCHROME, INDUCTION, MECHANISM (4832)•
  - MICROSOME, LIVER, ENZYME RAT (4716)
  - MICROSOME, LIVER, ENZYME WAX (4720)
  - MICROSOME, LIVER, OXIDASE (4858)
  - MITOCHONDRIA, LIVER, BILIRUBIN, METABOLISM (5241)
  - MITOCHONDRIA, CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOGLOBIN (5276)
  - MITOCHONDRIA, ENZYME, LIVER, CHICKEN (4719)
  - MITOCHONDRIA, LIVER, ENDOPLASMIC RETICULUM, NUCLEIC ACID, GUINEA PIG (4739)
  - MITOCHONDRIA, LIVER, ENZYME (4725)
  - MITOCHONDRIA, LIVER, ENZYME, DEVELOPMENT (4727)
  - MITOCHONDRIA, LIVER, ENZYME, RAT (4843)•
  - MITOCHONDRIA, LIVER, TOCOPHEROL DEFICIENCY, RAT (5176)•
  - MITOCHONDIRA, MICROSOME, LYSOSOME, ENZYMES, STOMACH (4977)
  - NUCLEUS, HEPATOCYTE, MEMBRANE (4731)
  - PANCREAS, ACINAR CELL, ISLET CELL (4726)
  - RIBOSOME, LIVER, RNA SYNTHESIS, POLYNUCLEOTIDES, ENDOPLASMIC RETICULUM (4699)•
  - RIBOSOME, LIVER POLYNUCLEOTIDES, RNA SYNTHESIS, PURINE NUCLEOTIDES, ADENINE (4693)•
  - SMALL INTESTINE, ILEUM, MUCOSA, ABSORPTION, WATER, ELECTROLYTE, ATPASE (4713)•
  - SMALL INTESTINE, MUCOSA, EPITHELIUM, DUODENUM, GOLGI APPARATUS, TRACER STUDY (4704)•
- VIBRIO
  - MARINE, GASTROENTERITIS (5393)
- VIRUS
  - HEPATITIS, DIABETES, ICTERUS (5269)
  - HEPATITIS, RNA VIRUS, DNA VIRUS, ANTINUCLEAR ANTIBODY, PROTEIN SYNTHESIS (5257)
- VITAMIN
  - B12, ABSORPTION, INTESTINE, LIVER METABOLISM, SCAN (5075)•
  - B12, TRANSCOBALAMINS, INTRINSIC FACTOR (4811)
  - D, MALABSORPTION, CIRRHOSIS (5081)
  - D3, CALCIUM, ABSORPTION, INTESTINE, STRONTIUM (4775)
  - DERIVATIVE, METHYCOBALAMIN, SYNTHESIS, PROTEIN, LIVER, RAT (4819)•
  - E, DEFICIENCY, MITOCHONDRIA, LIVER, ULTRASTRUCTURE (5176)•
  - E, DEFICIENCY, ULTRASTRUCTURE CHANGE, GOLGI APPARATUS, LIVER (5169)•
  - FOLATE, ENZYME, T4 INFLUENCE, LIVER, RAT (4827)•
  - FOLIC ACID, CIRRHOSIS, MALABSORPTION, CHRONIC ALCOHOLISM, URINE, LIVER BIOPSY, PTEROYLGLUTAMIC ACID (5074)
  - FOLIC ACID, LIVER REGENERATION, PARTIAL HEPATECTOMY, RAT (4835)•
  - K, ABSORPTION, GASTROINTESTINAL TRACT, FECAL EXCRETION, URINE EXCRETION, SERUM LEVEL, TRACING TECHNIQUE (4757)•
  - K, CIRRHOSIS, BLOOD CLOTTING, FIBRINOGEN, THROMBOCYTE (5290)
  - LIVER, PATHOLOGY (5242)
- WATER
  - ABSORPTION, INTESTINE, BLOOD FLOW (4774)
- WILSON'S DISEASE
  - GASTRODUODENAL, HEMORRHAGE, SURGERY, JAUNDICE, CIRRHOSIS, PORTAL HYPERTENSION, HEPATIC INSUFFICIENCY, THROMBOPENIA, LEUCOPENIA (5200)

LIBRARY U. OF I. URBANA-CHAMPAIGN

LIBRARY U. OF I. URBANA-CHAMPAIGN

[illegible]
[illegible]

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

16.305
A

Vet Med.

[illegible]

GASTROENTEROLOGY
ABSTRACTS AND CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

THE LIBRARY OF THE
DEC 2 1970
UNIVERSITY OF ILLINOIS
URBANA-CHAMPAIGN
DD

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

AUGUST 1970
VOLUME 5, NO. 8
5409–6282

Volume 5, No. 8

Abstract and Citation Nos. 5409-6282

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed

by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager
Contract Number NIH-70-2040
with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metabolic Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversity of publications in the area of gastroenterology makes it imperative that an appropriate service be available t investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and comment for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and author indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment i required in advance, and check or money order should be made payable to the Superintendent of Documents.

CONTENTS

	Cross Reference Abbreviations	Abstracts, Citations	Page
PRE-CLINICAL SCIENCES			
Morphology, Cellular Structure and Histochemistry	(P:Morph)	5409-5474	547
Absorption—Excretion—Transport	(P:Absorp)	5475-5505	558
Motility	(P:Motil)	5506-5527	564
Secretion and Metabolism	(P:Secr)		
Stomach	(P:Secr:Stom)	5528-5551	568
Pancreas	(P:Secr:Panc)	5552-5556	571
Hepatobiliary Tract	(P:Secr:Hepatobil)	5557-5610	572
Intestine	(P:Secr:Int)	5611-5626	583
General	(P:Gen)	5627-5645	586
DIAGNOSTIC PROCEDURES	(Diagproc)	5646-5731	589
GASTROINTESTINAL DISEASES			
Esophagus	(D:Esoph)	5732-5762	597
Stomach and Duodenum	(D:Stomduo)	5763-5823	599
Peptic Ulcers	(D:Stomduo:Peptulc)	5824-5854	602
Small Intestine	(D:S.Intest)	5855-5876	606
Regional Enteritis	(D:S.Intest:Regent)	5877-5884	607
Malabsorption	(D:S.Intest:Malabs)	5885-5899	608
Large Intestine	(D:L.Intest)	5900-5945	610
Ulcerative Colitis	(D:L.Intest:Ulccol)	5946-5951	612
Pancreas	(D:Pancreas)	5952-5959	613
Pancreatitis	(D:Pancreas:Pancreat)	5960-5979	614
Liver and Biliary Tract	(D:Livbil)	5980-6053	615
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	6054-6083	622
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	6084-6104	625
Chronic Hepatitis	(D:Livbil:C.Hep)	6105-6111	627
Cirrhosis	(D:Livbil:Cirrh)	6112-6128	627
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	6129-6155	629
General	(D:Gen)	6156-6249	631
Parasitology	(D:Gen:Parasit)	6250-6282	636
UTHOR INDEX			
UBJECT INDEX			

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

or sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.
ubscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional;
nd $1.25 for a single copy. Payment is required in advance, and check or money order should be made
ayable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. For journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medical Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans
Ar.	Arabic
Bul.	Bulgarian
Ch.	Chinese
Cz.	Czech
Dan.	Danish
Dut.	Dutch
E.	English
Eston.	Estonian
Fin.	Finnish
Fl.	Flemish
Fr.	French
Ger.	German
Gr.	Greek
Heb.	Hebrew
Hun.	Hungarian
Ic.	Icelandic
In.	Indonesian
It.	Italian
Jap.	Japanese
Kor.	Korean
Latv.	Latvian
Lith.	Lithuanian
Nor.	Norwegian
Pol.	Polish
Por.	Portuguese
Rum.	Rumanian
Rus.	Russian
Ser.	Serbo-Croatian
Sl.	Slovak
Sp.	Spanish
Sw.	Swedish
Th.	Thai
Turk.	Turkish
Uk.	Ukrainian
Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
µg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD$_{50}$	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
µM	micromolar
mC,µC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transaminase
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

409 EFFECT OF SEDIMENTATION THROUGH SUCROSE
SOLUTIONS ON THE PROTEIN-SYNTHESIZING
ILITY OF RAT LIVER MICROSOMES. *(E.)* Leslie, R. A.
ept. Biochem., U. Queensland, St. Lucia, Australia)
d J. N. Mainbridge. *Biochem J* 117(5):893-898, 1970.

ver cell sap, ribosomes and microsomes (from albino
star rats) were prepared in order to examine the
fect of sedimentation through sucrose solutions on
e protein synthesizing ability of rat liver parti-
es. Centrifugation of the postmitochondrial super-
tant of rat liver through 1.0 M sucrose produced
rticles that had 85-90% less incorporating ability
a cell free protein-synthesizing system than either
bosomes or microsomes. The incorporation of $[^{14}C]$
enylalanine into protein by particles prepared by
dimentation through sucrose (1.0 M) was stimulated
out 20-fold by addition of polyuridine. The con-
nt of rapidly labeled RNA of microsomes was de-
eased during centrifugation through 1.0 M sucrose.
ese changes may be caused by breakdown of mRNA as
result of the activity of the ribonuclease which
s inhibited by a factor in the soluble fraction of
e cell.

10 STUDIES OF MAMMALIAN GLUCOAMYLASES WITH
SPECIAL REFERENCE TO MONKEY INTESTINAL
UCOAMYLASE. *(E.)* Seetharam, B. (Christian Med.
ll. Hosp., Vellore, India), N. Swaminathan and
N. Radhakrishnan. *Biochem J* 117(5):939-946, 1970.

e properties of highly purified preparations of
ucoamylase obtained from liver, spleen and intes-
ne of the monkey were compared. When a homogenate
epared in 1.15% potassium chloride from liver,
dney, spleen and intestine was centrifuged at high
eed (100,000 g, 1 hr), the majority (90%) of the
ucoamylase activity of liver, kidney and spleen
s found in the supernatant fraction, whereas over
% of the intestinal enzyme was in the sediment
action, and this could be solubilized by treatment
th papain. The liver and spleen enzyme showed
ximum activity at pH 4.8, whereas intestinal enzyme
hibited an optimum at pH 5.8 with either starch or
ltose as substrate. Liver and spleen glucoamylase
owed very narrow substrate specificity, acting only
starch and maltose. The Km values for both starch
d maltose with spleen (9.0, 10.0 mM, resp.) and
ver (8.3, 19.0 mM, resp.) enzyme were higher than
r the intestinal (1.6, 1.0 mM, resp.) enzyme. With
e intestinal enzyme (12.2, 13.0 unit/mg, resp.), the
ax values were higher for both starch and maltose
an those of the spleen (7.5, 6.0 unit/mg, resp.) and
ver (3.1, 5.3 unit/mg, resp.) enzyme. Gel filtration
Sephadex G-200 under identical conditions revealed
at liver and spleen glucoamylase emerges from the
lumns much later than the intestinal enyzme and heat
activation studies and DEAE-Sephadex chromatography,
th demonstrated 3 types of maltase (I, II and III)
esent in the intestinal mucosa. Of 3 peaks obtained
om separation on DEAE-Sephadex chromatography, glu-
amylase was clearly associated with maltase II.
is (0.1M), pentaerythritol (0.1M) and turanose
.03M) inhibited glucoamylase from liver, spleen and
testine but turanose inhibited the spleen and liver
zymes (% inhibition:67, 72, resp.) to a higher de-
ee than the intestinal (% inhibition:28) enzyme.
The intestinal enzyme may be involved to a limited extent in the hydrolysis of dietary starch and glycogen.

5411 GLYCOLIPIDS AND OTHER LIPID CONSTITUENTS OF NORMAL HUMAN LIVER. *(E.)* Kwiterovich, P. O., Jr. (Natl. Heart Lung Inst., Natl. Inst. Hlth., Bethesda, Md.), H. R. Sloan and D. S. Frederickson. *J Lipid Res* 11(4):322-330, 1970.

Glycolipids and other lipid constituents of normal human liver (obtained from 12 patients at autopsy, dead from causes unrelated to liver or lipid storage diseases) were separated and analyzed by thin layer chromatography and sequential lipid analysis. The mean contents of cholesterol, glycerides and total phospholipids was 3.9 ± 0.8, 19.4 ± 15.9 and 25.1 ± 2.7 mg/g wet weight, resp. The mean neutral glycolipid content of 0.19 ± 0.11 µmoles/g wet weight, represented 0.4% of the total lipid in liver. Ceramide dihexoside was the most abundant neutral glycolipid (.08 ± .05 µmoles/g wet weight). The predominant fatty acid methyl ester present in the hexane extract of the acidic methanol lysate were $C_{16:0}$ and $C_{18:0}$. The compound was tentatively identified as ganglioside G_{M3} or hematocide. The mean content of hematoside in the lower phase of 10 livers was .02 ± .008 µmoles/g wet wt. Liver samples of 0.5 to 1.0 g should be obtained at biopsy to permit a complete examination for lipid content in determining abnormalities in the concentration of most of the lipids involved in known lipid storage diseases.

5412 15α-HYDROXYLATION OF C_{19} STEROIDS IN RAT LIVER MICROSOMES. *(E.)* Gustafsson, J.A. (Karolinska Inst., Stockholm, Sweden) and B.P. Lisboa. *Biochem Biophys Acta* 210(1):199-201, 1970.

During the isolation of 3β,18-dihydroxy-5α-androstan-17-one from incubations of rat liver microsomes with 5α-androstan-3,17-dione, and 3α- and 3β-hydroxy-5α-androstan-17-one, it was observed that the mass spectrum of the trimethysilyl(silyl) ether of 3β,18-dihydroxy-5α-androstan-17-one was in some instances contaminated with a prominent peak at m/e 143. Transformation of the 18-hydroxy steroid into its 18-nor analog permitted the recording of a pure mass spectrum of the contaminating compound. It was identified as 3β,15α-dihydroxy-5α-androstan-17-one and is the first example of a 15α-hydroxylated C_{19} steroid formed *in vitro* in rat liver microsome preparations.

5413 ULTRASTRUCTURAL DIFFERENTIATION AND ENZYMATIC LOCALIZATION OF PHOSPHATASES IN THE DEVELOPING DUODENAL EPITHELIUM OF THE MOUSE: II. THE NEWBORN MOUSE. *(E.)* Hugon, J. S. (Med. Ctr., U. Sherbrooke, Quebec, Canada). *Histochemie* 22(2): 109-124, 1970.

Ultrastructural differentiation and enzymatic localization of acid or alkaline phosphatase were studied in the absorbing cells of the duodenal epithelium of newborn BALB/c mice. In the first week after birth the supranuclear part of the absorbing cells is formed by a network of smooth tubules and vacuoles connected with each other and most of these formations showed alkaline phosphatase activity. Below this zone, a cluster of dense tubules and dense bodies was situated above the Golgi apparatus and the nucleus and alkaline and acid phosphatase activities were present in this cluster but the Golgi cisternae and vesicles were negative for both enzymes. During the second week after birth the supranuclear zone of the absorbing cells exhibited striking modifications with formations of autophagic vacuoles and disappearance of the network of smooth profiles; however, the phosphatase activities were still present in the remaining dense tubules and dense bodies. On the sixteenth day after birth the morphological structure of the absorptive cells was similar to that observed in the full grown gut and alkaline phosphatase occurred in the Golgi cisternae and acid phosphatase in the Golgi vesicles.

5414 ENDOCRINE CELLS IN MAMMALIAN GASTRIC MUCOSA: POSSIBLE STORAGE SITES FOR VITAMIN B_{12}-BINDING PROTEINS.

(E.) Hakanson, H. (Dept. Pharmacol., U. Lund, Sweden), G. Liedberg and K. Lindstrand. *Experientia* 26(4):357-359, 1970.

The cellular storage site of the Intrinsic Factor (the gastric antipernicious principle) was determined in the mouse, rat, hamster and the rabbit and the regional and topographical distribution of the vitamin B_{12}-binding proteins were compared with that of the gastric enterochromaffin cells and the enterochromaffin-like cells, which are believed to be active in the secretion of gastrointestinal polypeptide hormones. Vitamin B_{12}-binding proteins were quantitated radiometrically after conjugation with Co-cyanocobalamin followed by Sephadex gel chromatography, and the number of enterochromaffin-like cells was calculated in 6 micron sections (taken from along the greater curvature) to establish their regional distribution, or in 20 micron horizontal serial sections, to establish their topographical distribution. The regional distribution of gastric vitamin B_{12}-binding proteins followed the distribution of enterochromaffin-like cells closely in mouse, rat and hamster, and the enterochromaffin cells were found almost exclusively in the pyloric area, while the enterochromaffin-like cells were found in the oxyntic gland area. In the guinea pig, the distribution of vitamin B_{12}-binding proteins was well correlated with that of the enterochromaffin-like cells in the pyloric gland area and in the adjacent oxyntic gland area. In the rabbit, the distribution of vitamin B_{12}-binding proteins correlated with a large population of reserpine-resistant, serotonin-containing enterochromaffin cells (Type II) in the oxyntic gland area. In oxyntic gland area, the vitamin B_{12}-binding proteins were restricted to the basal layer of the mucosa, following the topological distribution of the enterochromaffin cells. At a depth of 0.3 mm of mucosa the vitamin B_{12}-binding protein concentration was 5000 cpm/section and the concentration of enterochromaffin cells was 500/section, while at a depth of 0.6 mm (in the submucosal region), the protein concentration was 18000 cpm/section and the enterochromaffin cells numbered 2500/section.

5415 ACTIVATION *IN VITRO* OF RAT HEPATIC UDP-GLUCURONYLTRANSFERASE BY ULTRASOUND.

(E.) Henderson, P. T. (Fac. Med., U. Nijmegen, Netherlands). *Life Sci* 9(9):511-518, 1970.

Livers from adult male Wistar rats were used to study the influence of ultrasound on the UDP-glucuronyltransferase activity in whole liver homogenates and also to determine if the enzyme kinetics at varying acceptor and UDP-glucuronate concentrations are altered by ultrasonic treatment. The mean UDP-glucuronyltransferase activities at saturating substrate and cosubstrate concentrations (expressed as µmoles p-nitrophenol conjugated/hr/g liver) for untreated homogenates and homogenates ultrasonicated for 60 sec were 15.1 ± 3.5 and 50.8 ± 12.5, resp. Maximal activation was reached after about 60 sec. Preincubation for 10 min in the presence of 0.05% Triton X-100 did not result in a further increase of the enzymatic activity in homogenates, which were already maximally activated by ultrasound; for non-sonicated homogenates a 300% increase of the UDP-glucuronyltransferase activity was observed. If the liver homogenate was preincubated without additions at 37C for 4 hr, a spontaneous increase of activity of about 300% was observed. The enzyme activity of the homogenates previously activated by ultrasound only rose to about 125% of the initial values after incubation at 37C for 4 hr. The kinetic studies demonstrated that ultrasonic treatment of the liver homogenates resulted in a significant increase of the apparent K_m-values for UDP-glucuronyltransferase (0.39 ± 0.05 for the untreated homogenate versus 2.30 ± 0.62 for the ultrasonicated homogenate).

5416 OCCURRENCE OF C_{20} ALK-1-ENYL AND ALKYL GLYCEROL ETHERS IN PHOSPHOLIPIDS OF THE RAT INTESTINAL MUCOSA.

(E.) Paltauf, F. (Inst. Physiol. Chem., U. Graz, Austria) and D. Polheim. *Biochim Biophys Acta* 210(1):187-189, 1970.

The relative composition of the alkyl and alk-1-enyl glycerol ethers in the phosphatidylcholine and phosphotidylethanolamine fractions of the intestinal mucosa of 10 adult male Sprague-Dawley rats was examined by gas-liquid chromatography. The predominance of the $C_{16:0}$ chain in the alkyl (36.1%) and alk-1-enyl glycerol ethers (32.1%) of the phosphatidylcholine fraction corresponded to the high (60%) proportion of $C_{16:0}$ acid present in position 1 of phosphatidylcholine. In phosphatidylethanolamine, however, $C_{18:0}$ was the preferred (62.5%) chain length in the fatty acids of position 1 and in both (47.0 and 39.1%) types of ether-linked hydrocarbons. The high percentage of $C_{20:0}$ moieties, rather unusual constituents of mammalian tissue, especially in alkyl glycerol ethers of phosphatidylethanolamine (43.6%) but also of phosphatidylcholine (22.0%) as well as among alk-1-enyl glycerol ethers (17.5% and 14.1%), strongly emphasizes a metabolic relation between these 2 classes, either via a common precursor or allyl lipids being the precursors of alk-1-enyl lipids.

417 AN ELECTRON MICROSCOPIC AND FUNCTIONAL STUDY OF VERY LOW DENSITY LIPOPROTEINS
N INTESTINAL LYMPH.

(E.) Ockner, R.K. (U.
alifornia San Francisco Med. Ctr.,) and A.L. Jones.
Lipid Res 11(4):284-292, 1970.

ery low density lipoproteins (S_f 20-400) in in-
estinal lymph of male Sprague-Dawley rats receiv-
ng mixed micelles (fatty acid-monoolein-tauro-
holate) or a suspension of cholestyramine were
tudied by preparative ultracentrifugation and
lectron microscopy. Analysis (ultracentrifugation)
f lymph collected during a 3 hr intraduodenal
nfusion of isotonic NaCl, showed the very low den-
ity lipoprotein fraction carrying 1.5 mg trigly-
eride and 0.18 mg cholesterol per hr, while chylo-
icrons carried 1.7 mg and 0.007 mg, resp. An elec-
ron micrograph of the shadow-casted lymph (d >
.006) lipoproteins, in which most particles were
the size range of plasma very low density lipo-
oteins (300-1000 Å in diameter), confirmed the
portance of very low density lipoproteins in fast-
g lymph. Administration of palmitate-monoolein
d linoleate-monoolein micelles resulted in simi-
rly increased lymph triglyceride values (20.6
d 16.2 mg/hr, resp.). More lipid was carried in
ery low density lipoprotein during palmitate ab-
rption than during linoleate absorption (22% and
% of total lymph triglyceride, resp.). Particles
the linoleate-infused lymph show significantly
eater electron density, greater tendency to clump,
d generally a larger diameter than particles in
e palmitate lymph. An apparent lack of particle
abilization in the palmitate lymph is probably due
the lesser degree of osmiophilia of the saturated
tty acid. It seems that in the fasting state most
the endogenous lipid in intestinal lymph is trans-
rted in very low density lipoprotein which resem-
e plasma very low density lipoprotein in composi-
on, S_f value, and electrophoretic mobility.

18 ISOLATION AND CHARACTERIZATION OF REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE:
RRI CYTOCHROME c OXIDOREDUCTASE AND IDENTIFICATION
CYTOCHROME b5 IN THE LIVER OF HUMAN INFANTS.

(E.)
yka, L. F. (Stanford U. Sch. Med., Calif.). *Biochem*
armacol 19(3):945-951, 1970.

ver homogenates from a newborn and a premature infant
d from Sprague-Dawley rats were used to isolate and
aracterized NADPH:ferri cytochrome c oxidoreductase
d to identify cytochrome b5. Enzymatic activity was
und largely in the 9000 g supernatant and resultant
crosomal fractions of the liver homogenates and the
eld of washed microsomal protein was about 14 mg/g
ver for both specimens. Exposure to trypsin for
min resulted in solubilization of about 25% of the
crosomal protein and virtually all of the enymatic
tivity (solubilization was defined as non-sedimentation
er centrifugation at 105,000 g for 2 hr). The spe-
fic activities of the first 2 active fractions from
newborn specimen from the DEAE cellulose column
omatograph were 37 and 53 μmoles of cytochrome c
duced/min/mg and the specific activity of the next
action was estimated at 80. Assuming a mean value
50, these fractions were about 100x more active than
microsomes and represent a purification of about
600-fold over that of the 9000 g supernatant. Kinetic studies performed on DEAE fractions showed concentrations of NADPH varying from 2 x 10^{-4} to 1 x 10^{-6}M in the presence of an excess of cytochrome c. The reciprocal plot of Lineweaver-Burke yielded a K_m value of 3.6 x 10^{-6}M. The molecular weight and pH optima of the human enzyme were similar to that of the rat enzyme (67,000 and 7.9-8.5, resp.).

5419 GLYCOPROTEIN BIOSYNTHESIS: PURIFICATION AND PROPERTIES OF GLYCOPROTEIN -- *N*-ACETYLGLUCOSAMINYL TRANSFERASES FROM GUINEA PIG LIVER UTILIZING ENDOGENOUS AND EXOGENOUS ACCEPTORS.

(E.) Bosmann, H. B. (Dept. Pharmacol. Toxicol., U. Rochester, New York). *Europ J Biochem* 14(1):33-40, 1970.

A glycoprotein:N-acetylglucosamine transferase utilizing endogenous acceptors and a fetuin:N-acetylglycosamine transferase utilizing a defined fetuin acceptor from which sialic acid, galactose and N-acetylglucosamine had been removed were characterized from guinea pig liver. Both glycoprotein:N-acetylglucosamine enzyme systems used uridine diphosphate-N-acetylglucosamine as substrate, required Mn^{+2}, and had optimum pH of 5.4. Both enzyme systems were solubilized by extraction of the liver with 0.1% Triton X-100. The fetuin:N-acetylglucosamine transferase was separated from endogenous acceptors and purified more than 24-fold on Sephadex G-200. The endogenous system had a Michaelis-Menton constant of 0.6 μM and the exogenous fetuin:N-acetylglucosamine transferase had a constant of 3.8 μM with respect to N-[^{14}C] acetylglucosamine. The fetuin:N-acetylglucosamine transferase did not transfer any other nucleotide diphosphate sugar onto the acceptor (even uridine diphosphate-N-galactosamine was not transferred). The exogenous and endogenous systems may be identical except that the endogenous acceptor was removed during purification of the enzyme.

5420 ABSENCE OF CYSTATHIONASE IN HUMAN FETAL LIVER: IS CYSTINE ESSENTIAL?

(E.) Sturman, J. A. (New York St. Inst. Basic Res. Mental Retard., Staten Island, N. Y.), G. Gaull and N. C. R. Raiha. *Science* 169(3940):74-76, 1970.

The development of the transsulfuration pathway and the activities of methionine-activating enzyme, cystathionine synthase, and cystathionase were examined in 24 fetuses obtained at therapeutic abortion (2.5 to 20.5 cm, crown-rump length), 3 premature infants who died during the first 24 hr of life, and full-term newborn who died after 4 hr. Cystathionase activity was not measureable in the liver of any of the 24 fetuses or 3 premature infants and barely measurable in the full-term infant. The use of 0 to 4 μmole of cystathionine or 0 to 6.25 μmole of pyridoxal 5'-phosphate failed to elicit a measurable activity of cystathionase in the fetal liver. Cystathionine, the substrate of cystathionase, was present in the fetal liver in relatively high concentration (14 μmoles/100 g). The activities of cystathionine synthase and of methionine-activating enzyme from the crude extracts of the immature human during the period of gestation studied were 25-33% of those found in similar preparations from the mature human. Neither of these activities showed a correlation with crown-rump length. Crude extracts from placentas obtained with the same fetuses showed no measurable activity of any of these enzymes or transsulfuration. No cystathionine was detected in the blood or amniotic fluid from the same fetuses. It was suggested that cystine or cysteine may be an essential amino acid in the immature human.

5421 THE ACYLATION OF GLYCEROPHOSPHATE IN RAT LIVER: A NEW ASSAY PROCEDURE FOR GLYCEROPHOSPHATE ACYLATION, STUDIES ON ITS SUBCELLULAR AND SUBMITOCHONDRIAL LOCALIZATION AND DETERMINATION OF THE REACTION PRODUCTS. *(E.)* Daae, L. N. W. (Inst. Clin. Biochem., U. Oslo, Norway) and J. Bremer. *Biochim Biophys Acta* 210(1):92-104, 1970.

A new assay procedure was used to study glycerophosphate acyltransferase in rat liver homogenates and in subcellular and submitochondrial fractions which were incubated with (-)-palmitylcarnitine, CoA and carnitine palmityltransferase as a donor system for activated fatty acids and *sn*[I-(3)-^{3}H]-glycero-3-phosphate as the acyl acceptor. The reaction products were extracted from the incubation mixture with *n*-butanol. Differential and sucrose density gradient centrifugation of rat liver homogenates showed that glycerophosphate acyltransferases have bimodal intracellular localization; 50 to 66% of the total activity was found in the mitochondria with the rest in the microsomes. Subfractions of mitochondria showed that the glycerophosphate acylation enzymes are localized mainly in the outer membrane, based on the pattern of the marker enzymes found in the subfractions. The recovery of mitochondria fractionation experiments was repeatedly low (60%). Liver mitochondria had a greater capacity for acyl-CoA glycerophosphate acyl transfer than for fatty acid activation. Thin-layer chromatography showed that mitochondria chiefly produced lysophosphatidic acid, some phosphatidic acid and monoglyceride. Phosphatidic acid was the chief product of the microsomes, as well as some diglyceride and monoglyceride. Reaction products obtained with total homogenate were quite similar to those of the microsomes.

5422 SUBCELLULAR DISTRIBUTION OF ACYL-CoA: CHOLESTEROL ACYLTRANSFERASE IN RAT LIVER CELLS. *(E.)* Stokke, K. T. (Inst. Clin. Biochem., U. Oslo, Norway) and K. R. Norum. *Biochim Biophys Acta* 210(1):202-204, 1970.

Endogenously tritiated cholesterol (0.25 mC DL-[5-^{3}H] mevalonate injected i.p.) and exogenous 4-^{14}C-cholesterol were used as substrates for the cholesterol esterification system in liver homogenates obtained from male Wistar rats. An isotopic equilibrium between free and esterified cholesterol in the different subcellular liver fractions had been achieved 4 hr after mevalonate injection. The bulk of the acyl-CoA:cholesterol acyltransferase activity was present in the microsomal fraction and the recovery of the enzyme activity was satisfactory but not complete. The distribution of enzyme activity closely resembled that of the microsomal marker enzyme. Very little esterification of cholesterol was found to take place in the soluble fraction. The total activity of acyl-CoA:cholesterol acyltransferase determined by using endogenous cholesterol was 3.4 nmoles/min/g whole liver, which was about half that calculated from the assay using exogenous cholesterol, assuming total isotope equilibrium.

5423 STUDIES ON THE MECHANISM OF FATTY ACID SYNTHESIS: XXIII. THE ACYL BINDING SITES OF THE PIGEON LIVER FATTY ACID SYNTHETASE. *(E.)* Joshi, V. C. (Duke U. Med. Ctr., Durham, N. C.), C. A. Plate and S. J. Wakil. *J Biol Chem* 245(11):2857-2867, 1970.

Biochemical analysis was made of the covalent binding sites of acetyl, malonyl, and hexanoyl groups to pigeon liver fatty acid synthetase. Performic acid oxidation of the acyl synthetases demonstrated that the synthetase possesses two types of acyl binding sites which are thiol and nonthiol in nature. The presence of 2 thiol binding sites was confirmed by studies on radioactive peptic peptides obtained from ^{14}C-acetyl synthetase and ^{14}C-malonyl synthetase. The two thiol sites are the sulfhydryl group of the 4'-phosphopantetheine moiety of the synthetase and the sulfhydryl group of a cysteine residue, both of which bind acetyl groups and only the former binds malonyl groups. The nonthiol binding site has been tentatively identified as being the hydroxyl group of a serine residue. Prior treatment of the synthetase with high concentrations of *N*-ethylmaleimide inhibited all binding of acetyl and malonyl groups, while prior treatment with low concentrations of *N*-ethylmaleimide resulted in inhibition of thiol binding but had little effect on the nonthiol binding of these acyl groups. Prior treatment of the synthetase with iodoacetamide had no effect on the binding of acetyl and malonyl groups to the 4'-phosphopantetheine sulfhydryl but inhibited acetyl binding to the sulfhydryl of the cysteine residue. The order of acetyl binding to the synthetase seemingly binds first at the nonthiol site with successive transfers to the 4'-phosphopantetheine sulfhydryl and the cysteine sulfhydryl; the binding of malonyl groups apparently follows the same sequence except that malonyl groups are not transferred from the 4'-phosphopantetheine sulfhydryl to the cysteine sulfhydryl.

5424 VITAMIN K DEPENDENT FORMATION OF FACTOR VII BY A CELL-FREE SYSTEM FROM RAT LIVER. *(E.)* Babior, B. M. (Boston City Hosp., Mass.) and R. S. Kipnes. *Biochemistry* 9(13):2564-2569, 1970.

The role of vitamin K in the synthesis of clotting factor VII was studied in a cell-free system in the liver of young Charles River rats (150 to 180 g). A group of rats was poisoned 18 hr before sacrifice by i.p. injection of warfarin (2.5 g/100 g wt.) Rat livers were homogenized and whole cells and nuclei were removed by centrifugation (900 g for 5 min), and subcellular fractions for mitochondrial and microsomal determinations were prepared by further centrifugation. Factor VII was assayed by a one-stage method based on the correction of the coagulation defect of plasma from a human factor VII-deficient patient, and protein was assayed by the biuret method.

hen the cell-free homogenate and culture media are
ncubated at 37° C with $CaCl_2$, phenazine methosulfate,
TP and reduced glutathione, the factor VII activity
ises from a starting level of less than 0.05 units/
g protein to a maximum of 0.15 units/mg protein
n less than one hour, and begins to decline to
.10 units/mg protein in three hours. The increase
n factor VII activity is not due to a nonspecific
ffect of the homogenate on the assay, nor to any
ctivation of the preformed clotting factors during
ncubation, but it appeared to be the result of the
ormation of a new clotting factor during incubation.
he appearance of factor VII activity was completely
bolished in the livers of rats pretreated with
arfarin. Administration of vitamin K *in vivo* re-
tored the factor VII forming capacity of homogenates
rom warfarin-treated rats, but *in vitro* addition of
itamin K did not reverse the inhibition of factor VII
ormation. Omission of ATP, glutathione or phenazine
ethosulfate from the reaction mixture did not inhibit
ormation of factor VII. Omission of calcium ion de-
reased the factor VII activity from a normal value
f 0.123 ± 0.28 units/mg protein to 0.027 ± 0.013
nits/mg protein, and omission of tissue culture
edium (Eagle's medium) completely abolished the
actor VII activity. Factor VII forming system is
ocated in the soluble fraction (the 105,000 g super-
atant) of the homogenate.

425 ANTAGONISTIC EFFECT OF FOREIGN COMPOUNDS ON MICROSOMAL ENZYMES OF THE LIVER OF THE
AT. *(E.)* Feuer, G. (Dept. Path. Chem., U. Toronto,
nada) and V. Granda. *Toxic Appl Pharmacol*
(3):626-637, 1970.

e effect of various foreign compounds on the acti-
ty of rat hepatic microsomal enzymes was studied
enzyme assay. Coumarin (1 mmole/kg, p.o.) sig-
ficantly ($P < 0.01$) decreased inorganic glucose-6-
rophosphatase and inosine, guanosine and uridine
phosphatase activities. 4-Methylcoumarin had no
fect on these enzymes, but it increased the activity
drug-metabolizing enzymes (substrates of which were
umarin, 4-methylcoumarin, nitroanisole, codeine,
tylated hydroxytoluene and hexobarbital). Carbon
trachloride, ethionine, and thioacetamide also
paired phosphatase activity and slightly reduced
ug-metabolizing enzyme activity. Hexobarbital,
enobarbital, 3-methylcholanthrene, butylated hy-
oxytoluene, its alcohol and its alcohol-O-methyl
her, did not affect phosphatase activities but in-
ced the synthesis of drug-metabolizing enzymes to
e same extent as did 4-methylcoumarin. The de-
eased phosphatase activity induced by coumarin and
e increased drug-metabolizing enzyme activity in-
ced by 4-methycoumarin were blocked when these com-
unds were administered simultaneously. A similar
tagonism was produced by the simultaneous admini-
ration of carbon tetrachloride and 3-methylcho-
nthrene or phenobarbitol, suggesting, in both cases,
common site in their action on the endoplasmic re-
culum.

26 THE SURFACE CHARGE OF RAT LIVER MITOCHONDRIA AND THEIR MEMBRANES:
ARIFICATION OF SOME CONTROVERSIES CONCERNING MITOCHONDRIAL STRUCTURES. *(E.)* Heidrich, H.G. (Max Planck Inst. Res., Munich, Germany), R. Stahn and K. Hannig. *J Cell Biol* 46(1):137-150, 1970.

Preparative free flow electrophoresis was used to examine the surface charge of intact mitochondria and submitochondrial particles obtained from the livers of Sprague-Dawley rats. Two fractions were obtained when submitochondrial preparations obtained by a swelling-contraction procedure were examined with this technique. The same electrophoretic properties as intact mitochondria was demonstrated by one of the fractions (which indicated that it was derived from the outer limiting membrane of the mitochondrion) and this fraction contained monoamine oxidase and rotenone-insensitive NADH-cytochrome *c* reductase. The other fraction exhibited an electrophoretic mobility which was different from that of intact mitochondria, and this fraction contained enzymes characteristic of the inner-membrane matrix fraction, such as soluble and particulate enzymes of the Krebs cycle. Microsomes exhibited an electrophoretic mobility which was almost identical with that of the outer mitochondrial membrane. The outer membrane of the mitochondrion apparently is the sole determinant of the surface charge of the mitochondria.

5427 DIETARY REGULATION OF GLYCOLYTIC ENZYMES: V. LACK OF EFFECT OF INTRAMUSCULARLY ADMINISTERED SEX STEROID ON MALE AND FEMALE RAT JEJUNUM.
(E.) Stifel, F.B. (Fitzsimons Gen. Hosp., Denver, Colo.), R.H. Herman and N.S. Rosensweig. *Biochim Biophy Acta* 208(3):368-372, 1970.

The effects of estradiol, progesterone and testosterone (100 µg/100 g body weight, i.m.) on the activities of glycolytic enzymes were studied in the rat (male and female Holtzmann) jejunum by enzyme assay. The sex hormones did not produce a demonstrable effect on the activities of the jejunal carbohydrate-metabolizing enzymes (phosphofructokinase, pyruvate kinase, fructosediphosphatase, hexokinase and fructose-1,6-diphosphate aldolase) in either male or female rats. However, estradiol significantly increased ($P < 0,01$) the uterine activities of pyruvate kinase (control: 1352 ± 107; treatment: 3912 ± 212 nmoles/min/mg protein) and phosphofructokinase (control: 44.1 ± 3.7; treatment: 81.7 ± 5.4 nmoles/min/mg protein). The observations with i.m. sex hormones are in marked contrast to the adaptive changes seen previously in jejunal enzyme activities following p.o. administration of the same dose of the same sex hormones; hence, the route of administration of sex hormones appears to play a prominent role in the ability of these compounds to regulate jejunal enzyme activity.

5428 LOCALIZATION OF THE ENERGY-INDEPENDENT K^+-H^+ EXCHANGE IN THE OUTER MEMBRANE OF RAT LIVER MITOCHONDRIA.
(Ger.) Lutze, G. (Med. Acad. Magdeburg, Germany), W. Liese and W. Kunz. *FEBS Letters* 8(4):210-212, 1970.

The localization of the energy-independent K^+-H^+ exchange was investigated in intact mitochondria and submitochondrial particles obtained by differential centrifugation of liver homogenates from Wistar rats. The proton emission was measured by glass electrodes at 22°C over an agar-tris/HCl bridge in a K^+-free medium, and the half-saturation constants were determined by KCl solutions of 5, 10, and 20 mM. Proton emission was shown to be independent of the KCl medium, and, with a reference medium of protein, the H^+ emission through outside membranes was demonstrated by a decrease in KCl concentration which was higher than in the intact mitochondria (outer membranes: intact mitochondria = 4-5:1). The K^+-H^+ exchange was localized in the mitochondrial outer membranes and the H^+-emission was found to correlate with the specific activity of monoamine oxidase (MAO), as shown by the disintegration of mitochondria with various digitonin concentrations (with 1 mg digitonin/10 mg mitochondrial protein, 10-20% of the MAO activity is released and with 2 mg/10 mg, 70-80% MAO activity was released).

5429 DNA POLYMERASE ACTIVITIES ASSOCIATED WITH SMOOTH MEMBRANES AND RIBOSOMES FROM RAT LIVER AND HEPATOMA CYTOPLASM. *(E.)* Baril, E. F. (Duke U. Med. Ctr., Durham, N. C.), M. D. Jenkins, O. E. Brown and J. Laszlo. *Science* 169(3940):87-89, 1970.

DNA polymerase activity associated with smooth membranes and ribosomes was studied in subfractions derived from the postmicrosomal supernatant solution from normal rats liver and from Morris hepatoma 7777. DNA polymerase activity in the normal rat liver was low and had no preference for native or heat-denatured DNA as primer while DNA polymerase activity was higher in hepatoma tissue and had a preference for heat-denatured DNA as primer. After sucrose gradient centrifugation of the resuspended pellet (particulate matter from the postmicrosomal supernatant solution), nearly all of the denatured primer-preferring DNA polymerase activity in the pellet fractions from liver or hepatoma tissue was concentrated with the membrane fraction. The DNA polymerase activity with denatured DNA primer was about 8-fold greater in the membrane fraction from the hepatoma than from normal liver. Polymerase activity that preferred native DNA as primer was also found in the free ribosome obtained by sucrose gradient centrifugation of the pellet, with the activity being 3 times higher in ribosomes from the hepatoma tissue. The postmicrosomal supernatant solution of rat liver contained 45-50% of the total DNA polymerase activity present in the crude homogenate and most (90-95%) of the denatured DNA primer-preferring activity of the postmicrosomal supernatant solution of rat liver and hepatoma sedimented after 15 hr of centrifugation at 105,000 g. Maximal activity of the DNA polymerase in the membrane and ribosome fractions required the addition of Mg^{++}, DNA, and a sulfhydryl reducing agent.

5430 EXTRACTION OF POLYPHOSPHOINOSITIDES WITH NEUTRAL AND ACIDIFIED SOLVENTS: A COMPARISON OF GUINEA-PIG BRAIN AND LIVER, AND MEASUREMENTS OF RAT LIVER INOSITOL COMPOUNDS WHICH ARE RESISTANT TO EXTRACTION. *(E.)* Michell, R. H. (Dept. Biochem., U. Birmingham, England), J. N. Hawthorne, R. Coleman and M. L. Karnovsky. *Biochim Biophys Acta* 210(1):86-91, 1970.

Diphosphoinositide (phosphatidylinositol 4-phosphate) and triphosphoinositide (phosphatidylinositol 4,5-diphosphate) were quantitatively obtained (in almost colorless extracts not severely contaminated with chloroform-insoluble material or inorganic phosphate) from guinea-pig (400-600 g) brain using a mixture of chloroform, methanol and 2 M KCl. The same technique did not extract polyphosphoinositides from guinea-pig liver or from several other tissues (kidney, heart, lung and skeletal muscle). Analysis of the residue remaining after extraction of lipids from Wistar male rat (300-400 g) liver, and of phosphate ester fractions obtained from this tissue by acid hydrolysis showed only low concentrations of inositol attributable to inositol di- and triphosphates. These results are not consistent with a previous report of relatively high concentrations of these esters in rat liver.

5431 SEDIMENTATION PROPERTIES OF RAT LIVER MITOCHONDRIA: EFFECTS OF CORTISONE TREATMENT. *(E.)* Loeb, J. N. (Columbia U. Coll. Physician Surgeon, New York, N.Y.) and D. V. Kimberg. *J Cell Biol* 46(1):17-26, 1970.

Estimation of liver mitochondrial size based on sedimentation velocity and the relation of cortisone treatment to sedimentation properties of liver mitochondria was studied in albino rats (120-150 g). In the treated animals, cortisone acetate (5 mg, s.c.) was given daily for seven days prior to sacrifice, following which the liver was removed and prepared for sucrose gradient analyses. Mitochondria from the treated animals consistently sedimented at a greater velocity (1.4 times) compared with the control rats and the experimentally observed sedimentation rate (s=2.36 cm) proved to be very close to the expected value (s=2.38 cm). Mitochondria from cortisone treated animals was also found by electron microscopy to be larger in size than those in controls The fact that the increase in sedimentation velocity of mitochondria from the treated animals was less than predicted suggests the possibility of alterations in their composition, such as water content or lipid content.

5432 UBIQUINONE FROM RAT LIVER GOLGI APPARATUS FRACTIONS. *(E.)* Nyquist, S. E. (Dept. Biol. Sci., Purdue U., Lafayette, Ind.), R. Barr and D. J. Morre. *Biochim Biophys Acta* 208(3):532-534, 1970.

Ubiquinone extracted from isolated Golgi apparatus fractions (modification of the methods of Cheetham *et al.* and Morré *et al.*) was purified on thin layer or alumina columns, quantitated (nmoles/mg protein) and compared with that extracted from mitochondria in rat liver. Thin layer purification of ubiquinone from both Golgi apparatus and mitochondria yielded higher concentrations (3.85 and 2.48 resp.) than alumina column samples (2.42 and 1.43 resp.) even though the column samples had less neutral lipid and steroid contamination, and the content of the Golgi apparatus was about 1.7 times that of mitochondria.

5433 CELL LOSS FROM SMALL INTESTINAL MUCOSA: A MORPHOLOGICAL STUDY. *(E.)* Pink, I. J. (St. Thomas Hosp., London, England), D. N. Croft and B. Creamer. *Gut* 11(3):217-222, 1970.

A quantitative assessment was made of the proportion of various cell types found in saline washings of the luminal surface of the small intestine of normal humans and rats. In anesthesized rats, the small intestine was occluded at the duodenal-jejunal flexure, and saline was washed through the entire length of the small bowel and collected at the terminal ileum. In 7 humans (3 normal and 4 with celiac syndrome), a 5 cm segment of small intestine was washed using a triple-lumen tube which collected material arising from the small intestine alone. Clumps of cells examined by light microscopy were difficult to differentiate since no fine structures (brush border) could be identified while under the electron microscope, different cellular structures could be distinguished and cell types identified. Surface epithelial cells were identified by the presence of microvilli on the well-preserved brush borders and leucocytes were identified by the numerous electron-dense bodies within the cytoplasm, although the characteristic centriole next to the nucleus was not seen. In four specimens (293 cells) of rat small intestine washings, 85% of the cells were recognizable intestinal epithelial (absorptive) cells, 5% were leucocytes, and 10% were unidentifiable cells. In 3 washings (288 cells) from normal subjects 80% of the cells were epithelial cells, 2% were leucocytes and 18% were unidentifiable cells. Four intestinal washings (394 cells) from patients with celiac syndrome (flat mucosa) contained 82% small intestine epithelial cells, 5% leucocytes and 13% unidentifiable cells.

5434 THE ISOLATION BY ISOPYCNIC DENSITY-GRADIENT CENTRIFUGATION OF TWO MITOCHONDRIAL POPULATIONS FROM LIVERS OF EMBRYONIC AND FED AND STARVED ADULT RATS. *(E.)* Pollak, J. K. (Dept. Histol. Embryol., U. Sydney, Australia) and E. A. Munn. *Biochem J* 117(5):913-919, 1970.

Two mitochondrial populations from livers of embryonic and fed and starved adult female Wistar rats (150-200 g) were isolated and studied by isopycnic density-gradient centrifugation, enzyme assay, and electron microscopy. Mitochondria isolated from livers of fed adult, starved adult, and embryonic rats were separated on a sucrose density-gradient into 3 distinct bands, B1, B2 and B3 (mean buoyant density: 1.162, 1.184, 1.216, resp.). B1 consisted of disrupted and B2 and B3 of intact mitochondria. B2 and B3 mitochondria had similar protein/phospholipid ratios (approximately 4.4), virtually identical phospholipid and fatty acid compositions and similar specific activities for cytochrome oxidase, malate dehydrogenase and monoamine oxidase. Both B2 and B3 had very low glucose 6-phosphatase and acid phosphatase activities (90 and 80% less than control, resp.). An isolated, adult rat liver mitochondria had electron dense matrices (condensed forms) while some embryonic liver mitochondria were condensed, but a significant proportion had dilated matrices. All B2 mitochondria were in the condensed form while B3 mitochondria from adult rats were condensed if fixed in their equilibrium density sucrose, but when this was diluted rapidly to 0.25 M sucrose they became swollen. Some B3 mitochondria from embryonic rats were condensed while others had dilated matrices and they all became swollen if rapidly diluted to 0.25 M sucrose. The matrix space of B2 mitochondria appeared to be almost totally inaccessible to sucrose, but that of B3 mitochondria was readily accessible to sucrose. In fed adult rats, the B2 mitochondria predominated, whereas in starved rats B2 and B3 were present in approximately equal proportions. Mitochondrial preparations from embryonic liver consist mostly of B3 mitochondria, but the proportion of these decreases progressively as development proceeds. The B2 mitochondria of fed adult rat livers could be converted into B3 mitochondria by incubation with 10 mM succinate and 10 mM phosphate and some B2 mitochondria were converted into B3 mitochondria by exposure to high concentrations of sucrose.

5435 THE DISTRIBUTION AND RELATIVE LOCATION OF THE LYMPHATIC AND BLOOD VESSELS IN THE MUCOSA OF THE RABBIT COLON. *(E.)* Kamei, Y. (Nagoya City U. Med. Sch., Japan), *Nagoya Med J* 15(4):223-238, 1969.

The distribution and relative location of lymphatics and blood vessels were studied morphologically in the mucosa of the rabbit transverse colon, using conventional puncture techniques (india ink and Berlin blue as dyes), and intra-arterial injections of dyes or silver nitrate to locate lympatic vessels. Conventional puncture injection of dyes revealed that the arterial capillaries running longitudinally to the mucosal surface between the intestinal glands, turn towards a horizontally oriented venous capillary network below the mucosal epithelium, while the lymphatic capillaries are found only in the deep layer of the mucosa and form a horizontal network between the bottom of the intestinal glands and the muscularis mucosae. Intra-arterial injection of india ink with silver nitrate revealed that blood vessels consist of arterioles (20 - 20 μ) in the submucosa, precapillaries (12 - 20 μ) between mucosal intestinal glands, capillaries in the superficial mucosa, postcapillaries (20 - 40 μ) beneath the mucosal epithelium, and venules (40 - 80 μ). The larger diameter lymphatic capillaries also form a horizontal network which lies in the deep layer of the mucosa, and above the muscularis mucosae, the lymphatics form a coarse network surrounding the bottom of a few intestinal glands. Pairs of lymphatic vessels are seen in the submucosa running along both sides of a pair of blood vessels (artery and vein), but no lymphatic capillaries are present. The addition of pepsin to the intraarterially injected india ink revealed that the dye leaked out not only from the mucosal blood vessels, but also from the blood vessels of the submucosa, tunica muscularis and serosa.

5436 MACROMOLECULAR ASSEMBLIES OF LIPID IN BILE. *(E.)* Howell, J. I. (Roy. Free Hosp. Sch. Med., U. London, England), J. A. Lucy, R. C. Pirola and I. A. D. Bouchier. *Biochim Biophys Acta* 210(1):1-6, 1970.

Negatively stained specimens of natural and artificial solutions of bile were examined by electron microscopy in order to obtain data on the shape and size of mixed micelles of lipid and bile salts occurring in normal and pathological bile. Macromolecular assemblies having cigar-shaped profiles were present in all samples and were observed in both natural and artificial bile. These assemblies varied in size but were generally 0.1 µ in length and 0.02 µ in breadth. One of the two main kinds of macromolecular assemblies seen, which was present in both calculous and acalculous bile, apparently owed its characteristic appearance to the presence of bile salts, as similar structures were observed in the artificial bile. This assembly was interpreted in terms of a specific arrangement of disc-shaped, mixed micelles of lipid and bile salt molecules. The structure of the other assembly closely resembled that of liposomes which occur in dispersions of phospholipid and cholesterol free from bile salts. No significant differences were found between negatively stained preparations of calculous and acalculous bile. The growth of cholesterol-containing gall stones in pathological bile which is relatively deficient in bile salts may be associated with the presence of liposomes.

5437 IDENTIFICATION OF PHYLLOQUINONE IN HORSE LIVER.

(E.) Duello, T. J. (St. Louis U. Sch. Med., Mo.) and J. T. Matachiner. *Arch Biochem Biophys* 138(2):640-645, 1970.

The presence and distribution of Vitamin K in several metabolic forms was determined from lipid extractions of horse liver and by the characterization of phylloquinone. Fresh horse liver (160 gm) was ground, mixed with ethanol, and extracted five times with acetone; the acetone extracts were concentrated by distillation and partitioned between hexane and water. The concentration of vitamin K in the first four combined acetone extracts was 3.3 g/g, as determined by chick bioassay. The fat-soluble vitamin was purified by silicic acid and partition column chromatography, and finally by thin-layer chromatography. The vitamin was distributed between fractions which normally contain phylloquinone and all the biological activity was eluted with the radioactivity in the phylloquinone fractions, suggesting that the natural vitamin may be phylloquinone. The purified vitamin K was identified as phylloquinone by ultraviolet spectroscopy and mass spectrometry. The vitamin was identified by its molecular ion (m/e 450) and by other characteristic ions: m/e 435, 225, 198 and 186. Approximately 65% of the biologic activity eluted from silicic acid in fractions 2 and 3 was identified as phylloquinone. An isolation procedure using Claisen's alkali confirmed that 62% of the biological activity was due to phylloquinone.

5438 INTERCONVERTIBLE FORMS OF PHOSPHOFRUCTOKINASE OF RABBIT LIVER.

(E.) Ramaiah, A. (All-India Inst. Med. Sci., New Delhi) and G. A. Tejwani. *Biochem Biophys Res Commun* 39(6):1149-1156, 1970.

Rabbit liver phosphofructokinase, dissolved in 0.01 M K_2HPO_4, 0.05 M Tris-HCl, pH 7.5, 3.3 x 10^{-4}M EDTA and 10 mM ATP, stored at -70° exhibited classic Michaelis-Menten kinetics and gave a hyperbolic curve when activity rates at different fructose-6-phosphate (F-6-P) concentrations were determined by adding enzyme last. When the stock enzyme was diluted 10-fold with 0.1 M Tris-HCl, pH 8.0, containing 10 mM K_2HPO_4 and assayed at nonsaturating concentrations of ATP and F-6-P, it showed far lower activity (not due to inactivation by dilution) than the activity of the same amount of enzyme when assayed by adding the undiluted enzyme last, and gave a sigmoidal curve when the rates were determined after prior dilution of the stock enzyme and subsequent addition of F-6-P. The amount of F-6-P required for half maximal saturation of the catalytic site with F-6-P was about 0.05 mM when the velocity was determined by adding stock enzyme last, without any prior dilution of the enzyme, and 0.4 mM when the velocity was determined by adding the same amount of enzyme after 11.3-fold dilution. Phosphofructokinase in rabbit liver may exist in interconvertible forms, differing widely in their apparent K_m values for F-6-P, and F-6-P and other positive effectors may keep the enzyme in a form which has low apparent K_m for F-6-P.

5439 FINE STRUCTURAL LOCALIZATION OF PEROXIDASE ACTIVITY IN THE EPITHELIUM OF LARGE INTESTINE OF RAT.

(E.) Venkatachalam, M. A. (Boston City Hosp., Mass.), M. E. Soltani and H. D. Fahimi. *J Cell Biol* 46(1):168-173, 1970.

Segments of colon, duodenum, ileum, and stomach from male and female Charles River rats were used to study the fine structural localization of peroxidase activity in the mucus-secreting cells lining the crypts of rat large intestine. Under electron microscopy, the cells in the lower half of the colonic crypts contained an electron-opaque reaction product in the cisternae of the endoplasmic reticulum including those of the nuclear envelope. Wherease the staining was observed mainly in the granular endoplasmic reticulum, a few agranular segments also contained the reaction product. Some Golgi saccules, numerous Golgi vesicles, measuring 0.05 to 0.1 µ in diameter, and some larger membrane-bound granules (0.8 µ) stained prominently. In many cells, even in sections not counterstained with lead or uranyl acetate, free ribosome-like particles in the vicinity of endoplasmi reticulum and mucus droplets stained positively. In contrast to the colon, the gastric, duodenal, and ileal glands did not stain for peroxidase activity. Inhibition of staining by boiling, exclusion of H_2O_2, excess H_2O_2, and by azide suggested that the enzyme is most probably a peroxidase.

5440 AN APPRAISAL OF THE USE OF MONOAMINE OXIDASE AS AN ENZYME MARKER FOR THE OUTER MEMBRANE OF RAT LIVER MITOCHONDRIA.

(E.) Greenawalt, J. W. (Johns Hopkins Sch. Med., Baltimore, Md.) and C. Schnaitman. *J Cell Biol* 46(1):173-179, 1970.

Liver mitochondria isolated from adult male albino, Sprague-Dawley rats were used to study the use of monoamine oxidase as an enzyme marker for the outer mitochondrial membrane. Assays of aldehyde dehydrogenase activity showed that over 85% of this activity was recovered in the inner membrane plus matrix fraction, whereas 75% of the monoamine oxidase activity was found in the outer membrane plus soluble fractio

Chloral hydrate inhibited aldehyde dehydrogenase activity in the untreated mitochondrial fraction and in the inner membrane plus matrix fraction about equally (80%). Chloral hydrate showed no effect or monoamine oxidase activity while pargyline completely inhibited this activity. Addition of benzaldehyde to the standard spectrophotometric assay of monoamine oxidase activity caused no change in absorbancy, indicating that conversion of the aldehyde by the inner membrane plus matrix fraction did not take place. The rates of oxidation obtained with intact mitochondria versus the outer membrane fraction using tyramine-HCl as substrate for monoamine oxidase were essentially the same in the presence and absence of semicarbazide. The outer membrane fraction exhibited a 10-fold greater monoamine oxidase specific activity than did the inner membrane plus matrix fraction and a 3- to 4-fold greater specific activity than the mitochondria. Measurement of protein distribution in the various fractions showed that 90% of the total monoamine oxidase activity was recovered in the outer membrane plus soluble fraction.

5441 STUDIES ON THE MECHANISM OF FATTY ACID SYNTHESIS: XXIV. THE ACETYL- AND MALONYLTRANSACYLASE ACTIVITIES OF THE PIGEON LIVER FATTY ACID SYNTHETASE. *(E.)* Plate, C. A. (Duke U. Med. Ctr., Durham, N. C.), V. C. Joshi and S. J. Wakil. *J Biol Chem* 245(11):2868-2875, 1970.

By use of the transacylation of acetyl and malonyl groups from their CoA thioesters to *E. coli* acyl carrier protein to assay the acetyl- and malonyl-transacylase activities, investigations were made of the general and kinetic properties of these enzymes as they exist in the intact pigeon liver fatty acid synthetase complex; fractionation of the acetyl- and malonyltransacylase activities from the pigeon synthetase was also attempted. The transacylation of the acetyl and malonyl groups were catalyzed by the transacylase complex of the pigeon synthetase complex. Prior treatment with 0.25 mM *N*-ethylmaleimide inhibited the acetyl- and malonyltransacylase activities. It appeared that a sulfhydryl group was not directly involved in the transacylations of acetyl and malonyl groups to acyl carrier protein. Previous incubation of the synthetase with either acetyl-CoA or malonyl-CoA prevented the inhibitory action of *N*-ethylmaleimide. The acetyl- and malonyltransacylase activities were not affected by indoacetamide which totally inhibited triacetic acid lactone formation and fatty acid synthesis. Acetyl- and malonyltransacylase activities were competitively inhibited by malonyl- and acetyl-CoA, resp. Both activities were competitively inhibited by CoA with respect to *E. coli* carrier protein. The acetyl and malonyltransacylase activities were separated from the bulk of the synthetase protein by treatment of the synthetase with 0.5 M guanidine hydrochloride followed by diethylaminoethyl cellulose chromatography. Sephadex G-200 chromatography further separated the activities from the protein but very low yields were obtained. Separation of the malonyl- and the acetyltransacylase activities was not possible.

5442 THE MECHANISM OF SYNTHESIS OF FATTY ACIDS BY THE PIGEON LIVER ENZYME SYSTEM. *(E.)* Phillips, G. T. (Sterling Chem. Lab., Yale U., New Haven, Conn.), J. E. Nixon, J. A. Dorsey, P. H. W. Butterworth, C. J. Chesterton and J. W. Porter. *Arch Biochem Biophys* 138(2):380-391, 1970.

Peptic digestion of ^{14}C-acetyl- and ^{14}C-malonyl-labeled pigeon liver fatty acid synthetase complex indicates 3 major sites of binding of acetyl and 2 sites of binding of malonyl groups. Analyses of the chemical properties of these sites, when free and when esterified with acetyl or malonyl groups and analyses for the amino acids present in the peptides containing these sites, has led to their identification as the -SH groups of 4'-phosphopantetheine, cysteine, and the hydroxyl group of a hydroxyamino acid. From data on the sites of binding of intermediates to the fatty acid synthetase and the order of transfer from one site to another, it is postulated that in the reaction cycles that occur in fatty acid synthesis, each cycle would be initiated by the transfer of an acyl group from the 4'-phosphopantetheine prosthetic group to the cysteine site. At the same time, a malonyl moiety would be transferred from malonyl-CoA to the B_1 (hydroxyl group of a hydroxyamino acid) site and then to the 4'-phosphopantetheine site. A condensation reaction would then occur to lengthen the growing acyl chain by two carbon atoms. and the cycles would be terminated by deacylation of palmityl-enzyme to palmitic acid.

5443 CHEMICAL COMPOSITION OF THE AGEING INTESTINE. *(E.)* Penzes, L. (U. Med., Budapest, Hungary). *Digestion* 3(3):174-178, 1970.

5444 HORSE LIVER ALCOHOL DEHYDROGENASE: ON THE PRIMARY STRUCTURE OF THE ETHANOL-ACTIVE ISOENZYME. *(E.)* Jornvall, H. (Nobel Med. Inst., Stockholm, Sweden) and J. I. Harris. *Europ J Biochem* 13(3):565-576, 1970.

5445 COMPLEXES OF LIVER ALCOHOL DEHYDROGENASE: FURTHER STUDIES ON RATE OF INACTIVATION. *(E.)* Reynolds, C. H. (Dept. Biochem., U. Edinburgh, Scotland), D. L. Morris and J. S. McKinley-McKee. *Europ J Biochem* 14(1):14-26, 1970.

5446 PEROXISOMES IN ANIMALS: LIVER PEROXISOMES, CYTOLOGY AND FUNCTION. *(E.)* Baudhuin, P. (Lab. Chem. Physiol., U. Louvain, Belgium). *Ann New York Acad Sci* 168(2):214-228, 1969.

5447 CHARACTERIZATION OF MOUSE NONSPECIFIC ESTERASE ISOENZYMES. *(E.)* Ogura, H. (Wakayama Med. Coll., Japan). *Wakayama Med Rep* 13(3): 129-136, 1970.

5448 IDENTIFICATION AND DETERMINATION OF NEUTRAL STEROID SULPHATES IN HUMAN FETAL ADRENAL AND LIVER TISSUE. *(E.)* Huhtaniemi, I. (Dept. Med. Chem., U. Helsinki, Finland), T. Luukkainen and R. Vihko. *Acta Endocr* 64(2):273-286, 1970.

5449 pH DEPENDENCE OF THE EFFECT OF ADENOSINE TRIPHOSPHATE AND ETHYLENEDIAMINETETRAACETATE ON SODIUM AND MAGNESIUM BINDING BY CELLULAR MEMBRANE FRAGMENTS. *(E.)* Sanui, H. (Dept. Physiol. Anat., U. California, Berkeley). *J Cell Physiol* 75(3): 361-368, 1970.

5450 QUANTITATIVE DETERMINATION OF WATER-SOLUBLE PROTEINS IN MECONIUM. *(E.)* Rule, A. H. (Boston Coll. Grad. Dept. Biol.), D. T. Baran and H. Shwachman. *Pediatrics* 45(5):847-850, 1970.

5451 URIDINE DIPHOSPHATE GLUCOSE PYROPHOSPHORYLASE: IV. CRYSTALLIZATION AND PROPERTIES OF THE ENZYME FROM HUMAN LIVER. *(E.)* Knop, J. K. (Dept. Biochem., Michigan St. U., East Lansing) and R. G. Hansen. *J Biol Chem* 245(10):2499-2504, 1970.

5452 *ESCHERICHIA COLI* NICOTINAMIDE TRANSHYDROGENASE DRIVEN BY AEROBIC OXIDATION AND ITS ENHANCEMENT BY AN ENERGY TRANSFER FACTOR FROM RAT-LIVER MITOCHONDRIA. *(E.)* Fisher, R. J. (Boston Biomed. Res. Inst., Mass.), K. W. Lam and D. R. Sanadi. *Biochem Biophys Res Commun* 39(6):1021-1025, 1970.

5453 AN ALLOSTERIC AND A NON-ALLOSTERIC GUANINE DEAMINASE ISOENZYME IN RAT LIVER SUPERNATANT. *(E.)* Kumar, K. S. (Dept. Biochem., Lucknow U., India) and P. S. Krishnan. *Biochem Biophys Res Commun* 39(6):1087-1093, 1970.

5454 ANTIGENIC DETERMINANTS ON AUSTRALIA-ANTIGEN PARTICLES. *(E.)* Brzosko, W. J. (St. Inst. Hyg., Warsaw, Poland), K. Madalinski, K. Krawczynski and A. Nowoslawski. *Lancet* 1(7655):1058, 1970.

5455 SIDEROSIS IN THE RAT BY AN INCREASE OF IRON IN THE FOOD: HISTOLOGICAL AND ULTRASTRUCTURAL STUDY. *(Fr.)* Lehy, T. (Hosp. Bichat, Paris, France), P. Zeitoun, P. Manchon and M. Dubrasquet. *Path Biol* 18(7-8):407-415, 1970.

5456 FINE STRUCTURE OF AMYLOID-CONTAINING LIVERS FROM WHITE PEKIN DUCKS. *(E.)* Duncan, D. (U. Texas Med. Branch, Galveston, Tex.), R. H. Rigdon and R. Morales. *Texas Rep Biol Med* 27(4):969-984, 1969.

5457 EFFECT OF STERIGMATOCYSIN ON RAT LIVER NUCLEAR RNA. *(E.)* Nel, W. (Natl. Nutr. Res. Inst., Pretoria, Union of South Africa) and H. E. Pretorius. *Biochem Pharmacol* 19(3):957-959, 1970.

5458 THE REDOX POTENTIAL OF LIVER CYTOCHROME P-450. *(E.)* Waterman, M. U. (U. Pennsylvania Med. Sch., Philadelphia) and H.S. Mason. *Biochem Biophys Res Commun* 39(3):450-454, 1970.

5459 INTERMEDIATES OF FATTY ACID SYNTHESIS: SITES OF BINDING TO THE PIGEON LIVER FATTY ACID SYNTHETASE. *(E.)* Nixon, J.E. (Dept. Food Sci., Oregon St. U., Corvallis), G.T. Phillips, A.S. Abramovitz and J.W. Porter. *Arch Biochem Biophys* 138(2):372-379, 1970.

5460 INDENTIFICATION OF THE SITES OF BINDING OF ACETYL AND MALONYL GROUPS TO THE PIGEON LIVER FATTY ACID SYNTHETASE COMPLEX. *(E.)* Phillips, G.T. (Dept. Chem., Yale U., New Haven, Conn.), J.E. Nixon, A.S. Abramovitz and J.W. Porter. *Arch Biochem Biophys* 138(2):357-371. 1970.

5461 MODIFICATIONS OF THE HEPATIC TISSUE AND HEPATOCYTES OF DECAPITATED AND CORTISOL TREATED RAT FETUSES. *(Fr.)* Dupouy, J.P. (Fac. Sci. Paris, France). *Arch Anat Micr Morph Exp* 59(1):51-66, 1970.

5462 ANATOMY OF FELINE ESOPHAGUS WITH SPECIAL REFERENCE TO ITS MUSCULAR WALL AND PHRENOESOPHAGEAL MEMBRANE. *(E.)* Bremner, C. G. (Mayo Clin., Rochester, Minn.), R. G. Shorter and F. H. Ellis, Jr. *J Surg Res* 10(7):327-331, 1970.

5463 THE EFFECT OF α-KETOGLUTARATE AND OTHER α-KETO ACIDS ON THE RECOVERY OF TYROSINE AMINOTRANSFERASE ACTIVITY FROM CHICK EMBRYO LIVER. *(E.)* DeVivo, D. C. (St. Louis Child. Hosp., Mo.) and B. Peterkofsky. *J Biol Chem* 245(10):2737-2746, 1970.

5464 PURIFICATION AND PROPERTIES OF MAMMALIAN LIVER CYTIDINE TRIPHOSPHATE SYNTHETASE. *(E.)* Savage, C. R. (Roswell Park Mem. Inst., Buffalo, N. Y.) and H. Weinfeld. *J Biol Chem* 245(10):2529-2535, 1970.

5465 CHANGES IN THE FINE STRUCTURE OF TADPOLE *(RANA CATESBEIANA)* LIVER DURING THYROXINE-INDUCED METAMORPHOSIS. *(E.)* Bennett, T. P. (Biol. Lab., Harvard U., Cambridge, Mass.), J. S. Glenn and H. Sheldon. *Develop Biol* 22(2):232-248, 1970.

5466 ALTERATION OF ENZYME ACTIVITY IN RAT LIVER FOLLOWING THE ACUTE AND CHRONIC ADMINISTRATION OF NICOTINE. *(E.)* Ruddon, R. W. (U. Michigan Med. Sch., Ann Arbor) and A. M. Cohen. *Toxic Appl Pharmacol* 16(3):613-625, 1970.

5467 PREPARATION OF SUSPENSIONS OF SMALL BOWEL MUCOSAL EPITHELIAL CELLS. *(E.)* Weintraub, L. R. (Tufts-New England Med. Ctr., Boston, Mass.) and P. H. Levine. *J Lab Clin Med* 75(6):1026-1029, 1970.

5468 α-CHYMOTRYPSIN: A CASE STUDY OF SUBSTITUENT CONSTANTS AND REGRESSION ANALYSIS IN ENZYMATIC STRUCTURE-ACTIVITY RELATIONSHIPS. *(E.)* Hansch, C. (Dept. Chem., Pomona Coll., Claremont, Calif.) and E. Coats. *J Pharm Sci* 59(6):731-743, 1970.

5469 IMPLICATIONS OF ENZYME INDUCTION IN THERAPEUTICS. *(E.)* Owolabi, T. (U. Toronto, Ontario, Canada). *Univ Toronto Med J* 47(4):121-124, 1970.

5470 CHEMICAL INVESTIGATION OF CATALASE. *(Jap.)* Kuga, H. (Tokyo Med. Dent. U., Japan). *Ochanomizu Med J* 17(3):197-208, 1969.

5471 ULTRASTRUCTURE OF THE WALL OF LIVER SINUSOIDS. *(Rus.)* Zufarov, K. A. (Med. Inst. Tashkent, USSR), V. B. Shneivais and E. K. Shishova. *Arkh Anat* 58(3):66-74, 1970.

5472 ANATOMY OF REFLEX REGULATION OF GASTRIC FUNCTION. *(Rus.)* Chislovsky, K. I. (Kiev, USSR). *Vrach Delo* (3):50-53, 1970.

5473 VARIABILITY OF THE LIVER SECTIONS AND ITS IMPORTANCE IN HEPATECTOMY. *(Rus.)* Mikhailov, G. A. (I. P. Pavlov Med. Inst., Leningrad, USSR). *Vestn Khir* 104(4):43-47, 1970.

5474 LOCALIZATION OF EXTRAHEPATIC BILE DUCTS. *(Rus.)* Popov, S. D. (Leningrad, USSR) and V. A. Maevsky. *Vestn Khir* 104(4):40-42, 1970.

o P:Absorp (5479)(5497)
o P:Motil (5529)
o P:Secr:Stom (5547)(5550)
o P:Secr:Panc (5556)
o P:Secr:Hepatobil (5559)(5564)(5565)(5566)(5568)(5576)(5577)(5578)(5580)(5582)(5586)(5589)(5590)(5591)(5594)(5596)(5599)(5600)(5603)(5605)(5607)(5609)(5610)
o P:Secr:Int (5611)(5613)(5618)(5619)(5624)(5625)
o P:Gen (5637)
o Diagproc (5650)(5658)(5677)(5695)(5714)(5719)(5724)
o D:Stomduo (5763)(5764)(5765)(5780)(5788)(5795)(5811)
o D:Stomduo:Peptulc (5826)(5828)(5847)
o D:S.Intest (5858)(5867)
o D:S.Intest:Malabs (5890)(5891)
o D:L.Intest (5935)
o D:L.Intest:Ulccol (5947)
o D:Pancreas (5952)(5956)
o D:Pancreas:Pancreat (5961)(5970)(5971)
o D:Livbil (5983)(5886)(5987)(5989)(5993)(5994)(5995)(6001)(6002)(6051)
o D:Livbil:A.Nonv.Hep (6054)(6055)(6058)(6059)(6062)(6065)(6069)(6072)(6082)
o D:Livbil:A.V.Hep (6084)(6086)(6090)(6096)(6101)
o D:Livbil:C.Hep (6106)
o D:Livbil:Cirrh (6116)(6124)
o D:Livbil:Gallb (6129)(6154)
o D:Gen (6183)(6190)(6192)(6196)(6202)(6223)(6228)(6229)
o D:Gen:Parasit (6258)(6280)

5475 INTESTINAL ABSORPTION OF CARNOSINE AND ITS CONSTITUENT AMINO ACIDS IN MAN. *(E.)*

Asatoor, A. M. (Westminster Hosp., London, England), J. K. Bandoh, A. F. Lant, M. D. Milne and F. Navab. *Gut* 11(3):250-254, 1970.

The serum levels of β-alanine and L-histidine were compared in two tolerance tests (spaced 2 weeks apart) in normal fasted adults after ingestion of the dipeptide carnosine (β-alanyl-L-histidine) and after equivalent amounts of the constituent free amino acids. Dosage of carnosine was 0.286 mmole/kg body weight, and histidine and β-alanine were taken together in an amount which would be produced by hydrolysis of the carnosine dose. Blood samples were obtained at zero time and at 15, 30, 45, 60 and 90 min after ingestion. The only abnormal symptom noted was a peripheral paresthesia in all subjects, 15 to 45 min after ingestion of carnosine or of the amino acid mixture. Neither β-alanine nor carnosine were found in basal serum specimens, but histidine concentration averaged 11.2 μmoles/100 ml (range: 8.6-17.0). In one typical subject the serum histidine level rose to a peak of 52 μmoles/100 ml, or to nearly 65 μmoles/100 ml, 45 min after ingestion of carnosine or of histidine and β-alanine, respectively. In the same subject, β-alanine serum levels rose to a peak of 40 μmoles/100 ml, or to 50 μmoles/100 ml, 30 min after ingestion of either carnosine or the amino acid mixture. In the period of 15-30 min after ingestion of the test substance, the maximum rate of increase in serum amino acid concentration was 1.25 times as rapid for β-alanine as for histidine in both tolerance tests, and the rate of decline after peaking was greater in β-alanine. The rate of rise in both serum β-alanine and of histidine in the 15-30 min period was 1.45 times as great after the amino acids than after carnosine. Repeated trials on the remaining subjects gave similar responses. It was concluded that absorption of both β-alanine and of histidine is significantly more rapid after ingestion of free amino acids than after ingestion of an equivalent amount of carnosine. The test results from normal subjects were compared with those obtained from a patient with Hartnup disease, in which β-alanine absorption was within normal limits after both carnosine and free amino acid ingestion, while histidine absorption was normal after carnosine, but greatly reduced after ingestion of the free amino acid. Serum histidine rate of increment in the case of Hartnup disease was 0.10 μmoles/100 ml/min after ingestion of the free amino acids, compared with 1.66 ± 0.57 μmoles/100 ml/min as a mean for the 5 normal subjects.

5476 MODIFICATIONS OF THE INTRACELLULAR INORGANIC ION CONTENT IN THE PRESENCE OF L-ALANINE IN THE JEJUNAL MUCOSA OF *TESTUDO HERMANNI HERMANNI* GMELIN. *(E.)*

Gilles-Baillien, M. (Dept. Biochem., U. Liege, Belgium). *Life Sci* 9(10 part 1):585-590, 1970.

When the results obtained in one fragment of the jejunal mucosa of *Testudo hermanni hermanni* Gmelin, set up in plexiglas chambers and incubated on both sides in saline, are compared to the results obtained in the symmetrical fragment incubated in a vial, short-circuiting the preparation (vial) gives lower values for the intracellular concentration of sodium and potassium while the chloride concentration appears to be less affected. When all fragments of jejunal mucosa are incubated for 4 hr in plexiglas chambers, the presence of L-alanine in the mucosal compartment induces a decrease in the intracellular concentration of potassium while sodium and chloride concentrations appear to be unaffected. When L-alanine is present only in the serosal compartment or in both the mucosal and serosal compartments the same result is obtained. Data are in agreement with the hypothesis previously proposed that the increase in the transserosal potential obtained in the presence of L-alanine results from an increase in the permeability to potassium of the serosal border of the epithelium. There was no stoichiometric relation existing between the release of potassium at the serosal border and the transfer of L-alanine through the epithelium; the influx (mucosal ⟶ serosal) of L-alanine is about 10 times greater than the outflux, and the decrease in the potassium concentration is approximately of the same magnitude when L-alanine is present either in the mucosal or in the serosal saline.

5477 EFFECT OF BILE SALTS ON THE GASTROINTESTINAL ABSORPTION OF DRUGS: II. MECHANISM OF THE ENHANCEMENT OF THE INTESTINAL ABSORPTION OF SULFAGUANADINE BY BILE SALTS. *(E.)*

Kakemi, K. (Fac. Pharm. Sci. Kyoto U., Japan), H. Sezaki, R. Konishi, T. Kimura and A. Okita.

The mechanism of the enhancement of the intestinal absorption of sulfaguanidine by bile salts, sodium taurocholate and sodium glycocholate, together with the poor absorbability of the drug itself was investigated, using the *in situ* single loop preparations in male Wistar rats. The effect of bile salts on the absorption of sulfaguanidine is divided into 2 stages: luminal phase and absorptive surface. In the luminal phase, bile salts do not affect sulfaguanidine's apparent partition coefficient to isopentyl alcohol at pH 6.5 (control: 0.280; sodium taurocholate: 0.275; sodium glycocholate: 0.271). Also bile salts do not affect its diffusion constant at pH 6.5 (control: 9.46 x 10^6 cm^2/sec; sodium taurocholate: 8.40 x 10^6 cm^2/sec). The decrease of sulfaguanidine in a dialysis bag was not affected by the presence of 20 mM sodium taurocholate. Sodium taurocholate did not affect the binding of sulfaguanidine to the intestinal mucosa. In an exsorption experiment, as the perfusion solution was changed to 20 mM sodium taurocholate, the exsorption rate of sulfaguanidine was markedly increased (.45 to 1.1 μg/min). In addition, as the bile salt solution was again changed to the simple buffer solution, the exsorption rate reduced to the control rate gradually. The enhancement of the absorption of sulfaguanidine seemingly is caused by the direct action of bile salts to the mucosal membrane, and that the effect was reversible.

5478 COMPARATIVE ASPECTS OF THE RESPONSE OF THE INTESTINE TO ITS IONIC ENVIRONMENT. *(E.)*

Robinson, J. W. L. (Canton Hosp., Lausanne, Switzerland). *Comp Biochem Physiol* 34(3):641-655, 1970.

Sodium ion sensitivity of L-phenylalanine, L-arginine and D-galactose uptake by rat, guinea pig, hamster and toad intestinal slices was compared. When sodium was replaced by potassium there was a drop in the absorption (μmoles/100 mg wet tissue) of phenylalanine, arginine and galactose (0.538 to 0.0468, 0.238 to 0.0380 and 0.209 to 0.0173, resp., for rats; 0.582 to 0.0427, 0.165 to 0.0397 and 0.357 to 0.0100, resp., for guinea pigs; 0.802 to 0.0633, 0.173 to 0.0504 and 0.764 to 0.0195, resp., for hamsters; and 0.410 to 0.0741, 0.186 to 0.0781 and 0.172 to 0.0230, resp., for toads). Replacement of the sodium with choline did not produce as large a drop in phenylalanine, arginine or galactose uptake (0.120, 0.169 and 0.0303, resp., in rats; 0.102, 0.120 and 0.0279, resp., in guinea pigs; 0.136, 0.171 and 0.0342, resp., in hamsters; and 0.782, 0.124 and 0.0281, resp., in toads). Preincubating intestinal tissue in a sodium-free, potassium- or choline-substituted medium prevented accumulation of phenylalanine presumably through an inactivation of the sodium pump but this effect was species-specific (with potassium affecting rats but not guinea pig tissue and choline similarly affecting guinea pig but not rat tissue and both sodium-free media affecting toad tissue). Substituting large anions for chloride also affected phenylalanine uptake by rat intestine with sodium benzene-sulfonate (1.270) lowering the uptake observed with sodium chloride (1.635) and with sodium sulfate lowering it even more (0.908); and with toad intestine the sulfate substitution lowered the chloride ion effect (1.070) to 0.830 while there was no change in the guinea pig.

5479 HISTOLOGICAL REEVALUATION OF EVERTED GUT TECHNIQUE FOR STUDYING INTESTINAL ABSORPTION. *(E.)*

Levine, R. R. (Boston U. Med. Ctr., Mass.), W. F. McNary, P. J. Kornguth and R. LeBlanc. *Europ J Pharmacol* 9(2):211-219, 1970.

The morphology of everted intestinal sacs of rats (utilized in intestinal absorption studies) was examined histologically. Immediately after eversion and preparation of the closed sac, the epithelial cells and villi showed normal architecture but after only 15 min of incubation at 37°C soft and pale tissue with distorted epithelial cells and edema (50-70% of normal epithelium was gone after 1 hr) was evident in tissues from decapitated rats while incubation at 23-24°C decreased the rate of tissue destruction (40-50% destruction after 1 hr). Tissues from rats anesthesized with ether or sodium pentobarbital (40 mg/kg) underwent a much slower destruction (10-15% after 1 hr of incubation) and tissues from golden hamsters incubated at 37°C exhibited interstitial edema but reduced numbers of fractured villi (40% after 1 hr) and at 23°C underwent slower and more moderate changes.

5480 INTERACTIONS BETWEEN LYSINE, Na^+ AND Cl- TRANSPORT IN RAT JEJUNUM. *(E.)*

Munck, B. G. (Inst. Med. Physiol. A., U. Copenhagen, Denmark). *Biochim Biophys Acta* 203(3):424-433, 1970.

Jejunal and ileal everted sac preparations were prepared in male albino rats and the unidirectional flow from the mucosal to the serosal side, and from the serosal to the mucosal side and the net fluxes were measured for L-lysine (10 mM), Na^+ and Cl^-. Transmural potential differences were calculated from the medium resistance and from the tissue resistance between two agar bridges, and from the current needed to reduce the potential difference between the bridges to zero. In the jejunum, in a Cl^- medium, the addition of L-lysine produced an average change of transmural potential difference of 0.3 ± 0.2 mV and a short circuit current of 4 ± 3 μA, compared with an ileal response of a change of potential difference of 0.9 ± 0.6 mV and a short circuit current of 11 ± 5 μA. When the Cl^- medium was substituted for by SO_4^{2-}, the jejunal response rose to the ileal level (potential difference = 1.0 ± 0.3; short circuit current = 12 ± 5 μA), but there was no significant change in the ileal responses. In the short-circuited jejunum, the L-lysine transport was active and Na^+ dependent, and associated with an increase in the net flux of Na^+ from the mucosal to the serosal side, both in Cl^- and in SO_4^{2-} media. In rat jejunum at a normal Na^+ concentration, a lysine concentration of 10 mM produced a significant L-lysine net flux of 0.22 ± 0.13 $\mu mole \cdot h^{-1} \cdot cm^{-2}$ in Cl^- medium, and 0.16 ± .008 $\mu moles \cdot h^{-1} \cdot cm^{-2}$ in SO_4^{2-} medium. Substitution of choline for Na^+ reduced the net flux to zero, resulting in an L-lysine net flux of -0.01 ± 0.02 $\mu mole \cdot h^{-1} \cdot cm^{-2}$. With the short-circuited jejunal preparation, L-lysine also increased the net flux of Cl^- from the mucosal to the serosal side, while in the short-circuited ileal preparation lysine did not influence the Cl^- net flux. In the absence of lysine the short-circuited jejunum exhibited a significant net Cl^- flux.

5481 AUTORADIOGRAPHIC INVESTIGATIONS OF THE DISTRIBUTION OF METALLIC ISOTOPES IN THE INTESTINE OF EXPERIMENTAL ANIMALS. A CONTRIBUTION TO THE ELIMINATOR FUNCTION OF PANETH'S CELLS. *(Ger.)*

Halbhuber, K. J. (Anat. Inst. Friedrich Schiller U., Jena, Germany), H. J. Stibenz, U. Halbhuber and G. Geyer. *Acta Histochem* 35(2):307-319, 1970.

The function of Paneth cells in the elimination of radioactive labeled metals (^{65}Zn, ^{60}Co, ^{203}Hg, ^{210}Pb, and ^{45}Ca) was studied in female rats, mice, guinea pigs, golden hamsters, and rabbits. Following the administration of $^{65}ZnCl_2$, the distribution Paneth cells was highest in the rat (5^+), moderate in the guinea pig and rabbit (2^+), and low in the mouse (+) with none in the hamster. ^{60}Co was localized in the Paneth cells (5^+) and goblet cells (+) of rats; Paneth cells ($2^+/3^+$), goblet cells (+) and Brunners's cells (+) of guinea pigs; goblet cells of the hamster (+); and Paneth cells (+) and goblet cells (+) of the mouse. $^{203}HgCl_2$ was distributed in the Paneth cells of the rat (4^+), guinea pig ($2^+/3^+$) and mouse (2^+), and ^{210}Pb was found in the Paneth cells of the rat (5^+), guinea pig (3^+) and mouse ($+/2^+$). ^{203}Hg and ^{210}Pb were also found in the pancreas, parotid gland and large intestine goblet cells and crypt cells in rats, guinea pigs, mice and hamsters. The Paneth cells of the small intestine seemingly play an important role in the elimination of metals.

5482 THE DIGESTION AND ABSORPTION OF PROTEIN IN MAN: I. THE SITE OF ABSORPTION. *(E.)*

Nixon, S. E. (Stracathro Hosp., Angus, Scotland) and G. E. Mawer. *Brit J Nutr* 24(1):227-240, 1970.

The absorption of amino acid components of two protein-containing test meals (15 g milk protein and 15 g gelatin) was studied in six healthy volunteers. In a control experiment a meal was given which contained a negligible amount of protein. The subjects were intubated with a single lumen tube, each meal was swallowed and intestinal residues were obtained from known levels. The amino acid composition of the intestinal contents was compared with that of the original meal and correction was made for net water shifts by reference to a non-absorbable marker compound (polyethylene glycol 4000). At least 70-75% of the milk protein test meal was absorbed when the sampling holes were 230 cm from the nose; most, if not all, of the meal was absorbed when the sampling holes were 140 cm from the nose. Amino acids were absorbed at rates proportional to their concentrations in the meal and gelatin was poorly absorbed from the region of the small intestine under study. Estimates of the amount of endogenous protein secreted in response to the test meals ranged from 2 to 8 g, equivalent to 13-53% of the protein containing test meals. The absorption of certain amino acids (the dicarboxylic amino acids) was more rapid than was expected; glutamic and aspartic acids were absorbed slowly from a mixture of amino acids, both *in vitro* and *in vivo*.

5483 THE DIGESTION AND ABSORPTION OF PROTEIN IN MAN: II. THE FORM IN WHICH DIGESTED PROTEIN IS ABSORBED.

(E.) Nixon, S. E. (Stracathro Hosp., Angus, Scotland) and G. E. Mawer. *Brit J Nutr* 24(1):241-258, 1970.

The mechanism of absorption of amino acids following a protein test meal and their rate of release in intestinal contents was studied in human subjects by determining amino acid levels in intestinal juice aspirated from various levels following a milk-protein meal. After fractionation and hydrolysis, fraction I demonstrated 2.5 μmoles/ml amino acid content after the low-protein meal and up to 8.5 μmoles/ml after the milk meal, compared to a 2.5-5.5 μmoles/ml range after the gelatin meal in fraction II. Lysine, valine, arginine, tyrosine, phenylalanine and methionine were completely digested and absorbed in the intestine. After 80 min incubation, over 90% of the acidic amino acids were peptide-linked. Glycine, threonine, serine and the amino acids' breakdown during incubation was not sufficiently rapid to allow for absorption in the free form.

5484 THE RELATIONSHIP BETWEEN MUCOSAL IRON AND IRON ABSORPTION IN THE GUINEA PIG.

(E.) Pollack, S. (Albert Einstein Coll. Med., Bronx, N.Y.) and T. Campana. *Scand J Haemat* 7(3):208-211, 1970.

Iron absorption and intestinal mucosal iron content was studied in 55 guinea pigs divided into iron-loaded and bled groups. Iron absorption was increased approximately 6-fold in bled guinea pigs as compared to control animals and the non-heme iron content of mucosal homogenates obtained from iron-loaded and bled animals was virtually identical. The hemeglobin contribution to the total iron of the homogenates was a maximum of 30% and the hemoglobin contribution to the total mucosal iron (heme + non-heme) was 0.08 ± 0.02 μg Fe/mg protein for the iron-loaded guinea pigs, and 0.04 ± 0.02 μg Fe/mg protein for the bled guinea pigs. There was no decrease in the iron content in the mucosa of the guinea pigs bled to produce a 6-fold increase in iron absorption. The iron content of the mucosa seemingly is not directly responsible for regulating iron absorption in the guinea pig.

5485 CURARE-LIKE AGENTS: RELATION BETWEEN LIPID SOLUBILITY AND TRANSPORT INTO BILE IN PERFUSED RAT LIVER.

(E.) Meijer, D. K. F. (Dept. Pharmacol., U. Groningen, Netherlands) and J. G. Weitering. *Europ J Pharmacol* 10(2):283-289, 1970.

Isolated perfused rat livers from male Wistar rats were used to study the biliary excretion of 6 bisquaternary ammonium compounds (alcuronium, dimethyltubocurarine, gallamine, hexafluorenium, pancuronium and d-tubocurarine). Thin-layer chromatography of bile samples showed that alcuronium, gallamine and pancuronium had a very low rate of excretion into the bile whereas hexafluorenium and d-tubocurarine appeared in the bile in much larger amounts. Extraction of these agents from aqueous solutions into octanol showed that insignificant amounts of alcuronium, dimethyl-tubocurarine and pancuronium were extracted while a low percentage of gallamine appeared in the organic phase. Only hexafluorenium and d-tubocurarine could be extracted from Krebs-Ringer solutions (pH 7.4) to a large degree indicating lipid solubility was high in spite of the polar nature of the drugs. Distribution of d-tubocurarine was influenced by the pH of the aqueous solutions; the concentration in octanol was very low at pH 5.0 and increased when the pH was raised. Extraction percentages increased parallel with the theoretical dissociation of a -OH group with a pK_a of 8.1; extraction of dimethyltubocurarine was very low at pH 5.0 and 7.4. Extraction percentages were considerably lower when the partition was performed with phosphate buffers instead of the Krebs solutions, especially in the case of hexafluorenium (51% for Krebs, pH 8.1; 3% for phosphate, pH 8.3).

5486 QUANTIFICATION OF THE BINDING TENDENCIES OF CHOLESTYRAMINE: III. RATES OF ADSORPTION OF CONJUGATED BILE SALT ANIONS ONTO CHOLESTYRAMINE AS A FUNCTION OF ADDED INORGANIC ELECTROLYTE CONCENTRATION, TEMPERATURE, AND AGITATION INTENSITY.

(E.) Johns, W. H. (Sch. Pharm., U. Connecticut, Storrs) and T. R. Bates. *J Pharm Sci* 59(6):788-793, 1970.

Studies of *in vitro* adsorption rates of conjugated bile salt anions to cholestyramine as a function of added inorganic electrolyte concentrations, temperature and agitation intensity were made in order to simulate the *in vivo* situation existing in the small intestine. A second-order kinetic model was found to represent the interaction data most suitably. The rate constants for the adsorption process decreased in the presence of increasing concentrations of sodium chloride, the reductive effect being more pronounced with the trihydroxy conjugates than with the dihydroxy

lerivative. Langmuir affinity constants paralleled
the apparent second order rate constants for systems
levoid of added inorganic electrolyte. The tempera-
ture studies showed that the calculated apparent
energies of activation indicated the existence of a
substantially lower energy barrier to the binding of
the dihydroxy glycine-conjugated derivative, glyco-
leoxycholate, than for its trihydroxy counterpart,
the glycocholate anion and variation in the intensity
of agitation had a more pronounced effect on the rate
of uptake of the glycodeoxycholate anion by the resin
han on the glycocholate anion. A log-log relation
existed between the second order interaction rate
onstant and the speed of agitation. The binding of
ile salt anions to cholestyramine apparently occurs
y means of a diffusion-controlled process.

487 AN *IN VITRO* MODEL FOR DRUG ABSORPTION
STUDIES. *(E.)* Robertson, J. S. (Dept.
harm., U. Sydney, Australia) and O. Bode. *J Pharm
harmacol* 22(6):423-426, 1970.

n *in vitro* experimental model for the kinetics of
ransfer of salicylic acid and some sulfonamides
rom an aqueous phase of pH 2 or pH 5 through an
ntervening organic phase to an aqueous phase of
H 7.4 was determined. The manner of operation of
his rotating cell promotes rapid drug transfer
ithout vortexing or emulsification of the phases.
alicylic acid (pK_a 2.97) was readily transferred
rom an aqueous phase of pH 2, through a cyclohexane
ayer to an aqueous phase of pH 7.4, where it was
lmost entirely ionized and trapped. The rate of
ransfer of the drug showed the anticipated pH depen-
ence; the concentration of unionized drug at pH 5
eing approximately 1%. Addition of 1% v/v octan-
-ol to the cyclohexane markedly increased the rate
f transfer indicating the influence of the polarity
f the organic phase. The results of transfer stud-
es using sulfacetamide showed it to behave similarly
 salicylic acid, whereas with both sulfadiazine and
lfadimidine there was a greater amount of drug
ansported at pH 5 than at pH 2. The apparatus de-
ribed apparently is satisfactory for studying the
ansport of drug molecules between aqueous phases
a a lipid phase.

88 CHANGES IN THE INORGANIC ION CONTENT OF
THE JEJUNUM MUCOSA IN CONDITIONS CAUSING
DIFICATIONS OF THE TRANSFER OF L-ALANINE (*TESTUDO
RMANNI HERMANNI* GMELIN). *(E.)* Gilles-Baillien,
 (Dept. Biochem., U. Liege, Belgium) and E.
hoffeniels. *Life Sci* 9(10 part 1):591-599, 1970.

mmetrical fragments of epithelium of the jejunum
cosa of *Testudo hermanni hermanni* Gmelin were
cubated in plexiglas chambers, and either bathed
 both sides by the usual saline and serving as a
ntrol or submitted to various changes in the
mposition of either the mucosal or the serosal
line. When 9/10 of sodium chloride in the mucosal
line was replaced isosmotically by sucrose the
dium and chloride content of the jejunum mucosa
s either not affected or affected very little,
t in contrast, the potassium concentration was
creased. When sodium chloride replacement occurred
 the serosal saline or in both salines, there was
again an increase in the potassium concentration, though generally less than in the first case and sodium and chloride were tremendously decreased. When 9/10 of the sodium ions were replaced in the mucosal saline by Tris ions, no modification at all was observed in the inorganic ion content. When 9/10 of the sodium ions were replaced in the serosal saline by Tris ions, an important decrease in the sodium concentration occurred while potassium and chloride concentrations were far less affected; however, there was generally a slight decrease in potassium and a slight increase in chloride. When 9/10 of sodium ions were replaced by Tris ions in both mucosal and serosal salines, there was also a very important decrease in the sodium content but potassium and chloride concentrations were not affected. When all chloride anions were replaced in equivalent amounts by sulphate anions no change occurred in sodium and potassium concentrations and the chloride content was tremendously decreased.

5489 SODIUM DEPENDENCY OF L-ALANINE ABSORPTION IN CANINE THIRY-VELLA LOOPS. *(E.)* Fleshler, B. (Case Western Reserve Sch. Med., Cleveland, Ohio) and R.A. Nelson. *Gut* 11(3):240-244, 1970.

L-Alanine absorption was studied in 7 dogs with Thiry-Vella intestinal loops injected with solutions containing L-alanine (10 or 50 mM), sodium (0, 74, or 145 mEq/l), and mannitol for 10 min; similar studies were performed for 5-min periods with solutions containing 50 mM L-alanine and either 0 or 140 mEq/l sodium. L-Alanine absorption at both 10 and 50 mM was significantly lower in solutions containing no sodium than in solutions with sodium. The absolute amount of L-alanine absorption was 74% and 63% for the 10 and 50 mM concentrations, resp., when the initial sodium concentration was zero. There was a shift of sodium into the luminal fluid when the initial sodium concentrations were 0 and 74 mEq/l; at 145 mEq/l, there was a net absorption of sodium with no change in luminal concentration. Exsorption was relatively constant regardless of sodium or L-alanine concentrations. Insorption rates for sodium were significantly lower from sodium-free solutions. At the 10 mM L-alanine level, insorption was increased only slightly when the initial sodium concentration was increased from 74 to 145 mEq/l; at 50 mM L-alanine, the increase in sodium was much more marked. Water secretion from the body pool into the gut lumen occurred at 0 and 74 mEq/l sodium; at 140 mEq/l, water secretion was in reverse proportion to absorption. In the 5-min study periods, significantly less L-alanine was absorbed from sodium-free solutions. The absolute amount of L-alanine absorbed from the sodium-free solution was 81% of that absorbed from the 140 mEq/l solution. Sodium concentration changes and water movement were similar to the 10 min test periods.

5490 INTESTINAL ABSORPTION OF HEMOGLOBIN IRON. *(E.)* Wheby, M. S. (U. Virginia Sch. Med., Charlottesville), G. E. Suttle and K. T. Ford, III. *Gastroenterology* 58(5):647-654, 1970.

Intestinal absorption of hemoglobin iron was studied after intragastric doses of ^{59}Fe hemoglobin or ferrous sulfate in iron-deficient and iron-loaded rats. More iron was absorbed from ferrous sulfate than from hemoglobin in both the iron-deficient (57% and 20%, resp., of the administered dose) and the iron-loaded (7% and 2% resp.) animals; deferioxamine (650 µg) premixed with the labeled hemoglobin iron (100 µg) did not change the absorption of iron-deficient animals indicating that the iron is not split from hemoglobin in the lumen of the rats. In duodenal loop studies after a dose of labeled hemoglobin (100 µg) no difference was found in the amount of heme split from hemoglobin in the lumen or in the amount of radioactive heme in the mucosa after 3 hr, but the iron-deficient rats had a more active heme-splitting mechanism (6.8% of the dose) than the iron-loaded rats (3.6%) and transported more iron (but no heme) from the mucosa into the carcass (5.4% compared to 1.7%). Activity for heme splitting, mucosal heme uptake and iron transport into carcass was greatest in the duodenum, decreased in the jejunum and was least in the ileum.

5491 EFFECTS OF FASTING ON INTESTINAL TRANSFER OF SUGARS AND AMINO ACIDS *IN VITRO*. *(E.)*

Newey, H. (Dept. Physiol., U. Sheffield, England), P. A. Sanford and D. H. Smyth. *J Physiol* 208(3): 705-724, 1970.

The effects of fasting on *in vitro* transfer of sugars and amino acids and on glucose metabolism were studied in everted sacs of jejunum and ileum in the rat. Mucosal transfer, serosal transfer and final serosal concentration were the parameters used for assessing transfer except for glucose, where metabolism was measured as the amount disappearing from the system during incubation and transfer determined from the difference between initial and final amount of glucose in mucosal fluid. The fasted rats with an initial weight of 240 to 260 g lost 46 g on the average, while the controls gained 5 g. The sac weights from the fasted animals also showed lower weight, the percent difference ranging from 20 to 36%. Mucosal transfer of glucose was considerably diminished by fasting at glucose concentrations of 7.5 and 28 mM while serosal transfer was enhanced (22-505%) at the lower concentration, with equivocal results at the higher glucose level especially in distal ileum. Fasting was found to depress (12-56%) glucose metabolism at all gut levels except distal ileum. Proline transfer in fasted animals was increased in the absence of glucose, whereas with glucose (7.5 mM) present reduced transfer occurred.

5492 EFFECT OF BILE ACID DECONJUGATION ON THE FECAL EXCRETION OF STEROIDS. *(E.)*

Kellogg, T. F. (Lobund Lab., U. Notre Dame, Indiana), P. L. Knight and B. S. Wostmann. *J Lipid Res* 11(4):362-366, 1970.

Total bile acid and neutral sterol fecal excretion were examined after saponification and thin layer chromatography in adult germfree and gnotobiotic (*Clostridium perfringens*-associated) rats. Total bile excretion (mg/kg/day) was 7.1 in the gnotobiotic animals with all the bile acids unconjugated and 11.3 in the germfree rats with all the acids conjugated with taurine. Cholic and α-muricholic acids were essentially evenly represented in both groups but β-muricholic acid was lower in the gnotobiotic group (23.6%) than in the germfree group (60.5%). The percentage of bacterially-modified bile acids excreted was lower in the gnotobiotic group (34.3%) than in the germfree group (57.7%) but total neutral sterol excretion was the same in amount (12.7 compared to 12.8 mg/kg) and character.

5493 STIMULATION OF AMINO ACID TRANSPORT IN RAT LIVER SLICES BY EPINEPHRINE, GLUCAGON, AND ADENOSINE 3',5'-MONOPHOSPHATE. *(E.)*

Tews, J. K. (Dept. Biochem., U. Wisconsin, Madison), N. W. Woodcok and A. E. Harper. *J Biol Chem* 245(11):3026-3032, 1970.

Amino acid transport in rat liver slices (Holtzman male albino rats) prepared from animals injected with hydrocortisone acetate, epinephrine, or glucagon, as well as amino acid transport modification in untreated rat slices by the addition of glucagon or epinephrine to the incubation medium were studied. Net transport of α-aminoisobutyric acid was increased in liver slices prepared from rats injected with hydrocortisone epinephrine, or glucagon (4.53 ± .21, 6.93 ± .50, 9.38 ± .47, resp.). When slices from untreated animal were initially incubated for 15 min with glucagon or cyclic AMP, subsequent uptake of α-aminoisobutyric aci was greater (30% and 40%, resp.) than in control experiments; epinephrine was without effect. Extended preliminary incubation with glucagon or cyclic AMP preceding the final incubation with aminoisobutyric acid potentiated the net increase in uptake 4 to 6 times that seen with a short preliminary incubation. 1-Aminocyclopentane-carboxylic acid transport in live slices *in vitro* was stimulated by glucagon, cyclic AMP, and epinephrine; therefore, these agents may directly affect hepatic amino acid transport *in vivo*. Aminoisobutyric acid uptake was relatively high (6.22 ± .16) in control liver slices after preliminary incubation for extended periods in Krebs-Ringer buffer alone and this effect was blocked by initially incubating the tissue in an ice bath (3.19 ± .14) or with cycloheximide (3.85 ± .16); actinomycin D was less effective. These drugs also inhibited cyclic AMP-induced stimulation of aminoisobutyric acid transport Amino acid analyses of extracts of incubated slices provided little evidence that exchange diffusion is o major significance in stimulation of aminoisobutyric transport by cyclic AMP.

5494 THE SIMULTANEOUS EMPTYING AND ABSORPTION OF ETHANOL FROM THE HUMAN STOMACH. *(E.)*

Cooke, A. R. (Roy. Prince Albert Hosp., Camperdown, Australia). *Amer J Dig Dis* 15(5):449-454, 1970.

Test meals of 350 ml containing phenol red and ethan (60 mg/ml) were instilled into the stomachs of 7 healthy subjects in order to study the emptying and absorption of ethanol from the stomach. Emptying wa allowed to proceed normally and the gastric contents were aspirated at different intervals on different days. Emptying was compared to water meals of equal volume containing no ethanol and emptying and absorption of 6% ethanol by the stomach were measured simultaneously at 5-min intervals up to 30 min. Emptying of 6% ethanol was exponential and did not differ significantly from that of water. About 85% of an ethanol meal and 90% of a water meal had left the stomach by 30 min and the amount of ethanol absorbed was related directly to the time present in he stomach. At 30 min, 6.42 g or about 8 ml of absolute ethanol was absorbed and less than 3 ml was left in the stomach and during this period about 16 ml of absolute ethanol had emptied from the stomach. The mean coefficient of ethanol absorption was .7 ml/min, and this was constant throughout the 30 min period. Acid output in response to ethanol eals was equal to that in response to water meals.

495 A CRITICAL STUDY OF THE CONCEPT OF MAXIMAL BILIARY TRANSPORT OF SULFOBROMOPHTHALEIN BSP) IN THE WISTAR RAT. *(E.)* Dhumeaux, D. (Hosp. eaujon, Clichy, France), P. Berthelot, A. M. Preaux, . Erlinger and R. Fauvert. *Rev Europ Etud Clin iol* 15(3):279-286, 1970.

aximal biliary transport of BSP in 41 rats with canulated bile ducts was examined by spectrophotometry, hromatography and bile salt determinations. BSP when nfused at rates 280 to 418 μg/min/100 g during 130 to 50 min exceeding the maximal biliary excretion rate, rogressively decreased (49±28%) the bile flow. BSP 282 to 325 μg/min/100 g) produced a decrease in ile salt output in bile (-80.8±12.8%). Sodium deydrocholate infusion (471 nmoles/min/100 g) increased oth bile flow (62%) and BSP excretion in bile (22%). here was a highly significant correlation between aximal excretion rate of BSP and initial bile flow $P < 0.001$).

496 THE PERIPHERAL ARTERIO-VENOUS DIFFERENCE OF SULFOBROMOPHTHALEIN CONCENTRATION. *(Fr.)* arbier, F. (U. Hosp., Ghent, Belgium), J. Versieck nd J. Tasson. *Rev Europ Etud Clin Biol* 15(3):294-98, 1970.

P was administered to 50 normal subjects (10 by nfusion, 40 by i.v. injection into the antecubital ein) to test for the existence of a peripheral teriovenous difference in BSP concentration. Arrial and venous samples were taken every 4 min ring the perfusion (18.75 mg/min for 20 min) and r 16 min afterward, and every 4 min for 44 min folwing a 5 mg/kg i.v. injection. The peripheral teriovenous circulatory delay resulted in a delayed pearance of a given brachial arterial concentration the antecubital vein. This accounted for a higher terial level during rising plasma concentration and higher venous level during falling plasma concenation. A higher infusion rate increased the A-V ncentration difference during a rising plasma contration. The i.v. injection of BSP produced a crease in A-V concentration difference when the sappearance rate of the dye from the plasma was ow. In one third of the cases the A-V concentration fference diminished steadily and the venous concenation curve finally crossed that of the arterial to 28 min after the injection.

5497 CLINICAL SIGNIFICANCE OF INTRALUMINAL pH IN INTESTINAL AMMONIA TRANSPORT. *(E.)* Price, J. B. (Coll. Physicians Surgeons, Columbia U., New York, N.Y.), M. Sawada and A. B. Voorhees, Jr. *Amer J Surg* 119(5):595-598, 1970.

5498 THE REGULATION OF MEMBRANE DIGESTION AND TRANSPORT PROCESSES. *(Rus.)* Ugolev, A. M. (Leningrad, USSR). *Fiziol Zh SSSR Sechenov* 56(4):651-662, 1970.

5499 DETERMINATION OF FECAL FATS CONTAINING BOTH MEDIUM AND LONG CHAIN TRIGLYCERIDES AND FATTY ACIDS. *(E.)* Jeejeebhoy K. N. (Dept. Med., U. Toronto, Ontario, Canada), S. Ahmad and G. Kozak. *Clin Biochem* 3(2):157-163, 1970.

5500 INORGANIC IONS AND TRANSFER OF NEUTRAL AMINO ACIDS ACROSS THE ISOLATED INTESTINAL EPITHELIUM OF THE TORTOISE *TESTUDO HERMANNI HERMANNI* GMELIN. *(E.)* Gilles-Baillien, M. (Dept. Biochem., U. Liege, Belgium). *Arch Int Physiol Biochim* 78(1):119-130, 1970.

5501 EFFECT OF MESENTERIC BLOOD FLOW ON INTESTINAL DRUG ABSORPTION. *(E.)* Barletta, M. A. (St. John's U., Coll. Pharm., Jamaica, N. Y.) and C. O. Ward. *J Pharm Sci* 59(6):878-880, 1970.

5502 EFFECT OF POLYSORBATE 80 AND OLEIC ACID ON DRUG ABSORPTION FROM THE RAT INTESTINE. *(E.)* Levy, G. (Sch. Pharm., St. U. New York, Buffalo) and A. Perala. *J Pharm Sci* 59(6):874-875, 1970.

5503 CORRELATION BETWEEN BEHAVIOR OF TAURINE OR GLYCINE AND ITS ACCELERATIVE EFFECT ON ABSORPTION OF SALICYCLIC ACID DERIVATIVES IN RAT GASTROINTESTINAL TRACT. *(Jap.)* Morisaka, K. (Osaka Coll. Pharm., Japan) and Y. Nakamoto. *J Pharm Soc Jap* 90(5):634-639, 1970.

5504 DIGOXIN ABSORPTION BY THE PERFUSED INTESTINAL COIL OF THE RAT. *(Ger.)* Ruiz-Torres, A. (Med. Clin. Polyclin., Free U. Berlin, Germany) and J. Ohlmeier. *Arzneimittelforschung* 20(4):522-524, 1970.

5505 ABSORPTION OF ORAL CHELATED IRON. *(E.)* Princiotto, J. V. (Georgetown U. Sch. Med. Dent., Washington, D.C.), E. J. Zapolski, D. H. Bagley, Jr., A. Laskey, R. Morgan and M. Rubin. *Biochem Med* 3(4):289-297, 1970.

o P:Morph (5449)(5455)(5467)
o P:Motil (5514)(5527)
o P:Secr:Int (5615)(5617)
o P:Gen (5634)(5639)
o Diagproc (5648)
o D:S.Intest (5855)(5865)
o D:S.Intest:Malabs (5888)(5897)
o D:L.Intest:Ulccol (5951)
o D:Livbil (5980)(5982)(5989)
o D:Livbil:Cirrh (6112)(6114)
o D:Gen (6160)(6202)(6240)
o D:Gen:Parasit (6275)

5506 AN IMPROVED METHOD FOR STUDYING THE PERISTALTIC REFLEX IN THE ISOLATED COLON. *(E.)*

Frigo, G. M. (Dept. Pharmacol., U. Pisa, Italy) and S. Lecchini. *Brit J Pharmacol* 39(2):346-356, 1970.

An improved method of studying the peristaltic reflex was used in the guinea pig or cat isolated colon with a graded localized intraluminal stimulus consisting of a solid bolus. Advantages of this method are: 1) the stimulus is similar to that occurring physiologically in the colon, 2) the reflex can be elicited in various parts of preparation and thus allow a study of the effects of localized changes (example, removal of mucous membrane), 3) the behavior of circular musculature in relation to bolus position can be studied since solid bolus is propelled only when ascending contraction and descending inhibition occurs, 4) propulsive activity can be evaluated quantitatively. Velocity of propulsion, which is a reliable measure of propulsive activity, is dependent on degree of distention. In the guinea pig preparation, the average distention, which caused maximal velocity of propulsion, corresponded to 0.11 ± 0.0029 ml H_2O (82 experiments) injected into a balloon. Mean velocity at threshold volume was 0.55 ± 0.029 mm/sec (75 experiments), while mean maximal velocity was 1.51 ± 0.061 mm/sec (82 experiments). In the cat, mean threshold value of distention was 0.67 ± 0.016 ml (35 experiments). As in the guinea pig, velocity of propulsion increased when degree of distention was increased. Average distention causing maximal velocity was 1.64 ± 0.068 ml (42 experiments), while mean velocity was 0.38 ± 0.057 mm/sec (35 experiments) at threshold volume and maximal velocity was 1.08 ± 0.099 mm/sec (42 experiments). In the guinea pig, lowering of temperature progressively increased latent period and threshold of distention and it decreased rate of propulsion and degree of shortening of longitudinal muscle. Stimulation of pelvic nerves enhanced propulsive activity in both guinea pig and cat, while stimulation of periarterial nerves impaired propulsive contraction in both species. Since the peristaltic reflex could not be elicited from areas from which mucosal and submucosal layers had been removed, these layers are essential for triggering of peristaltic reflex and for propulsion of solid contents in colon.

5507 EFFECT OF INFUSION ON FORCE OF CLOSURE MEASUREMENTS IN THE HUMAN ESOPHAGUS. *(E.)*

Pope, C. E. II (VA Hosp., Seattle, Wash.). *Gastroenterology* 58(5):616-624, 1970.

Measurement of the pressure of peristaltic waves in the human esophagus was evaluated for accuracy and precision of wave patterns and amplitudes by using an infused catheter on 11 normal subjects and 36 patients with heartburn and/or dysphagia, alcoholism or diabetes. In a model constructed to compare actual pressure with the recorded pressure, infusion permitted accurate pressure tracings while uninfused catheters recorded pressures of from 30 to 80 mm Hg lower, but the rate of infusion was found to be critical with lower rates (0.8 to 14 µl/sec) causing plateau wave forms with increasing mean values as the rate increased, until at 40 µl/sec model pressure changes were accurately recorded. Using the infused catheter on normal subjects revealed a variation in pressure amplitudes between swallows (so that a mean of 5 readings was used), between locations along the length of the esophagus, and between normal individuals (although readings taken 3 times at 2 week intervals on the same individuals are fairly constant). Only 2/36 patients with esophageal symptoms had pressure tracings significantly different from those of the normal group.

5508 A PHARMACOLOGICAL ANALYSIS OF THE PERISTALTIC REFLEX IN THE ISOLATED COLON OF THE GUINEA-PIG OR CAT. *(E.)*

Crema, A. (Dept. Pharmacol., U. Pisa, Italy), G.M. Frigo and S. Lecchini. *Brit J Pharmacol* 39(2):334-345, 1970.

Segments of guinea-pig and rat large intestine were used to study pharmacological effects on the intact and denervated isolated colon. A localized intraluminal stimulus was used to elicit the colonic peristaltic reflex. The beginning of the propulsive movements was preceded by the contractile response of the longitudinal muscular coat. Tetrodotoxin, added to the bath containing the guinea-pig colon or infused in the arteries supplying the cat colon, inhibited all the components of the peristaltic reflex although the spontaneous motility of the preparations was only slightly affected. Bretylium (25 µg/ml) or piperoxan and propranolol (both 1 µg/ml) did not abolish the inhibitory response in the guinea-pig colon. Hexamethonium (10-50 µg/ml) also abolished all the components of the peristaltic reflex as did pentolinium (10-50 µg/ml). The longitudinal and circular reflex contractions in the guinea-pig were usually resistant to antimuscarine, antihistamine and antitryptamine drugs while in the cat they were abolished by antimuscarine drugs. Atropin and hyoscine impaired propulsion by selectively blocking the descending inhibition. Propulsive activity was not affected by sympathetic denervation and pretreatment with reserpine, but it was facilitated by pelvic nerve stimulation.

5509 INTESTINAL SMOOTH MUSCLES: DEMONSTRATION OF CATECHOLAMINE-INDUCED CONTRACTION MEDIATED THROUGH ALPHA-ADRENERGIC RECEPTORS. *(E.)*

Gagnon, D. J. (Ctr. Hosp. U., U. Sherbrooke, Quebec, Canada). *Europ J Pharmacol* 10(2):297-300, 1970.

Electronic recordings were made of the action of catecholamines on the isolated rat colon and its alteration by beta-blockade. Adrenaline, noradrenali and isoprenaline (3×10^{-9} to 1×10^{-7} g/ml) evoked dose-related relaxations when applied to the isolated colon. Noradrenaline was made more effective th adrenaline, especially at lower doses. Propranolol and trasicor (1×10^{-6} to 1×10^{-5} g/ml) prevented the typical inhibitory effect of the catecholamines and in the case of adrenaline and noradrenaline, completely reversed their effect producing dose-related contractions of the isolated colon. There wa no significant difference in the contractions produced by adrenaline and noradrenaline, although adr aline was slightly more potent than noradrenaline. Beta-blockade only prevented the isoprenaline-induced relaxations. Phentolamine (7.5×10^{-7} to 1×10^{-6} g/ml), depending on the dosage, completely prevented or greatly diminished the contractions in duced by adrenaline and noradrenaline after trasico Alpha receptors in the colon seemingly have a stimulating action.

5510 SEROTONIN AND INTESTINAL MOTILITY. *(E.)*

Hiatt, R. B. (Coll. Physicians Surgeons, Columbia U., New York, N. Y.), I. Goodman and N. I. A. Overweg. *Amer J Surg* 119(5):527-529, 1970.

The effects of Coherin (a hormome-like polypeptide from the posterior pituitary which has a powerful effect on intestinal motility) on intestinal reactivity to intraluminally administered serotonin was studied in 3 awake, trained dogs with fully functional Biebl loops. Serotonin (1 ml, 10^{-3} M) rarely produced changes in electromotor activity. Coherin (0.003 mg/kg, i.v.) produced increased voltage and coherence of the electrical pattern; increased motor activity was inconstant. When both Coherin and serotonin were given, there was a marked increase in electromotor activity with greatest effect seen when serotonin was given 70 min after Coherin. Stimulation of the mucosa with a 3 ml balloon inserted into the proximal portion of the loop produced the same results as serotonin in the Coherin-treated dogs. Similar results were obtained throughout the intra-abdominal alimentary canal including the stomach and the rectum. Marked motor activity could be demonstrated to coincide with the electrical patterns produced by a combination of intraluminal serotonin and i.v. Coherin.

5511 MEASUREMENT OF INTESTINAL TONUS. *(E.)*

Fleisher, D. R. (Ctr. Hlth. Sci., Los Angeles, Calif.). *Gastroenterology* 58(5):685-691, 1970.

ntestinal tonus was measured by examining the wall ension produced by distension (produced at a constant ate of inflow) using the equation for circumferential ension ($T \propto P\sqrt{T}$) in a latex viscus of variable wall hickness, in intact dog colon before and after morhine administration (0.3 mg/kg i.v.) and in isolated abbit colon before and after infusing sodium odoacetate (0.001 M). Previous methods of assessing olon tone (Lipkin et al. and Hopkins) proved indequate because erratic resistance curves or volume actor problems resulted, but using the constant inlow on a latex viscus revealed direct proportionality etween wall tension and thickness although the tenion produced was not dependent on the rate of inflow. n dog colon, the tension was rate-dependent (after nfusing approximately 65 ml tension was 75 μ at 56.8 ml/min compared to 50 μ at 31.4 ml/min) and orphine increased the tension capacity (75 μ before orphine to 410 μ after 65 ml at 156.8 ml/min) as ell as the tension differential between the rapid ate of infusion and the slower rate (difference 25 efore morphine and 160 after). In the isolated rabit colon, tension was again rate-dependent but the odoacetate decreased the tension capacity (210 μ o 55 μ after infusing 9.5 ml) as well as the tenion differential between the rapid and slow infusion ates (difference 135 before iodoacetate to 30 after). he size of the tension differential was related diectly to the level of tonus.

512 REACTIVITY OF THE DIGESTIVE TRACT TO PROSTIGMINE IN EXPERIMENTAL ANIMALS. *(E.)*

edzierska, L. Med. Sch., Wroclaw, Poland). *Arch mmun Ther Exp* 18(2):258-266, 1970.

he reactions of consecutive segments of the isolated igestive tract to prostigmine were studied by the method of Magnus in rabbits, guinea pigs and rats. Prostigmine generally increased tone and amplitude of contractions in most of the segments studied in the guinea pig (amplitude was unchanged in the ascending colon or taenia segments and diminished in the descending colon segment) and in the terminal segments of the small intestine in the rat while the tone but not the amplitude was increased in rabbits. The effect of prostigmine was exerted mainly on the longitudinal muscles and the effect was not always proportional to concentration in rats and rabbits.

5513 THE EFFECT OF TERBUTALINE (PINN) 1-(3,5-DIHYDROXYPHENYL)-2-(t-BUTYLAMINO)-ETHANOL ON THE CHOLEDOCHODUODENAL SPHINCTER. *(E.)*

Liedberg, G. (Dept. Surg., U. Lund, Sweden) and C. G. A. Persson. *Experientia* 26(4):388-389, 1970.

Pressure measurements of the common bile duct during constant rate saline perfusion through the choledochoduodenal junction were made in 25 young healthy cats receiving i.v. injections of terbutaline. A rhythmic activity independent of duodenal motility was found in the unstimulated sphincter. Sphincter activity was depressed and the resistance to flow was decreased in 20 of 25 cats receiving 0.5-4.0 μg/kg terbutaline; the other 5 cats had similar responses with 5-10 μg/kg. Isoprenaline (0.5-5.0 μg/kg) had a similar effect on the choledochoduodenal sphincter but differed from terbutaline in that it produced marked tachycardia and inhibited duodenal motility. Cholecystokinin in most cats increased the intestinal activity and relaxed the sphincter.

5514 EFFECT OF GASTRIN ON GASTRIC MYO-ELECTRIC ACTIVITY. *(E.)*

Kelly, K. A. (Mayo Clin., Rochester, Minn.). *Amer J Dig Dis* 15(5):399-405, 1970.

The effect of gastrin pentapeptide and synthetic human gastrin I (2.5 μg/kg s.c. each) on the pattern of gastric myo-electric activity was studied in 9 dogs following recovery from serial implantation of 8 electrodes from the fundus to the pylorus on the anterior serosal surface of the stomach. Both hormones increased the mean frequency of the gastric pacesetter potential from 5.2 to 6.0 cycles/min and also increased the mean incidence of bursts of action potentials associated with cycles of the antral pacesetter potential from 10 to 86%, but they did not consistently alter the velocity of the pacesetter potential propagation in the corpus (0.3 cm/sec) or antrum (1.7 cm/sec). The duration of the bursts of action potentials, 10 min after gastrin pentapeptide, was approximately 4 sec both in the corpus and in the antrum, but the width of the caudally progressing band of action potentials was greater in the antrum (3-6 cm) than in the corpus (less than 3 cm). The onset of changes in the pattern of electrical activity occurred within 2 min after an i.v. infusion of gastrin pentapeptide (0.1 μg/kg/min) was started, and the effects began to subside between 3 and 5 min after the i.v. infusion was stopped. Gastrin appears to enhance gastric motility through specific effects on gastric electrical activity.

5515 THE INFLUENCE OF SEROTONIN AND HISTAMINE ON CONTRACTILITY OF THE SMOOTH MUSCLE OF THE DIGESTIVE TRACT IN EXPERIMENTAL ANIMALS. *(E.)*

Kedzierska, L. (Med. Sch., Wroclaw, Poland). *Arch Immun Ther Exp* 18(2):239-257, 1970.

Isolated segments of rabbit, guinea pig and rat digestive tract were used to study the influence of histamine and serotonin on smooth muscle contractility. Portions of the stomach (rat) as well as small and large intestine were included for investigation. Guinea pig intestine was very sensitive to histamine in comparison with that of the rat and rabbit and histamine exerted a strong influence on contractility of rabbit taeniae and on the circular and middle segments of small intestine as compared with the other segments studied (duodenum, post-duodenum, ileum and colon). The guinea pig gut sensitivity to histamine was high, although stimulation pertained only to tone, which was especially evident in the small intestine. Histamine exerted virtually no effect on isolated segments of the rat digestive tract, although it strongly increased tone of the rat stomach. Serotonin increased muscle tone in all 3 species studied but caused weaker amplitude changes than histamine. Serotonin exerted its greatest effects on the rat stomach and proximal small intestine, and this species showed the greatest sensitivity to serotonin.

5516 THE EFFECT OF SECRETIN AND CHOLECYSTOKININ-PANCREOZYMIN ON THE INTRALUMINAL PRESSURE OF THE JEJUNUM IN THE UNANESTHETIZED DOG. *(E.)*

Farrar, J. T. (Med. Coll. Virginia, Richmond) and M. Ramirez. *Amer J Dig Dis* 15(6):539-544, 1970.

The effect of i.v. cholecystokinin-pancreozymin and secretin on intraluminal pressure in the jejunum was measured in 5 unanesthetized dogs, prepared with a modified Mann-Bollman fistula. Intrajejunal pressure was recorded by strain gauge manometer from a balloon placed in the small intestinal fistula. Dogs were fasted for 12 hr and following a 10 min baseline period, either cholecystokinin-pancreozymin (0.4 units/kg and 0.1 units/kg) or secretin (1.0 units/kg and 0.25 units/kg) in a 5 cc diluent was injected i.v., and a 10 min record was obtained. Two experiments on each of 5 dogs were performed with each dose of the test substances and two control studies were performed on each dog, using 5 cc saline instead of the hormones. Both doses of cholecystokinin-pancreozymin caused quantitatively equal increases in amplitude and frequency of jejunal contractions. At 0.1 and 0.4 units/kg, the intraluminal pressure increased from a saline control level of 22 mm Hg to a maximum of 44 mm Hg, and the number of waves increased from a control level of 5/min to a maximum of 8/min. The pressure and frequency responses occurred within 30 sec following injection, and began to return to control levels within 10 min. Secretin, at a dose of 1.0 unit/kg, inhibited pressure waves by reducing intraluminal pressure from a control maximum of 45 mm Hg to less than 5 mm Hg, and by reducing frequency of contractions from a control level of 7/min to less than 1/min. The decreases in jejunal pressure waves caused by secretin at 1.0 units/kg occurred within 2 min after injection and persisted for 18 min. The lower dose of secretin (0.25 unit/kg) similarly inhibited pressure waves, but a steady recovery of activity was observed within 5 min after injection.

5517 THE EFFECTS OF ADRENALINE, NORADRENALINE AND ISOPRENALINE ON INHIBITORY α- AND β-ADRENOCEPTORS IN THE LONGITUDINAL MUSCLE OF THE GUINEA-PIG ILEUM. *(E.)*

Kosterlitz, H. W. (Dept. Ther., U. Aberdeen, Scotland), R. J. Lydon and A. J. Watt. *Brit J Pharmacol* 39(2):398-413, 1970.

Two preparations, a segment of guinea pig ileum and the myenteric plexus-longitudinal muscle preparation, were used to analyze the inhibitory effect of adrenaline, noradrenaline and isoprenaline on the contractor responses of longitudinal muscle to acetylcholine or to electrical, coaxial or field stimulation. Response to electrical stimulation were completely suppressed by adrenaline or noradrenaline (.5 to 1 μM) but only partly inhibited (20 to 40%) by isoprenaline (.5 to 1 μM). Propanolol (.85 μM) antagonized the effects (mean dose ratios: 1.3 ± 0.1, 3.2 ± 0.6, 7.8 ± 0.7) of adrenaline, noradrenaline and isoprenaline, resp. However, phenoxybenzamine antagonized most of adrenaline's effect and to a lesser extent that of noradrenaline (mean dose ratio: 3.6 ± 0.3 and 2.0 ± 0.5, resp). Inhibitory effects of the 3 catecholamines on acetylcholine induced contractions were not affected by phenoxybenzamine but were antagonized by propanolol indicating that β-adrenoceptors are present on the muscle cells. The output of acetylcholine evoked by electrical stimulation was diminished by adrenaline or noradrenaline but was not affected by isoprenaline. The depressant effect on acetylcholine release was antagonized by phenoxybenzamine but not propanolol; therefore suggesting that these effects of adrenaline and noradrenaline are mediated by α-adrenoceptors. α-Adrenoceptors *in situ* seemingly are stimulated mainly by circulating adrenaline and possibly noradrenaline and thus probably cause a prejunctional inhibition at the nerve-smooth muscle junction.

5518 GASTRIC MOTOR AND INHIBITOR RESPONSE TO STIMULATION OF THE SYMPATHETIC NERVE IN THE DOG. *(E.)*

Nakazato, Y. (Fac. Vet. Med., Hokkaido U. Sapporo, Japan), K. Saito and A. Ohga. *Jap J Pharmacol* 20(1):131-141, 1970.

The motor responses of the fundus and corpus of the dog's stomach to stimulation of peripheral splanchnic and periarterial nerves, and to gastric arterial injections of noradrenaline and isoproterenol were analyzed comparatively using atropine, hexamethonium, bretylium, guanethidine and pronethalol, with the vagal gastric response serving as a control. Adult fasted dogs were anesthetized with ether or pentobarbital, the femoral artery and cephalic vein were cannulated, and in etherized dogs the spinal cord was transected between C_1 and C_2 levels. Branches of right and left vagi were separated for central and peripheral stimulation, and the left greater splanchnic nerve and periarterial nerves were expose for preganglionic and postganglionic sympathetic sti ulation. There was no difference in response to vag stimulation or to gastric arterial injections of nor adrenaline or isoproterenol in dogs whose spinal cor was transected under ether anesthesia and in those with intact spinal cord and anesthetized with pentobarbital. The gastric motor responses to stimulatio of peripheral splanchnic or periarterial nerves depended mainly on the strength of stimulation and in 33 dogs were classified as: (A) relaxation, common

n low intensity stimulation in unatropinized animals;
B) biphasic response, consisting of initial contrac-
ion followed by relaxation; (C) contraction; (D) con-
raction with peristaltic-like waves. Stimulation at
igher intensity produced the peristaltic-like con-
ractions, which were abolished by atropine. The
aximum response was obtained by a stimulation fre-
uency of 20 to 30 pulses/sec, with or without
tropine. Gastric arterial injections of noradrena-
ine produced responses similar to those produced by
ympathetic nerve stimulation, with the exception of
he peristaltic-like contractions, and isoproterenol
njection usually caused relaxation. In the atropin-
zed dog, hexamethonium (5 to 20 mg/kg i.v.) markedly
educed or abolished type A, B and C responses, but
ad no effect on type D responses. In 13 of 15 atro-
inized dogs, all gastric responses to peripheral
planchnic or periarterial nerve stimulation were
arkedly reduced or abolished by bretylium (7 to
 mg/kg i.v.) or guanethidine (2.5 to 15 mg/kg i.v.).
 2 dogs the stimulation caused long-lasting con-
actions that were not reduced by the blocking
ents. The atropine-resistant contraction caused
 sympathetic nerve stimulation and by noradrenaline
s reversed to a relaxation by phenoxybenzamine
5 to 20 mg/ kg i.v.), and these relaxations were
duced or abolished by injection of pronethalol.
e motor responses of the atropinized dog stomach
 sympathetic stimulation and arterial injection
 noradrenaline may be mediated by α-receptors,
ile the relaxation may be mediated by β-receptors.

19 EFFECT OF SECRETIN ON SMALL BOWEL MYOELECTRIC ACTIVITY OF CONSCIOUS
ALTHY DOGS.

(E.) Code, C. F. (Mayo Clin.,
chester, Minn.) and J. Hermon-Taylor. *Amer J Dig*
s 15(6):545-550, 1970.

e effect of both the pure hormone form (Jorpes)
d the synthetic polypeptide form of secretin on
e myoelectric activity of the small intestine was
udied in 7 healthy, conscious dogs. Myoelectric
tivity, in the form of action potentials superim-
sed on the background pacesetter potential, was
corded for over a period of 4 months from chroni-
lly implanted platinum electrodes placed on the
stric antrum, along the duodenum and upper jejunum,
 the terminal ileum, and at the ileocecal junction.
servations were made on the conscious animal at
ying times (2-48 hr) following a meal of meat,
l following i.v. injection of either form of se-
tin or of saline. In 24-to 48-hr fasted dogs,
ion potentials were stimulated by injection of
retin. In all tests in fed and fasted animals a
ked inhibition of action potentials in the duo-
um occurred within 30 sec following secretin in-
tion at a dose of 1 U/kg, i.v., with no effect
 the normal frequency or velocity of the paceset-
. In fed dogs (2-4 hr after meat meal) an injec-
n of Jorpes natural secretin reduced the percent-
 of incidence of duodenal action potentials from
 to a minimum of 3% within 3 min post-injection,
ore returning to control levels within 25 min
t-injection. In fasted quinidine-treated dogs an
ection of synthetic secretin (1 U/kg, i.v.) re-
ed the percentage of incidence of action poten-
ls from a baseline level of 75% to less than 10%
hin 2 min post-injection, before returning to a
saline control level of 45% within 8 min post-injection. When Jorpes natural secretin (1 U/kg, i.v.) was given to dogs 2-4 hr after a meal, the inhibition of action potentials along the small intestine was more intense, more consistent and of longer duration in the duodenum and jejunum than in the ileum. In the small intestine of fed dogs, 5 min after injection of Jorpes natural secretin, there was a 90% inhibition of action potentials in the upper one-quarter of the small intestine, 80% inhibition in the second one-quarter, 70% inhibition in the third one-quarter, and only 30% inhibition in the lowest one-quarter. In the small intestine of dogs fasted and pretreated with bethanechol, secretin injection caused a reduction in the number of bursts of action potentials along the small intestine. In the upper one-quarter of the small intestine the number of bursts dropped from a baseline level of 13.0 ± 0.9/min to 3.6 ± 0.8/min; in the second one-quarter the reduction was from a baseline of 12.5 ± 0.7/min to 4.1 ± 0.7/min; in the third one-quarter the counts dropped from 13.5 ± 0.8/min to 8.7 ± 1.2/min; and in the lower one-quarter the drop was from 12.5 ± 0.4/min to 10.9 ± 0.8/min. A gradient of diminishing inhibitory action of secretin on action potentials and on all motor activity extended throughout the small intestines.

5520 CONSIDERATIONS OF THE EFFERENT NERVOUS MECHANISM OF THE VAGO-VAGAL REFLEX RELAXATION OF THE STOMACH IN THE DOG.

(E.) Ohga, A. (Fac. Vet. Med., U. Hokkaido, Sapporo, Japan), Y. Nakazato and K. Saito. *Jap J Pharmacol* 20(1):116-130, 1970.

The nature of the efferent pathways participating in the vago-vagal relaxation of the stomach was studied in adult, fasted dogs (7 to 16 kg) in which bilateral splanchnic nerves were transected and the spleen and adrenal glands were removed. The peripheral end of the splanchnic nerve was used for sympathetic stimulation and periarterial nerves surrounding the celiac artery were prepared for post-ganglionic synpathetic stimulation. Gastric responses to nerve stimulation and to drugs injected i.v. or directly into a branch of the left gastric artery were recorded via a pressure transducer leading from a balloon positioned in the fundus and body of the stomach. Stimulation of the central end of the abdominal vagus nerve at frequencies above 5 pulses/sec produced mostly stomach relaxation in atropinized (0.05 to 2 mg/kg) dogs while peripheral vagal stimulation caused relaxation in the stomach of atropinized dogs. A low-frequency stimulation (1 to 5 pulses/sec) of peripheral vagal stimulation was more effective than central vagal stimulation in causing relaxation of the stomach and maximum gastric relaxation was attained at a rate of 20 to 50 pulses/sec in both vagal stimulations. Peripheral vagal stimulations rapidly induced gastric relaxation and produced a maximum effect in 10 sec after start of stimulation, while central vagal stimulation induced relaxation more slowly and reached a maximum effect in 30 sec after start of stimulation. Reserpine (2.5 to 4 mg/kg s.c.) and cocaine (3 to 5 mg/kg i.v.) had no effect on the inhibitory vagal responses. Bretylium (7 to 15 mg/kg i.v.) or guanethidine (2.5 to 5 mg/kg i.v.) abolished or greatly reduced the gastric response and the pressor response to sympathetic nerve stimulation, but only slightly reduced the gastric relaxation response to central or peripheral vagal stimulation. A low dose (5 mg/kg i.v.) of hexamethonium greatly reduced or abolished the gastric relaxation induced by central vagal stimulation, but the inhibitory response induced by peripheral vagal stimulation was reduced, but never abolished, even by high doses (22 mg/kg i.v.) of hexamethonium. The afferent valley from the abdominal vagus selectively induces reflex excitation of the preganglionic elements in the efferent vagal inhibitory pathway and the inhibitory ganglionic cell in this pathway may receive cholinergic preganglionic fibers and send nonadrenergic postganglionic fibers to the stomach.

5521 CONTRACTION OF SMOOTH MUSCLE WITH BLOOD OF PATIENTS WITH ULCERS. *(E.)* Necheles, H. (Michael Reese Hosp., Chicago, Ill.), A. Geisel, N. C. Jefferson, M. Berg and R. Jenkins. *JAMA* 212(9):1499-1501, 1970.

5522 THE EFFECT OF CHEMICAL AND MECHANICAL STIMULATION ON CANINE PANCREATIC SPHINCTER PRESSURES. *(E.)* Schapiro, H. (U. Tennessee Med. Unit, Memphis), L. G. Britt and L. D. Wruble. *Amer Surg* 36(6):365-367, 1970.

5523 PHARMACOLOGY OF AN ANTISPASMODIC AGENT PENTAPEPTIDE METHYLSULFATE. *(E.)* Sunahara, F. A. (Dept. Pharmacol., U. Toronto, Ontario, Canada) and F. Herr. *Arch Int Pharmacodyn* 184(2):287-298, 1970.

5524 CORRELATION BETWEEN ELECTRIC RHYTHM AND STOMACH MOTILITY. *(Rus.)* Ustinov, V. N. (I. P. Pavlov Inst. Physiol., Acad. Sci. USSR, Leningrad) and V. I. Kotelnikova. *Fiziol Zh SSSR Sechenov* 56(3):426-443, 1970.

5525 INFLUENCES OF THE INFERIOR VENA CAVA ON THE MOTOR ACTIVITY OF THE GASTROINTESTINAL TRACT. *(Rus.)* Rozova, E. I. (I. P. Pavlov Inst. Physiol., Acad. Sci., Leningrad, USSR). *Fiziol Zh SSSR Sechenov* 56(3):434-438, 1970.

5526 MOTILITY OF THE GASTROINTESTINAL TRACT AND THE FUNCTIONAL STATE OF ITS ORGANS. *(Rus.)* Barashkova, G. M. (I. P. Pavlov Inst. Physiol., Acad. Sci. USSR, Leningrad). *Fiziol Zh SSSR Sechenov* 56(3):419-425, 1970.

5527 SENSITIZATION OF THE ISOLATED RAT INTESTINE BY METABOLIC INHIBITORS WITH SYMPATHOMIMETIC EFFECTS. EFFECTS OF SODIUM FLUOROACETATE AND OF SODIUM NITRIDE. *(Fr.)* Valette, G. (Fac. Pharm., Paris, France) and M. F. LeClair. *C R Acad Sci* 270(18):2215-2218, 1970.

- P:Morph (5472)
- P:Secr:Stom (5545)
- P:Secr:Hepatobil (5570)
- P:Secr:Int (5615)
- P:Gen (5627)(5637)
- Diagproc (5687)(5694)
- D:Esoph (5758)(5761)
- D:Stomduo (5767)(5773)(5790)
- D:L.Intest (5928)(5933)(5942)
- D:Gen (6170)(6182)(6194)

SECRETION AND METABOLISM

Stomach

5528 EVIDENCE OF GASTRIN-LIKE ACTIVITY IN THE RAT'S ANTRUM. *(E.)* Grahn, B. (Inst. Physiol., U. Lund, Sweden) and S. E. Svensson. *Experentia* 26(4):372, 1970.

The presence of gastrin activity in the rat antrum or duodenum was studied by measuring the flow of gastric acid secretions in rats with a Heidenhain pouch, following s.c. injection of preparations from antral mucosa. Pooled antral mucosa (2 to 3 g) from starved laboratory rats was homogenized, heated and centrifuged (2000 g for 5 min). The pellet obtained was resuspended in 1.5 vol of distilled water, was centrifuged again, and the combined opalescent supernatants were centrifuged at 80,000 g for 30 min. A clear extract was obtained with a histamine concentration of less than 1.7 g/ml (guinea pig ileum assay). Samples of 6 to 7 ml of the extract were chromatographed on a Sephadex G-25 column and eluted with 0.03 M NH_4HCO_3 at a pH of 8.0 and transmission at 254 nm of the eluate was recorded. Fraction samples were evaporated to dryness, dissolved in 1 Tyrodes' solution, injected s.c. in the rat, and th secretory response of acid was recorded for 30 min. A threshold dose corresponded to 0.1 g of hog gastrin II. The Sephadex chromatography of the ant extract resulted in separation into 2 peaks of gast activity. The major first peak appeared in the mac molecular fractions eluted immediately after the v volume (10 to 260 ml), and the second peak (contai ing a tenth of the total activity) was eluted at a larger volume (380 to 460 ml) and appeared in fractions containing low molecular weight substances. When pooled and concentrated, fractions of the fir peak were rechromatographed (a further separation into 2 peaks of gastrin activity occurred) and elu at similar volumes as were the 2 peaks of the orig extract. This suggests that the gastrin activity he extract may be bound to macromolecules forming a omplex which easily dissociates when the equilibrium s disturbed.

529 DIRECT INHIBITORY EFFECT OF ADENOSINE MONOPHOSPHATES ON Na^+-K^+-DEPENDENT ATPASE PRE-ARED FROM HUMAN GASTRIC MUCOSA. *(E.)* Mozsik, G. U. Med. Sch., Pecs, Hungary). *Europ J Pharmacol* (2):207-210, 1970.

he inhibitory effects of adenosine monophosphates n sodium and potassium ion-dependent ATPase prepared rom human gastric mucosa were measured. Cyclic ',5'-AMP (at concentrations from 10^{-13} to 10^{-5}M) reduced the ATPase activity (µmoles P_i/mg) from the ontrol value (1.64) to 0.83 at the highest concentration while 5'-AMP tested only at 10^{-11} and 10^{-8}M oncentrations lowered ATPase activity to 1.21 and 01 resp. and cyclic 2',3'-AMP tested at the same 2 oncentrations lowered it to 0.81 and 0 resp.

30 ACID GASTRIC SECRETORY RESPONSES TO HISTAMINE, CRUDE PORCINE GASTRIN AND PENTA-STRIN IN RATS. *(E.)* Amure, B. O. (Dept. Physiol., Ibadan, Nigeria) and A. A. Omole. *J Pharm armacol* 22(6):452-455, 1970.

e effects of histamine, pentagastrin and crude rcine and standardized gastrin on acid gastric se- etion was studied in rats (190 to 240 g). The rats re anesthetized by i.m. urethane and their stomachs re prepared for perfusion and continuous recording acid secretion. Injection of test compounds was de by means of a cannulated femoral vein. The andardized gastrin consisted of partially purified rcine gastrin previously assayed against pure strin II. A standard procedure using high and low ses of the standard and of test drugs in random der was adopted. Successive injections of the same se of the secretagogues increased the acid secretory sponses up to the third or fourth dose before a eady state was approached; assays were begun only er this time. Histamine at the 100 µg dose caused fall in pH by 2.60 units, while at 800 µg the pH ange leveled off at 3.20 units. Standardized strin in doses from 10 to 30 µg produced a pH change from 2.40 to 2.90 units, while the pH change in ponse to pentagastrin was from 2.10 to 2.60 at e levels of 6.25 to 25 µg. The acid response to tapeptide began after 2.0 to 3.5 min of injection recovery was complete within 1 hour. The log e response curves for the secretagogues used were allel and no marked differences in time-course ponse or pattern of stimulation were found. On a ar basis, pure gastrin possessed 3000 times the ency of histamine and was found to be 50 times e potent than pentagastrin, confirming that gastrin the most potent of the three stimulants.

1 INCREASED SUSCEPTIBILITY TO PROTEOLYTIC ACTION OF GASTRIC SUPERFICIAL MUCOSA AFTER LIC ACID RELEASE. *(E.)* Velican, C. (Inst. Intern ., Bucarest, Rumania), D. Velican, N. Marcus and Tacorian. *Amer J Dig Dis* 15(5):413-418, 1970.

Normoacid and hyperacid subjects were used to determine if a pH dependent, chemical extraction of sialic acid might occur in the superficial mucous layer of the gastric mucosa due to prolonged states of hyperacidity, and if the release of sialic acid could induce increased susceptibility of this mucin to proteolytic action. In the normoacid subjects the fundic superficial mucous layer showed a more or less intense and uniform basophilia with Alcian blue, pH 2.5. Absence of alcianophilia was seen only in 2 of 15 subjects. In 14 of the 15 subjects the Alcian blue reactivity of the superficial mucous layer diminished or disappeared after sialidase digestion. Treatment with 0.02 N HCl, pH 1.6, at 37°C for 1 hr resulted in the extraction of the Alcian blue reactive material from the superficial mucous layer in fresh sections. Digestion with pepsin and trypsin for 1 hr each and with papain for 6 hr did not result in a significant degradation of the fundic superficial mucous layer. In the hyperacid subjects, moderate, intense, diffuse or focal basophilia were not detected. The mucous material exhibited (as in the normoacid subjects) an intense PAS reactivity and stained only red with the Alcian blue, pH 2.5, followed by PAS sequence. The fundic superficial mucous layer displayed a decrease of sialic acid and was increasingly susceptible to proteolytic digestive action.

5532 MECHANISM OF GASTRIC ANTISECRETORY ACTIVITY OF A NEW FRACTION OF LICORICE ROOT (F_M100). *(E.)* Ishii, Y. (Res. Lab., Nippon Kayaku Co., Tokyo, Japan). *Jap J Pharmacol* 20(1):71-79, 1970.

The gastric antisecretory activity of a fraction of licorice root (F_M100) was investigated with respect to its mechanism of action, with special regard to gastrin release from rat antral mucosa. Acute fistula rats (200g), pylorus ligated rats and chronic fistula rats (> 250g) were used. Gastric juice from the acute rats was washed with saline each hour and titrated against 0.1 N NaOH with phenolphthalein indicator. Injection of a gastrin-like tetrapeptide, ACC-TP (500 µg/kg, i.m.), intragastric infusion of 20% ethanol or 1% acetylcholine (ACh) and mechanical stimulation (saline distension) were used as gastric stimulants. F_M100 had little inhibitory effect on AOC-TP induced secretion or local application of ACh, while secretion caused by ethanol or mechanical stimulation was markedly inhibited; atropine caused 100% inhibitory activity against ACh, ethanol, distension and methylcholine; F_M100 proved ineffective in blocking secretion from ACh and methylcholine (18.8% and 52.9%). Hexamethonium also exerted marked inhibition of ethanol, distension and AOC-TP induced secretion (100, 97.4 and 76.8%), while F_M100 showed 100%, 71.8% and 5.2% inhibition against the same stimulants. The licorice root fraction also inhibited secretion in antrectomized rats at about the same extent as in normal rats and had no effect on gastrin-like activity in antral mucosa. Results suggest that F_M100 blocks the process between mucosal receptors and ACh release and is probably different in action from anticholinergic and ganglionic blocking agents.

5533 POTENTIATION OF ACID OUTPUT IN MAN BY A DISTENTION STIMULUS. *(E.)* Cooke, A. R. (Dept. Med., U. Iowa, Iowa City). *Gastroenterology* 58(5):633-637, 1970.

Acid output in response to distention, i.v. histamine, i.v. pentagastrin and distention plus pentagastrin was studied in 7 healthy subjects using test meals of 5% glucose in water (375, 750 and 1500 m.) containing phenol red to produce gastric distention. Response to distention was significantly greater than basal acid output. Mean basal acid output was 1.68 ± 0.16 (S.E.) mEq/30 min compared to 4.51 ± 0.43, 5.97 ± 0.46, and 4.97 ± 0.47 mEq/30 min. For 375, 750, and 1500 ml distention, resp., mean peak acid output in response to 2 μg and 6 μg/kg/hr was 16.11 ± 1.14 and 17.33 ± 1.16 mEq/30 min resp., ($P > 0.1$). Mean peak acid output in response to histamine was not significantly different from that of pentagastrin ($P > 0.2$). Acid output in response to distention plus pentagastrin was significantly greater than to pentagastrin alone. Mean peak acid outputs for 2 and 6 μg/kg/hr plus distention were 25.69 ± 2.73 and 25.82 ± 1.87 mEq/30 min, resp. These responses were significantly greater ($P < 0.005$) than histamine. Studies indicate that potentiation occurs in man.

5534 THE INFLUENCE OF 2-(2,6-DICHLORPHENYLAMINO)-2-IMIDAZOLINE HYDROCHLORIDE (CLONIDINE) AND SOME RELATED COMPOUNDS ON GASTRIC SECTION IN THE ANESTHETIZED RAT. *(E.)* Waltz, A. (Dept. Pharmacol., Christian Albrechts U., Kiel, Germany) and P. A. Van Zwieten. *Europ J Pharmacol* 10(3):369-377, 1970.

The effects of various imidazoline derivatives (clonidine, naphazoline, xylometazoline, tolazoline, and phentolamine) on rat gastric secretion was studied. The rats (male Sprague-Dawley, 170 to 240 g) were anesthetized with sodium pentobarbital (50 mg/kg, i.p.) and a catheter was inserted orally into the stomach. A second catheter was introduced into the duodenum and attached to a pH-electrode. Relative changes in gastric acidity were recorded quantitatively. Clonidine (1 mg/kg, i.v.) induced a sharp increase in gastric acidity in the anesthetized rat; the time course of the effect was dose dependent. Pretreatment with atropine (5 mg/kg) and high doses of hexamethonium (10 mg/kg, i.v.) did not appear to affect the gastric acid production caused by clonidine. In a conscious Shay-rat preparation, clonidine (1 mg/kg, i.p.) caused a marked reduction in volume (1.11 ml/100 g body weight) and acidity (0.37 mEq/100 g body weight) in comparison with control values (3.08 ml/100 g and 1.52 mEq/100 g). Naphazoline was found to increase gastric acid production in a dose dependent manner in the anesthetized rat. Xylometazoline and tolazoline also increased gastric acid secretion with approximately the same time course as clonidine (1 hour). Phentolamine did not significantly alter the pH of the collected gastric juice. The inhibition of gastric secretion due to clonidine was seen in the unanesthetized state, whereas a histamine-like action of the drug is seen in anesthetized subjects and animals and is presumed to be of peripheral origin.

5535 THE EFFECT OF HEXAMETHONIUM ON GASTRIC ACID AND PEPSIN RESPONSE TO PENTAGASTRIN, HISTAMINE AND AHR-602. *(E.)* Nakajima, S. (Creighton U. Sch. Med., Omaha, Neb.) and D. F. Magee. *Europ J Pharmacol* 10(2):277-282, 1970.

The action of hexamethonium on gastric acid and pepsin responses to pentagastrin, histamine and *N*-benzyl-3-pyrrolidyl acetate methobromite (AHR-602), in 3 unanesthetized dogs with Heidenhain pouches and duodenal pouches with gastrojejunostomy which diverts gastric acid from the duodenum, was studied by acid titration. Hexamethonium (40 mg, s.c.) following pentagastrin (2 μg/min, i.v.), histamine (0.5 mg/hr, i.v.) and *N*-benzyl-3-pyrrolidyl acetate methobromide (250 μg/min, i.v.) augmented, depressed, and depressed, resp., gastric acid output after a plateau or steady state level of secretion had been reached. Pepsin responses to histamine and *N*-benzyl-3-pyrrolidyl acetate methobromide, the muscarinic ganglion-stimulating agent, were significantly depressed (-85% and -66.3% from control, resp.) by hexamethonium. Prolonged i.v. administration of histamine alone produced a significant increase in peps response, which had a characteristic latent period. The fact that hexamethonium, a competitive type of ganglion blocking agent, inhibits the acid and pepsi response to *N*-benzyl-3-pyrrolidyl acetate methobromi suggests that the mechanism by which pentagastrin stimulates the oxyntic cell is different from that c a muscarinic ganglion-stimulating agent.

5536 THE CEREBRAL INHIBITION OF GASTRIC ACID. *(E.)* Reigel, D. H. (VA Hosp., Wood, Wisconsin), S. J. Larson and A. Sances, Jr. *Wiscon Med J* 69(6):163-165, 1970.

5537 THE INFLUENCE OF MAMMALIAN GASTRIC STIMULANTS ON *IN VIVO* SECRETION OF ACID IN FROGS. *(E.)* Morrissey, S. M. (Dept. Physiol., Queen Elizabeth Coll., U. London, England) and B. Y. C. Wan. *Comp Biochem Physiology* 34(3): 507-520, 1970.

5538 COMPARATIVE STUDIES ON THE EFFECT OF INACTIVATORS ON HUMAN GASTRICSIN AND PEPSIN. *(E.)* Hunkapiller, M. (Dept. Chem., California Inst. Technol., Pasadena), J. E. Heinze and J. N. Mills. *Biochemistry* 9(14):2897-2902, 1970.

5539 BRADYKININ AND GASTRIC SECRETION. *(E.)* Groza, P. (Acad. Med. Sci., Bucarest, Rumania), M. Corneanu, S. Ionescu and V. Buzoianu. *Rev Roum Physiol* 7(1):29-34, 1970.

5540 THE EFFECT OF VAGOTOMY ON GASTRIN RELEAS AFTER ANTRAL DISTENTION. *(E.)* Eisenberg M. M. (Mount Sinai Hosp., Minneapolis, Minn.), K. Sugawara, R. C. Chawla, J. Isaza and E. R. Woodwar *Arch Surg* 100(6):702-705, 1970.

5541 THE EFFECT OF VISUAL DEPRIVATION ON CANINE GASTRIC SECRETION. *(E.)* Schapiro, H. (U. Tennessee Med. Units, Memphis), L. D. Wruble, L. G. Britt and T. A. Bell. *Amer J Dig Dis* 15(6):529-537, 1970.

5542 RAT GASTRIC SECRETION FOLLOWING ACUTE EXPOSURE TO NICOTINE. *(E.)* Thompson, J. H. (U. California, Los Angeles Sch. Med.) and W. Bruckner. *Europ J Pharmacol* 9(2):261-263, 1970.

5543 SIZE AND CHARGE DISTINCTIONS BETWEEN ENDOGENOUS HUMAN PLASMA GASTRIN IN PERIPHERAL BLOOD AND HEPTADECAPEPTIDE GASTRINS. *(E.)* Yalow, R. S. (VA Hosp., Bronx, N. Y.) and S. A. Berson. *Gastroenterology* 58(5):609-615, 1970.

5544 STARCH HYDROLYSIS IN THE STOMACH: ORIGIN OF GASTRIC AMYLOLYTIC ACTIVITY. *(Rus.)* Inamova, K. B. (Andizhan Med. Inst., USSR). *Med Zh Uzbek* (3):63-64, 1970.

5545 THE EFFECT OF *p*-AMINOSALICYLIC ACID ON GASTRIC SECRETION. *(Rus.)* Pekur, S. V. (N. I. Pirogov Med. Inst., Odessa, USSR). *Probl Tuberk* 48(1):85-87, 1970.

5546 ADRENOMIMETIC AGENTS AND THE BASAL GASTRIC SECRETION. *(Rus.)* Anshelevich, Yu. V. (Riga Med. Inst., USSR). *Klin Med* 48(4):94-97, 1970.

5547 STUDIES OF GASTROINTESTINAL HORMONES: IV. ISOLATION AND PHYSIOLOGICAL EFFECT OF GLYCOPROTEIN IN WHALE GASTRIC MUCOSA. *(Jap.)* Kabeno, H. (Shizuoka Coll. Pharm., Japan), T. Honda, S. Kondo, K. Tachibana, Y. Kobayashi and T. Murata. *J Pharm Soc Jap* 90(5):576-580, 1970.

5548 TELEMETRIC DETERMINATION OF STOMACH ACIDITY. *(Dut.)* De Vries, P. M. (Acad. Hosp. Leiden, Netherlands). *Nederl T Geneesk* 114(22):908-912, 1970.

5549 EFFECT OF GASTRIN ON GASTRIC SECRETION IN *RANA CATESBEIANA* (AMERICAN BULLFROG). *(E.)* Morrissey, S. M. (Dept. Physiol., Queen Elizabeth Coll., London) and Y. C. So. *Comp Biochem Physiol* 34(3):521-533, 1970.

5550 THE SIGNIFICANCE OF NITRITE AND NITRATE CONTENT OF FOOD IN THE FORMATION OF CARCINOGENIC NITROSAMINES IN THE HUMAN STOMACH. *(Ger.)* Sander, J. (Hyg. Inst. Tubingen, Germany). *Zbl Bakteriol* 212(2-4):331-335, 1970.

5551 GASTRIC SECRETION IN VARIOUS CONDITIONS OF INTRAGASTRIC PRESSURE. *(Rus.)* Korotko, G. F. (Andijan Med. Inst., Uzbeck SSR, USSR), A. Musaev, B. Nuritdinov and L. A. Sukhoterina. *Fiziol Zh SSSR Sechenov* 56(4):663-670, 1970.

- P:Morph (5414)(5472)
- P:Absorp (5494)
- P:Motil (5514)(5523)
- P:Gen (5634)
- Diagproc (5653)(5656)(5678)
- D:Stomduo (5764)(5768)(5769)(5787)(5805)(5807)(5911)
- D:Stomduo:Peptulc (5828)(5829)(5830)(5831)(5845)
- D:S.Intest:Malabs (5893)
- D:Livbil (5980)

SECRETION AND METABOLISM

Pancreas

5552 INHIBITION OF EXOCRINE PANCREATIC SECRETION BY GLUCAGON AND D-GLUCOSE GIVEN INTRAVENOUSLY. *(E.)* Nakajima, S. (U. Alabama Med. Ctr., Birmingham) and D. F. Magee. *Canad J Physiol Pharmacol* 48(5):299-305, 1970.

he action of glucagon (40 μg/min, i.v.) and D-glu-ose (40% solution, i.v.) on blood glucose and xocrine pancreatic secretion in response to i.v. nfusion of secretin was studied in unanesthetized dogs with chronic pancreatic fistulas, gastric fistulas, and a gastroenterostomy (which diverted gastric acid from the duodenum). Glucagon and D-glucose produced a significant increase in blood glucose levels with a concomitant decrease in pancreatic volume and output of protein, amylase, lipase and protease. There was a linear inverse relation between pancreatic enzyme output and blood glucose levels after glucagon or D-glucose infusion. The inhibition of pancreatic secretion by glucagon might be a secondary phenomenon owing to its hyperglycemic action.

5553 HISTONE CHANGES DURING DEGENERATION AND REGENERATION OF THE PANCREAS. *(E.)* Fitzgerald, P. J. (Downstate Med. Ctr., St. U. New York, Brooklyn), W. H. Marsh, M. G. Ord and L. A. Stocken. *Biochem J* 117(4):711-714, 1970.

Changes in the microstructure of histones from the pancreas were examined in Wistar rats given i.p. ethionine while being fed a protein-free diet (period of 7 to 8 days). When ethionine-treated rats returned to a stock diet, body weight and pancreas weight increased rapidly; previous ethionine administration had produced profound pancreatic degeneration. Thymidine uptake into DNA of pancreas increased after 2 days of refeeding with stock diet. Fifteen days after return to a stock diet, the total body weight of experimental animals had reached 85% of the weight of controls, pre-experimental pancreas weight was almost regained and the rate of DNA synthesis had returned to normal. Total RNA content of pancreas was decreased by approximately 40% after ethionine administration for 7 days; uridine uptake was decreased by 60%. After 2 days of refeeding, RNA synthesis increased and reached a peak at day 12. Phosphate content of histone F1 decreased after 7 days of ethionine treatment (74% of control), while an increased content was found after 3 to 4 days back on normal diet (152 and 144% of control). Similar changes in phosphate and thiol disulfide content of pancreas histones other than F1 were produced by starvation and refeeding. Phosphorylation of histone other than F1 seemingly precedes the phosphorylation of histone F1, and may be linked with new RNA synthesis.

5554 EXOCRINE PANCREAS AND BLOOD SUGAR MODIFIERS: III. ACTION OF DEOXY-GLUCOSE (ALONE AND IN THE PRESENCE OF CARBONATED WATER) ON PANCREATIC AND BILIARY SECRETION IN THE RAT. *(Fr.)* Debray, C. (Hosp. Bichat, Paris, France), J. De La Tour, C. Vaille, C. Roze and M. Souchard. *Therapie* 25(1):143-159, 1970.

5555 THE EFFECT OF PARENTERALLY INTRODUCED CASEIN HYDROLYSATE ON THE EXCRETORY FUNCTION OF THE PANCREAS. *(Rus.)* Shlygin, G. K. (Acad. Med. Sci. Moscow, USSR) and T. V. Vorobieva. *Biull Eksp Biol Med* 69(4):36-39, 1970.

5556 EFFECT OF PROLONGED FOOD REDUCTION ON THE RAT PAROTID GLAND AND EXOCRINE PANCREAS. *(E.)* Buchner, A. (Dent. Div., Tel Aviv U., Israel) and L. M. Sreebny. *J Nutr* 100(6):655-663, 1970.

o P:Gen (5641)
o Diagproc (5728)
o D:Stomduo:Peptulc (5825)(5843)
o D:S.Intest (5865)
o D:S.Intest:Malabs (5893)
o D:Pancreas (5952)
o D:Pancreas:Pancreat (5961)(5966)(5977)
o D:Livbil:C.Hep (6111)
o D:Gen (6161)

SECRETION AND METABOLISM

Hepatobiliary Tract

5557 CONTROL FACTORS AFFECTING GLUCONEOGENESIS IN PERFUSED RAT LIVER: EFFECTS OF 4-PENTENOIC ACID. *(E.)* Williamson, J. R. (Johnson Res. Found., U. Pennsylvania, Philadelphia), S. G. Rostand and M. J. Peterson. *J Biol Chem* 245(12):3242-3251, 1970.

The metabolism of 4-pentenoic acid (PA) and the mechanism by which it inhibits gluconeogenesis were investigated in perfused rat livers. With the bile duct ligated, 4-pentenoic acid (1 mM) completely inhibited glucose production and pyruvate uptake but when the bile was collected a 2-fold higher concentration (2 mM) was needed for maximal inhibitory effects. Addition of 4-pentenoic acid (0.5 mM) following oleate (0.5 mM) resulted in utilization of 11 µatoms of oxygen/g liver and production of 2.5 µmoles/g liver of ketone bodies (stoichiometries substantiating metabolism of 4-pentenyl-CoA to acrylyl-CoA through a step of β-oxidation). Higher concentrations of 4-pentenoic acid added to perfusat with pyruvate (2 mM) decreased ketone body productio to 20% of the rate observed without substrate. 4-Pentenoic acid (2mM) caused oxidation of the mitochondrial and cytosolic pyridine nucleotides and NAD systems and at a lower concentration (1 mM) decrease CoA levels (400 to 80 nmoles/g) and carnitine levels (450 to 160 nmoles/g), acetyl-CoA levels (200 to 40 nmoles/g) and citric acid cycle intermediates (nmoles/g) malate (625 to 310), citrate (3750 to 30 isocitrate (125 to 26), and glutamate (13130 to 432 as well as the ratios of ATP:ADP (5.01 to 1.02), lactate:pyruvate (4.9 to 2.5) and β-hydroxybutyrate to acetoacetate (0.31 to 0.12) after 45 min. The i hibitory effects of 4-pentenoic acid on gluconeogen sis appear to be the result of altered allosteric control of pyruvate carboxylase and diminished rate of production and transport of reducing equivalents from mitochondria to cytosol.

5558 INTERACTION BETWEEN METHIONINE, FAT AND CHOLINE IN THE YOUNG RAT. *(E.)*

Clark, H. E. (Food Nutr. Dept., Purdue U., Lafayette, Ind.), G. S. Percival, S. H. Dunn and J. M. Howe. *J Nutr* 100(6):664-670, 1970.

The effect of different levels of choline and methionine and of choline and fat on growth and lipotropic activity was measured in male weanling Sprague-Dawley rats (50-55g). The factorial design of the first experiment included 3 levels of choline (0, 44 and 88 mg choline per 100 gm diet) and 3 levels of methionine (288, 374 and 547 mg per 100 gm diet) in diets containing 5% fat content; and in the second experiment, methionine content was maintained at 415 mg, while 5 levels of choline between 0 and 88 mg per 100 gm in diets containing 5%, 10% and 15% fat were administered. Six rats were assigned to each treatment for 4 weeks. Rats were then fasted for 4 hr, sacrificed, and liver and carcass nitrogen and liver choline concentrations were determined. In the first experiments, when data for all quantities of methionine were pooled, the concentration of hepatic choline of rats fed either 44 or 88 mg choline per 100 gm diet was elevated 30% and the concentration of lipid was depressed 30% below that of choline-deficient rats. Rats receiving 0 mg choline and 288 mg methionine per 100 gm diet had hepatic lipid content of 12.5% and a choline concentration of 1.80 mg/g, while rats receiving 88 mg choline and 288 mg methionine per 100 gm diet had a hepatic lipid content of 7.7% and a choline concentration of 2.43 mg/g. Dietary choline did not significantly influence food consumption, growth or nitrogen deposition. Increasing methionine concentration in the diets stimulated (P<0.01) food intake, weight gain, liver size, and nitrogen deposition in carcass and liver, and increased (P<0.05) the total amount and concentration (P<0.01) of choline in liver, but did not influence lipid concentration. When dietary choline was maintained at 44 mg per 100 gm diet, rats receiving methionine at 288 mg per 100 gm diet had a daily food intake of 10.1 gm/day, a weight gain of 2.4 gm/day, total carcass N of 5.76 g, total liver N of 44 mg, and total hepatic choline content of 11.5 mg, while rats receiving methionine at 547 mg per 100 gm iet had a daily food intake of 12.2 g/day, weight ain of 4.2 g/day, total carcass N of 8.24 g, total iver N of 221 mg, and total hepatic choline of 18.1 g. In the second experiment, increasing dietary fat rom 5 to 15% decreased (P<0.01) food intake, weight ain, and increased concentration of lipid, but not of choline in the liver. There was significant nteraction between dietary choline and methionine ith respect to weight gain and liver weight (P<0.05), nd between choline and fat in respect to lipid and oisture in fresh liver (P<0.01).

559 SPECIES AND SEX DIFFERENCES IN THE SUBSTRATE-INDUCED SPECTRAL CHANGE OF P-450 N RELATION TO THE ACTIVITY OF DRUG OXIDATION IN LIVER ICROSOMES. *(E.)*

Kato, R. (Natl. Inst. Hyg. Sci., okyo, Japan), K. Onoda and M. Takayanagi. *Jap J harmacol* 20(1):157-163, 1970.

The effect of species and sex differences on the spectral change of cytochrome P-450 (from liver microsomes) induced by hexabarbital and aniline was studied in rats, mice and rabbits. Cytochrome content (nmole/mg protein) was higher in male rats (0.96) than in females (0.72) but there was no difference between sexes in the mice (1.08 and 1.04) or in the rabbits (1.63 and 1.58). Spectral change (OD difference X 10^3/mg protein) produces by hexobarbital (1.6mM) was greater in male rats (17.9) than in females (7.0) but there were no differences between sexes in mice (8.1 and 8.4) or in rabbits (15.2 and 15.0), and the binding capacity of P-450 with hexobarbital (indicated by OD difference X 10^3/mμmole P-450) was high for male rats (18.6) but similar for both sexes of mice (7.5 and 8.1), rabbits (9.3 and 9.5) and for female rats (9.7). Aniline (2.0 mM) induced changes were greater in male rats (11.8) than in females (8.9) although there were no differences between the sexes in mice (13.7 and 13.9) or rabbits (19.2 and 18.2), and the binding capacity of P-450 with aniline was similar in both sexes of rats (11.3 and 12.4), mice (12.7 and 13.4) and rabbits (11.8 and 11.5). Hexobarbital hydroxylating activity (nmole/30 min per nmole P-450) was similar in all the animals (range of 41.9 to 53.4) studied except in the male rats (103.2) indicating the relation of the amount of bound substrate with P-450 to the sex and species differences in hydroxylating activity. Aniline hydroxylating activity nmole/30 min/nmole P-450) was higher in male and female mice (33.5 and 34.1 resp.) than in rats (21.2 and 21.7 resp.) and in rabbits (17.4 and 17.3 resp.) suggesting that the species difference is related not only to the amount of substrate—P-450 complex but possibly also to the rate of reduction of this complex by NADPH-cytochrome P-450 reductase.

5560 INITIAL INCORPORATION INTO RAT LIVER GLYCEROLIPIDS OF INTRAPORTALLY INJECTED [^{3}H]GLYCEROL. *(E.)*

Akesson, B. (Chem. Ctr., U. Lund, Sweden), J. Elovson and G. Arvidson. *Biochim Biophys Acta* 210(1):15-27, 1970.

Measurements were made of the incorporation of ^{3}H-glycerol into fractions of different degrees of unsaturation within different lipid glycerolipids in male Sprague-Dawley rats whose livers were removed 5 to 300 sec after the intraportal injection of 0.25 mC ^{3}H-glycerol in saline. The amount of isotope in phosphatidic acids and in diacylglycerols exhibited peaks at 20 to 30 and 30 to 60 sec, resp., while the labeling of triacylglycerols, phosphatidylcholines and phosphatidylethanolamines rose continually. About 1% of the total lipid radioactivity was found in other lipids. The turnover rates of different phosphatidic acids and diacylglycerols ranged between 0.022 and 0.055 sec^{-1}. Over the first 60 sec the distribution of radioactivity among different phosphatidic acids was constant and was close to that among diacylglycerols and the ratio between the rate constants for the conversion of dienoic and tetraenoic diacylglycerols into the corresponding phosphatidylcholines was 1:2. In the synthesis of phosphatidylethanolamines the ratio between rate constants for the conversion of dienoic and hexaenoic diacylglycerols was 1:20. The most unsaturated triacylglycerols exhibited a higher turnover rate than other triacylglycerols. Both in phosphatidic acids and diacylglycerols saturated-monoenoic, saturated-dienoic and highly unsaturated fractions constituted about 75% of the mass. In the three major phosphatidic acid fractions, saturated and unsaturated fatty acids amounted to approximately 50% each of the fatty acids.

5561 RATE OF RNA TURNOVER IN RAT LIVER IN RELATION TO INTAKE OF PROTEIN. *(E.)* Erwonwu, C. O. (Hlth. Sci. Dept., U. Washington, Seattle) and H. N. Munro. *Arch Biochem Biophys* 138(2):532-539, 1970.

The turnover of liver RNA was measured by following the rate of loss of label from liver ribosomal RNA after injection of ^{3}H-orotic acid (20-50 μC per animal i.p.) in rats fed normal and protein-deficient diets. Total liver RNA in rats given the normal diet (15g/day) rose 1%/day and radioactivity loss indicated a fractional degradation of 26%/day (the fractional rate of synthesis was 27%/day). Total liver RNA in rats on the protein-free diet (15g/day) decreased 3%/day and radioactivity loss indicated a 17% degradation (the fractional synthesis was 14%/day). When liver RNA turnover was examined during the transition period from an adequate diet to a protein-deficient diet, the decrease of total RNA occurred in 2 phases with a 10% drop/day for the first 2 days and a 5% drop/day thereafter compared to the steady 1% increase in the controls. Radioactivity loss was 43%/day (fractional rate of synthesis 33%/day) for the first 2 days and then dropping off to 15%/day compared to the steady loss in the controls of 21%/day (fractional rate of synthesis was 22%/day), indicating that the immediate loss of liver RNA after dietary protein deprivation is due to the sudden acceleration of RNA breakdown which then slows down to less than the control rate. Examination of ribosome aggregates in protein-deficient rats revealed decreased numbers of monosomes and disomes as well as lower total concentration/g liver.

5562 STIMULATION OF FETAL RAT LIVER TYROSINE AMINOTRANSFERASE ACTIVITY *IN UTERO* BY 3':5'-CYCLIC NUCLEOTIDES. *(E.)* Linarelli, L. G. (Mercy Hosp., Pittsburgh, Pa.), J. L. Weller and W. H. Glinsmann. *Life Sci* 9(9):535-539, 1970.

The effect of 3':5'-cyclophosphate esters of guanosine and inosine, 125 μg, the dibutyryl derivative of adenosine 3':5'-monophosphate, 125 μg, glucagon, 50 μg, or saline (control) on liver tyrosine aminotransferase activity was studied after i.p. administration to rat fetuses *in utero* 5 hr before cesarean section delivery. Guanosine and inosine 3':5'-monophosphate increased tyrosine aminotransferase activity in fetal liver and the increase was similar to that produced by glucagon or dibutyryl adenosine 3':5'-phosphate. An increase in the basal levels of liver tyrosine aminotransferase activity also occurred shortly after birth. The action of inosine 3':5'-phosphate on liver tyrosine aminotransferase activity, coupled with its activation effect on glycogen synthetase kinase in liver homogenates, indicates the primary importance of 3':5'-phosphodiester bond in the action of adenosine and guanosine 3':5'-monophosphate.

5563 THE EFFECTS OF CERTAIN BARBITURATES ON THE HEPATIC PORPHYRIN METABOLISM OF RATS. *(E.)* Moore, M. R. (Western Infirm., Glasgow, Scotland), V. Battistini, A. D. Beattie and A. Goldberg. *Biochem Pharmacol* 19(3):751-757, 1970.

The effect of 9 different barbiturates (Dial, allobarbitone, quinalbarbitone, barbitone, pentobarbitone, phenobarbitone, butabarbitone, thiopentone, and amylobarbitone) on hepatic porphyrin metabolism and hepatic δ-amino-levulinic acid dehydrase activity was measured in normal male Sprague-Dawley rats maintained on standard laboratory diet and given p.o. or i.p. injections of one of the barbiturates at anesthetic doses at 24 hr intervals for 6 days. Control animals received corresponding injections of saline. Following treatment, the livers were removed under ether anesthesia, chilled in cold saline, and aliquots were removed for enzyme and porphyrin assay. The parameters measured on each liver were weight, δ-amino-levulinic acid synthetase, δ-amino-levulinic acid dehydrase, coproporphyrin, and protoporphyrin. None of the barbiturates tested caused any significant change in liver weight or in rat body weight, however δ-amino-levulinic acid synthetase activity was elevated by all barbiturates. δ-Amino-levulinic acid synthetase activity was increased from a baseline level of 0.576 ± 0.208 μg/g/hr to 1.916 ± 0.259 by Dial, to 1.452 ± 0.124 by allobarbitone, and to 0.985 ± 0.84 - 1.440 ± 0.112 by all the other barbiturates. Hepatic δ-amino-levulinic acid dehydrase activity was increased only by Dial, from a control value of 11.34 ± 1.69 mg/g/hr to 13.48 ± 1.19 mg/g/hr. Hepatic coproporphyrin was elevated from a control level of 0.111 ± 0.050 μg/g to 7.50 ± 0.700 μg/g by Dial, and to 1.03 ± 0.610 μg/g by quinalbarbitone. The barbiturates were classified into 4 significantly different groups, based upon urinary coproporphyrin excretion. In the first group (Dial) the hepatic synthetase activity was greater than in the second group (allobarbitone and quinalbarbitone) ($P<0.001$); the activity in the second group was greater than in the third group (phenobarbitone, barbitone and pentobarbitone) ($P<0.05$) and the activity in the third group was greater than in the fourth group (thiopenton amylobarbitone and butobarbitone) ($P<0.001$), which was greater than activity in the control group ($P<0.001$). The results offer direct evidence for contraindication of any barbiturates in cases of porphyria.

5564 EFFECT OF CLOFIBRATE AND 1-METHYL-4-PIPERIDYL BIS (p-CHLOROPHENOXY) ACETATE (SANDOZ 42-348) ON STEROID AND DRUG METABOLISM BY RAT LIVER MICROSOMES. *(E.)* Salvador, R. A. (Wellcome Res. Lab., Tuckahoe, N. Y.), S. Haber, C. Atkins, B. W. Gommi and R. M. Welch. *Life Sci* 9(7):397-407, 1970.

The concentration of triglyceride in serum was reduced markedly in rats administered either clofibrate (0.25%), 1-methyl-4-piperidyl bis-(p-chlorophenoxy) acetate (Sandoz 42-348) (0.05%) or chlorcyclizine (0.01%) in the diet for 21 days. There was a smaller reduction in serum cholesterol in clofibrate and Sandoz 42-348 treated rats, which was unchanged in rats receiving chlorcyclizine. There was a small, but significant increase in serum cholesterol in rats treated with phenobarbital (0.05%), while serum triglyceride was unchanged in these animals. The concentration of phospholipid in serum was reduced only in rats administered Sandoz 42-348. Liver weight increased in rats receiving phenobarbital, clofibrate, or Sandoz 42-348. Clofibrate and Sandoz 42-348 induced in liver microsomes the formation of the enzyme system which metabolizes testosterone-4-C^{14} to more polar metabolites, while the enzyme systems which metabolize pentobarbital-2-C^{14} and 3,4-benzpyrene were not affected.

5565 OXIDATION OF CHOLESTEROL BY RAT LIVER MITOCHONDRIA: EFFECT OF N-γ-PHENYLPROPYL-N-BENZYLOXY ACETAMIDE. *(E.)* Kritchevsky, D. (Sch. Vetr. Med., U. Pennsylvania, Philadelphia) and S.A. Tepper. *Arzneimittelforschung* 20(4):584-585, 1970.

The hydroxylamine derivative, N-γ-phenylpropyl-N-benzyloxy acetamide (W-1372), when fed to male Wistar rats (average starting wt. 172 g) at the 0.3% level for 3 weeks caused slightly reduced weight gain and considerable enlargment of the liver. W-1372 did not affect serum cholesterol levels in these normocholesteremic rats, but distinctly reduced both serum triglyceride and phospholipid levels. The livers of rats fed W-1372 had somewhat higher levels of cholesterol and phospholipid than those of normal rats but their liver triglyceride levels were significantly higher. On the basis of oxidation per g of liver and on comparison of gross oxidation, suitably fortified mitochondrial preparations from livers of rats fed 0.3% W-1372 oxidized 24% and 74% more, resp., cholesterol-26-^{14}C to $^{14}CO_2$ than did normal preparations. When the levels of oxidation were compared on the basis of equivalent levels of mitochondrial protein, no difference was observed.

5566 INTERACTION OF DRUGS, STEROIDS AND FATTY ACIDS WITH LIVER-MICROSOMAL CYTOCHROME P-450. *(E.)* Kupfer, D. (Biochem. Inst., U. Stockholm, Sweden) and S. Orrenius. *Europ J Biochem* 14(2):317-322, 1970.

Microsomes isolated from livers of male Sprague-Dawley rats were used to study the interaction of various substances with the cytochrome P-450 containing monoxygenase system. The conversion of triamcinolone acetonide into 6β-hydroxy triamcinolone acetonide by rat liver microsomes supplemented with NADPH was linear with time, up to 30 min of incubation. A linear relationship was observed between the amount of 6β-hydroxy triamcinolone acetonide formed in 20 min of incubation and the concentration of liver microsomes in the range examined. A double reciprocal plot of the velocity of 6β-hydroxy triamcinolone acetonide formation versus triamcinolone concentration yielded a K_m of 140 μM. Triamcinolone acetonide, testosterone, and laurate interfered with the type I spectral changes produced by the addition of hexobarbital and ethylmorphine to microsomal suspensions that these substrates bind to a common cytochrome P-450 species. Substrates producing a type I spectral change with liver microsomes, enhanced the rate of NADPH-linked cytochrome reduction. Triamcinolone acetonide did not elicit a type I spectral change, did not stimulate the rate of cytochrome reduction but did interfere with the stimulation of this rate by hexobarbital and aminopyrine. Substrates of the liver-microsomal monoxygenase system studied seemingly interact with a single cytochrome P-450 species and the competitive inhibition they exert on each other's metabolism may be related to an interference with the binding to cytochrome P-450.

5567 INHIBITION OF LIVER AMYLASE SYNTHESIS BY CYANIDE: PROTECTIVE EFFECTS OF METHEMOGLOBIN AND THIOSULFATE. *(E.)* McGeachin, R. L. (U. Louisville Sch. Med., Ky.), B. A. Potter and R. M. Atherton. *Biochem Pharmacol* 19(3):663-667, 1970.

Inhibition of liver amylase synthesis by cyanide and protective effects of inhibition by methomoblobin and thiosulfate were studied in isolated perfused livers of Sprague-Dawley rats. Addition of 1-2 mg (2-4 x 10^{-4}M final concentration) of cyanide to perfusing blood had little effect on amylase production. (Normal amylase production is approximately +30 to +40 units/g of liver/4-hr perfusion period.) When 5-10 mg (10^{-3} to 2 x 10^{-3}M) amounts of cyanide were added, amylase synthesis was markedly or completely inhibited (+11.5 to -15 units/g liver). Lack of oxygen along with addition of cyanide further inhibited amylase synthesis (+1.9 to -7 units/g liver); addition of 10 mg cyanide (single dose) gave lower rates of amylase synthesis than when added in divided doses. Inhibiting effects of cyanide on amylase synthesis were blocked by addition of sodium nitrate to system; protective effect was apparently due to methemoglobin formation. Addition of sodium thiosulfate also afforded protection against toxic effects of cyanide. Ten mg of cyanide alone produced inhibition of amylase synthesis to -15 units/g of liver, but addition of 10 mg thiosulfate 5 min after 10 mg cyanide restored bile formation and eventually increased plasma amylase levels. Thiosulfate alone showed no marked inhibitory effects.

5568 EFFECT OF INDOSPICINE ON INCORPORATION OF L-ARGININE-^{14}C INTO PROTEIN AND TRANSFER RIBONUCLEIC ACID BY CELL-FREE SYSTEMS FROM RAT LIVER. *(E.)* Madsen, N. P. (Dept. Path., U. Melbourne, Australia), G. S. Christie and M. P. Hegarty. *Biochem Pharmacol* 19(3):853-857, 1970.

The effect of indospicine on incorporation of L-arginine^{-14}C into protein and transfer RNA by all free systems from rat (female Sprague-Dawley) liver was studied by liquid scintillation counting. A preliminary experiment to determine the effect of indospicine treatment of the whole animal on incorporation of ^{14}C-arginine into protein in a hepatic all-free system gave results (223 and 422 cpm/mg microsomal protein, treated and control rats, resp.) which, together with the depressed incorporation resulting from the addition of treated supernatant to control microsomes, suggested that a factor in the supernatant fraction of the treated rats was depressing incorporation of ^{14}C-arginine into protein in the all-free system. The microsomal RNA/protein ratio was unaltered by the treatment (mean values for 3 determinations: 0.132 for both control and treated groups), thus indicating that the microsomal fraction was not the site of inhibition. In the presence of indospicine (1.1 mM)^{14}C-arginine incorporation into protein in the all-free system was decreased (44%). The effect of indospicine was shown to be non-linearly concentration-dependent. As the amount of arginine in the reaction mixture was raised, the extent of the inhibition of incorporation due to indospicine was greatly reduced (indospicine (1.1 mM) and arginine (.071 mM), 44% inhibition; indospicine (1.1 mM) and arginine (2.83 mM), 2% inhibition). The formation of ^{14}C-arginyl-*t*RNA was inhibited by indospicine (10.0 mM) completely *in vitro* while formation of ^{14}C-leucyl-*t*RNA was not impaired.

5569 REGULATION OF GLYCOLYSIS IN BIOTIN-DEFICIENT RAT LIVER.

(E.) Mistry, S. P. (Dept. Anim. Sci., U. Illinois Urbana-Champaign) and A. D. Deodhar. *Life Sci* 9(10):581-588, 1970.

The regulation of glycolysis and the sites of enzyme involvement were studied in the livers of control and biotin-deficient rats. Biotin deficiency was produced in male Sprague-Dawley rats (35 to 40 g) by feeding an egg-white diet for 6 to 7 weeks, while control rats received 100 μg of biotin on alternate days. The activities of rate-limiting enzymes, and the levels of glycolytic intermediate products were determined by spectrophotometric and colorimetric methods in the rapidly frozen livers from control and biotin-deficient rats in the fed state. There was no significant change in the activity levels of glucokinase, phosphofructokinase and pyruvate kinase in biotin-deficient rat livers. However, pyruvate carboxylase activity (μmoles CO_2 fixed/g liver/min) in deficient livers was markedly decreased to 0.38 ± 0.04 from a control value of 4.36 ± 0.59. The levels of glucose-6-phosphate and fructose-6-phosphate were unchanged in deficient liver, but fructose-1,6-diphosphate and dihydroxyactone phosphate levels (nanomoles/g liver) increased to 58 ± 4 and 114 ± 14, resp., from control values of 28 ± 2 and 50 ± 4. Concentrations of 3-phosphoglycerate, 2-phosphoglycerate and phosphoenol-pyruvate were not changed in biotin-deficient livers, but pyruvate levels (nanomoles/g liver) rose to 1345 ± 188 from a control level of 188 ± 18, and lactate levels rose to 5100 ± 320, from a control value of 2508 ± 330. The increase of fructose-1,6-diphosphate levels, consequent to unchanged levels of hexose monophosphate, indicated an *in vivo* stimulation of phosphofructokinase. The citrate levels in biotin-deficient livers was lowered to 87 ± 8 nanomoles/g liver, which represented only 29% of the control value of 340 ± 21 nanomoles/g liver. The lowered citrate level was not adequate to exert control on phosphofructokinase activity. In addition to the primary block in pyruvate utilization, glycolysis seemingly is also enhanced in biotin-deficient rat liver.

5570 ACTION OF SOME ANTIBIOTICS ON THE EXTRA-HEPATIC BILIARY TRACT: VII. DICLOXACILLIN.

(E.) Benzi, G. (Dept. Pharmacol., U. Pavia, Italy) and E. Arrigoni. *Arch Int Pharmacodyn* 184(213-266, 1970.

The effects of dicloxacillin and several other antibiotics on the terminal bile duct were investigated in several animal species both *in vitro* and *in situ*. Dicloxacillin action was tested on the calf bile duct in the normal state, hypertonized by barium chloride (4.6 μg/ml), carbachol (0.13 μg/ml) or histamine (0.16 μg/ml) or pretreated with rifamycin on isolated gall bladders from the guinea pig and *in situ* bile duct preparations from the guinea pig, cat, dog and monkey was also studied. Dicloxacillin induced relaxation of the calf bile duct both in the normal and hypertonized states. Dicloxacillin (160 μg/ml) induced 60.5% inhibition against barium chloride compared with 15.2% against carbachol and 7.1% inhibition of histamine. In the isolated guinea pig and cat gall bladder, dicloxacillin (0.062-32 μg/ml), increased tone and motility of the normal organ. Perfusion of the antibiotic through the terminal duct of the guinea pig (2-256 μg/ml), cat (250-3000 μg/ml), dog (200-2000 μg/ml) and monkey (200-2000 μg/ml) induced an increase in biliary flow. Dicloxacillin was also found to reduce the constrictive action of rifamycin or erythromycin (125-500 μg/ml) and to enhance the relaxing action of ampicillin and aminosidin.

5571 QUALITATIVE AND QUANTITATIVE STUDIES ON THE METABOLISM OF A SERIES OF AROMATIC HYDROCARBONS BY RAT LIVER PREPARATIONS.

(E.) Sims, P. (Roy. Cancer Hosp., London, England). *Biochem Pharmacol* 19(3):795-818, 1970.

Livers from male rats injected i.p. with 5 mg of 3-methylcholanthrene 48 hr before decapitation were used for qualitative and quantitative studies on the metabolism of 11 tritiated hydrocarbons (phenanthrene, pyrene, chrysene, benzo[a]anthracene, dibenz[a,h]anthracene, dibenz[a,c]anthracene, benzo[a]-pyrene, benzo[e]pyrene, 3-methylcholanthrene, 7-methylbenz[a]anthracene and 7,12-dimethylbenz[a]-anthracene. Using liver homogenates of 3-methylcholanthrene-treated rats, the qualitative studies showed that all the major ethyl acetate-soluble metabolites of these hydrocarbons were accounted for and in most cases the structure of the metabolites was confirmed. The quantitative studies, using liver homogenates or microsomes from normal or 3-methylcholanthrene-treated rats, showed increases in the amounts of metabolites formed from the liver preparations of the treated animals as compared with those from the normal animals. Pyrene, chrysene, and benzo[a]pyrene were less readily metabolized than many of the other hydrocarbons. When the amounts of K-region dihydrodiol formed were expressed as percentages of the total metabolism, the carcinogenic hydrocarbons, dibenz[a,h]anthracene, benzo[a]pyrene, 3 methylcholanthrene, 7-methylbenz-

[a]anthracene and 7,12-dimethylbenz[a]anthracene yielded relatively less K region products than the inactive or weakly active hydrocarbons, phenanthrene, pyrene, benz[a]anthracene and benzo[a]pyrene. Repeated attempts to show the metabolic formation from chrysene of the K-region dihydrodiol, 5,6-dihydro-5,6-dihydroxychrysene were unsuccessful. The relative amounts of the K-region dihydrodiols formed by rat-liver homogenates were less than those formed by rat-liver microsomes.

5572 REGULATION OF PHOSPHOENOLPYRUVATE METABOLISM IN MITOCHONDRIA FROM GUINEA PIG LIVER. *(E.)* Garber, A. J. (Temple U. Sch. Med., Philadelphia, Pa.) and F. J. Ballard. *J Biol Chem* 245(9):2229-2240, 1970.

The regulation of phosphoenolpyruvate metabolism was studied in liver mitochondria of guinea pigs. 2,4-dinitrophenol reduced phosphoenolpyruvate formation owing to deficiency of intramitochondrial ATP and their reduction was not produced by simultaneous substrate level phosphorylation of GDP. Alterations (by ketone bodies) of the oxidation-reduction state of intramitochondrial pyridine nucleotides produced large changes in rates of phosphoenolpyruvate formation, citrate synthesis, and malate formation. The ultimate source of high energy phosphate for phosphoenolpyruvate synthesis seemingly is the intramitochondrial pool of ATP rather than the substrate level phosphorylation of GDP. The ATP/ADP ratio and kinetic behavior of nucleoside diphosphokinase controlled the rate and direction of phosphoenolpyruvate metabolism. A second control factor for phosphoenolpyruvate synthesis is the oxidation-reduction state of pyridine nucleotides acting upon the equilibrium between malate and oxalacetate.

5573 INHIBITION BY DEXTRAN SULFATE OF 2,4-DINITROPHENOL-ACTIVATED ADENOSINE TRIPHOSPHATASE IN ISOLATED RAT LIVER MITOCHONDRIA. *(E.)* Ogata, E. (1st Dept. Intern. Med., U. Tokyo, Japan) and K. Kondo. *Biochem Biophys Res Commun* 39(5):911-917, 1970.

Significant inhibition of 2,4-dinitrophenol-activated adenosine triphosphatase (DNP-activated ATPase) by low molecular weight dextran sulfate (1.2 mg/ml) was demonstrated in isolated rat-liver mitochondria in a sucrose medium. Similar inhibition was produced with dextran sulfate of high molecular weight. Inhibition depended not only on dextran sulfate concentration but also on that of ATP and was competitive between dextran sulfate and ATP on the active site(s) of DNP-activated ATPase. Dextran sulfate caused slight stimulation of basal mitochondrial ATPase in a medium lacking DNP: 0.20 ± 0.06 in absence, and 0.43 ± 0.08 (mean ± S.E., m = 4) μmoles/Pi/16 min/mg protein, in presence of 1.0 mg dextran sulfate/mg mitochondrial protein. Dextran sulfate produced a similar inhibition of ATPases activated either by other uncouplers or treatments that induced an energy-requiring cation translocation. ATPases activated by detergents, osmotic shock, or freezing-and-thawing were not affected by dextran sulfate. The effects of dextran sulfate were largely prevented or reversed by raising ionic strength or pH of reaction medium (addition of 0.3 mg of dextran sulfate per mg mitochondrial protein produced 73% inhibition at pH 6.9 and 46% at pH 7.5). Dextran sulfate seemingly interacts electrostatically with positively-charged loci on mitochondrial membranes, resulting in a decrease in ATP penetration across the mitochondrial membranes.

5574 MODIFICATIONS OF THE INCORPORATION OF TRITIATED URIDINE INTO HEPATIC RNA IN THE WISTAR RAT FOLLOWING PROLONGED ORAL ADMINISTRATION OF ETHANOL. *(Fr.)* Combescot, C. (Fac. Med. Pharm. Tours, France), M. T. Courte, F. Reynouard and J. Weill. *C R Soc Biol* 163(11):2410-2412, 1969.

The effect of prolonged alcohol administration on protein synthesis at the cellular level was studied in 80 rats, 50 of which had their pure drinking water replaced by a 9% ethanol solution for varying periods of time (8 days, 3 weeks, 1 month, or 3 months). Two hr before sacrifice, each animal received an i.p. injection of 0.5 mC of tritiated uridine. The mean number of silver particles (RNA) observed in controls was 50 per 300 hepatic cells, and in alcohol treated rats up to 700 particles per 300 cells were observed, revealing an increase in the synthesis of RNA in the hepatic parenchyma, seemingly due to adrenocortical stimulation.

5575 INCORPORATION OF VARIOUS HYDROGEN PRECURSORS INTO TOTAL FATTY ACIDS AND THE FATTY ACIDS OF DIFFERENT CELLULAR FRACTIONS OF THE PERFUSED RAT LIVER. *(Fr.)* Rous, S. (Inst. Med. Biochem., U. Geneva, Switzerland) and L. Aubry. *Bull Soc Chim Biol* 52(4):411-420, 1970.

Incorporation of precursors of fatty acids (tritiated and ^{14}C labeled glucose, succinate and acetate) was studied in perfused normally-fed rat livers. After equilibration, precursors were added to the perfusion medium, and livers were removed 30 min later to be immediately saponified in alcoholic KOH. Fatty acids were isolated from homogenized tissue, and their radioactivity measured. In total fatty acid synthesis, acetate was incorporated more than any of the labeled precursors; succinate incorporation was less than a tenth that of acetate, with tritiated glucose contributing minimally to fatty acid synthesis (but to an equal extent among forms tritiated at carbons 1 and 6, and 6-^{14}C glucose); 2-^{3}H acetate was utilized five times as much as 2-^{14}C acetate. Effects of excess NADH on tritiated succinate/^{14}C acetate ratio were not significant (the coenzyme inhibiting incorporation of both); excess NADPH produced significant change in this ratio, inhibiting only incorporation of tritiated succinate (the presence of a microsomal succinodehydrogenase could explain this). Of the cellular fractions, microsomes were involved in 50% of incorporation; mitochondria and supernate in the remainder. Ratios of specific activities of fatty acid/mg protein indicate that hydrogen atoms of succinate may be used for fatty acid synthesis in mitochondria, microsomes, and supernate.

5576 THE ENZYMATIC OXIDATION OF GLUTATHIONE IN RAT LIVER HOMOGENATES.

(E.) Jocelyn, P. C. (Dept. Biochem., U. Edinburgh, Scotland). *Biochem J* 117(5):947-949, 1970.

The nature of the oxidation of glutathione (GSH) added to rat liver homogenates (the mixture being incubated aerobically) was investigated. A loss in GSH of 0.77 ± 0.37 μmol/ml was observed 30 min after incubation at 37°C with a 10% homogenate in phosphate saline. The loss due to oxidized glutathione (GSSG) was prevented by previous dialysis of the homogenate (loss: 0.03 μmol/ml), addition of a protein free filtrate (loss: 0.08 μmol/ml), and previous heating (100°C) of the dialysed homogenate (loss: 0.07 μmol/ml). The aerobic oxidation of GSH was restored by a mixture of the protein-free filtrate and the dialysed homogenate (0.68 μmol/ml). The oxidation was not inhibited by EDTA, fluoride, azide or carbon monoxide (% loss of GSH: 95, 97, 101 and 100, resp.) but was inhibited by cyanide, arsenite and diethyldithiocarbamate (at high concentration) (% loss of GSH: 34, 49, 43, resp.). Addition of 2-amino-4-hydroxy-6-formylpteridine almost completely inhibited the oxidation (% loss of GSH: 9). With cysteine and homocysteine, both protein-free filtrate and dialysed homogenate separately induced more oxidation than that found in phosphate saline, but the oxidation induced by the mixture was greater still. Hypoxanthine, which has no effect on GSH in buffer, increased its loss when added to dialysed homogenate and to an extent that increased with increasing hypoxanthine concentration. As in undialysed homogenate, the GSH lost was quantitatively converted into GSSG, as shown by subsequent enzymatic reduction.

5577 THE METABOLISM *IN VITRO* AND HEPATIC MICROSOMAL INTERACTIONS OF SOME ENANTIOMERIC DRUG SUBSTRATES.

(E.) Hewick, D.S. (British Indust. Biol. Res. Ass., Carshalton, Surrey, England) and J.R. Fouts. *Biochem J* 117(5):833-841, 1970.

Hepatic microsomes from phenobarbitone-pretreated male rabbits were prepared to study enantiomers ((+)-amphetamine, (-)-amphetamine, (+)-benzphetamine and (-)-benzphetamine), that are metabolized at different rates, with respect to their microsomal difference spectra and their effects on cytochrome c reduction, cytochrome P-450 reduction and NADPH oxidation. (+)-Benzphetamine (.2-1.0 mM) was N-demethylated faster (30-35%) than (-)-benzphetamine, but the apparent Michaelis constants for the two enantiomers were similar, (.35 ± .05 mM and .30 ± .03 mM, resp.), (-)-Amphetamine was deaminated 200% faster than (+)-amphetamine. The benzphetamine enantiomers gave qualitatively and quantitatively identical type I microsomal difference spectra (peak, 433 nm; trough, 425 nm) indicating identical apparent binding affinities for microsomes and identical spectral changes at maxima ($\Delta E_{\max}$ values). The amphetamine enantiomers gave qualitatively identical type II microsomal difference spectra (peak, 433 nm; trough, 395 nm), but the type II spectral data indicated that (+)-amphetamine had a markedly higher apparent binding affinity than (-)-amphetamine for microsomes. The amphetamine enantiomers gave identical $\Delta E_{\max}$ values. The benzphetamine enantiomers (0.5 mM) enhanced the rate of microsomal cytochrome P-450 reduction by NADPH by 400-500%, (+)-benzphetamine enhancing the rate 20-25% more than (-)-benzphetamine. The amphetamine enantiomers decreased the rate of microsomal cytochrome P-450 reduction by NADPH. (+)-Amphetamine (2 mM) decreased the rate more (26% compared to 12%), than (-)-amphetamine. And all four enantiomers enhanced microsomal NADPH oxidation.

5578 PREMATURE FORMATION OF GLUCOKINASE IN DEVELOPING RAT LIVER.

(E.) Jamdar, S. C. (Harvard Med. Sch., Boston, Mass.) and O. Greengard. *J Biol Chem* 245(11):2779-2783, 1970.

The role of hydrocortisone acetate and additional factors in the regulation of the levels of glucokinase during its normal developmental accumulation and its premature formation was studied by enzyme assay of liver homogenates. Glucokinase that appears in normal rat liver after the sixteenth day (adult level-30 days) was evoked prematurely (.27 ± .09 units/g; adult level standard: 1.03 ± .04 units/g, a week earlier by 3 injections of hydrocortisone (50 μg/day for 3 days) followed by an injection of glucose. Hydrocortisone alone had a negligible effect on 9 to 10 day old rats. Thus, the prematurely evoked 0.27 unit of glucokinase after hydrocortisone and glucose injection do not accumulate gradually during the days of treatment but within 5 hr after the injection of glucose. During these 5 hr, concomitant RNA-synthesis is apparently required since actinomycin inhibited glucokinase activity (.05 ± .02 units/g). Insulin may also be required since an insulin inhibitor, mannoheptulose, also inhibited glucokinase activity (.07 ± .03). Estradiol, administered before (6 hr) each hydrocortisone injection, inhibited glucokinase activity (.08 ± .02 units/g), but given simultaneously with hydrocortisone was not inhibitory (0.22 ± .03) in 10 day old rats. The normal development accumulation of glucokinase was partially inhibited by adrenalectomy (0.14 ± .03; control: 0.33 ± 0.1), by preventing access to solid food, and by treatment with estradiol (at 25 days: 0.36 ± 0.08; control 0.64 ± 0.06). Adrenocortical secretion (known to increase after the tenth postnatal day) and the intake of solid food appear to be the physiological stimuli that trigger the formation of glucokinase in normal rats.

5579 SYNTHESIS OF CHOLESTEROL FROM GLUCOSE-$U^{14}C$ IN THE LIVER AND EXTRAHEPATIC TISSUES OF THE MOUSE.

(E.) Jansen, G. R. (Dept. Food Sci., Nutr., Colorado St. U., Fort Collins), M. E. Zanetti and C. F. Hutchinson. *Arch Biochem Biophys* 138(2) : 433-442, 1970.

The incorporation of glucose-U-^{14}C (20 μC p.o.) into cholesterol and other sterols (isolated by digitonin precipitation and separated by thin layer chromatography) of the liver and extrahepatic tissues was studied in mice fed a 20% corn oil diet and the same diet supplemented with 1% cholesterol or 1% cholestyramine. With the control diet, more labeled cholesterol (total cpm/mouse) appeared in extrahepatic tissue (4872) than in the liver (823) with 68% of the extrahepatic cholesterol appearing in the gastrointestinal tract, and 63% (4220) of the newly synthesized Δ^7-cholestenal being found in the skin. Dietary cholesterol reduced the level of labeled cholesterol in the liver by 90-98% (823 to essentially 0) and in the carcass by 35% (4872 to 3157) with an overall reduction of 45-55% (5695 to 3157); while dietary cholestyramine raised liver cholesterol 4- to 10-fold (823 to 10490) and carcass cholesterol by 60 to 70% (4872 to 8991).

5580 ETHANOL OXIDATION BY LIVER MICROSOMES: EVIDENCE AGAINST A SEPARATE AND DISTINCT ENZYME SYSTEM. *(E.)* Isselbacher, K. J. (Harvard Med. Sch., Boston, Mass.) and E. A. Carter. *Biochem Biophys Res Commun* 39(3):530-537, 1970.

Liver homogenates from female Sprague-Dawley rats were used to study the mechanism involved in the microsomal oxidation of ethanol *in vitro*. 3-AP-DPN was very effective as a cofactor in the microsomal oxidation of ethanol, yielding an activity of 83% when compared to TPNH. WHen 3-AP-DPN was substituted for DPN, the alcohol dehydrogenase (ADH) activity of the rat liver supernatant increased 4.5 fold. The *in vitro* addition of EDTA, pyrazole and ethanolamine resulted in a 92-100% inhibition of ADH activity and a 50% inhibition of microsomal oxidation of ethanol. While dimethyl sulfoxide and sodium sulfide produced a 50% inhibition of ADH activity and also a decrease in the microsomal oxidation of ethanol. Cyanide and azide (10^{-3}M) produced 100 and 75%, resp., inhibition of catalase activity; under these conditions the microsomal oxidation of ethanol was inhibited 80 and 33%, resp. Following the administration of 3-amino-1,2,4-triazole (1 g/kg i.p.) to rats *in vivo* there was a 90% decrease in hepatic catalase activity and a 54% inhibition of the microsomal oxidation of ethanol. The *in vitro* addition of potassium cholate (1.2 x 10^{-2}M) to the microsomal system produced an 80% inhibition of both TPNH oxidase and the microsomal oxidation of ethanol; under these conditions, potassium cholate had no effect on either ADH or catalase activities. The addition of $HgCl_2$ or $CuCl_2$ (2 x 10^{-4}M) to microsomal suspensions completely inhibited ADH, catalase, and TPNH oxidase activities, and also the oxidation of ethanol. The TPNH and O_2 dependent metabolism of ethanol by microsomes can be readily explained by the coupled and combined activities of TPNH oxidase, catalase and ADH.

5581 STIMULATION OF HEPATIC MICROSOMAL ANILINE p-HYDROXYLASE ACTIVITY BY DIMETHY SULFOXIDE (DMSO) ADMINISTRATION TO RATS. *(E.)* Stock, B. H. (Coll. Med., U. Iowa, Iowa City), A. R. Hansen and J. R. Fouts. *Toxic Appl Pharmacol* 16(3):728-739, 1970.

The effect of DMSO administration *in vivo* on the *in vitro* metabolism of aniline, benzphetamine and p-nitrobenzoic acid was studied in sham-operated and in adrenalectomized male Sprague-Dawley rats (170-230 g). Following treatment, all animals were sacrificed, the livers were removed, placed in 1.15% KCl buffered with 0.05 M Tris-chloride (pH 7.5) and subsequently homogenized and centrifuged to prepared microsomal fractions. The para-hydroxylation of aniline, and benzphetamine demethylation were measured and protein assays were made. In rat livers removed 24 hr after i.v. injection of 7.5 ml/kg of DMSO, the rate of para-hydroxylation of aniline in the 9,000 g supernatant was increased from a control level of 42.2 ± 1.3 mμmoles/mg/30 min to a value of 67.6 ± 2.5, and in the microsomes this activity was increased from a control value of 32.7 ± 0.2 to 50.4 ± 2.3. The DMSO injection caused no significant change in the rate of N-demethylation of benzphetamine, or the reduction of p-nitrobenzoic acid, or in the rate of benzpyrene metabolism. Groups of rats were injected with 7.5 ml/kg DMSO at either 24, 12, 6, 3, 1 or 0.25 hr before sacrifice, and the rate of aniline hydroxylation was measured in isolated microsomal fractions. There was a significant increase in aniline metabolism at 3 hr after injection, with an increase in microsomal p-aminophenol formation (mμmole/mg/30 min) from a control level of 32.7 ± 0.2 to 45.2 ± 2.2, which reached a peak effect in 6 - 12 hr, and returned to control levels 48 hr after injection. Administration of DMSO at an i.p. dose of 2 ml/kg twice a day for 3 days to sham-operated or to adrenalectomized rats produced a stimulation of aniline metabolism, but produced no changes in benzphetamine and p-nitrobenzoic acid metabolism or in P_{450} levels. The multiple dose DMSO treatment increased p-aminophenol formation (mμmoles/mg/30 min) in microsomes from control levels of 35.7 ± 1.3 in sham-operated rats and 32.1 ± 0.4 in adrenalectomized rats, to 66.3 ± 5.2 and 59.4 ± 0.6, resp. The multiple dose regimen produced higher levels of activity than the single dose treatment, and there was a dose-response relationship present in both treatment modes. Addition of DMSO directly to the incubation mixture did not stimulate, but rather inhibited aniline metabolism in concentrations greater than 0.02%.

5582 METABOLISM OF L-CARNITINE ESTERS OF β-SUBSTITUTED PALMITIC ACID BY RAT LIVER MITOCHONDRIA. *(E.)* Mahadevan, S. (Anim. Res. Inst., Canada Dept. Agric., Ottawa), M. Malaiyandi, J. D. Erfle and F. Sauer. *J Biol Chem* 245(12):3218-3224, 1970.

The properties and metabolism by rat liver mitrochondria of synthesized L-carnitine esters of β-substituted palmitic acid were investigated. The physical properties (elemental analysis, infrared and nuclear magnetic resonance data) of palmitoyl-L-carnitine (m.p. 151-154°C), β-ketopalmitoyl-L-carnitine hydrochloride (m.p. 121-123°C), β-hydroxypalmitoyl-L-carnitine (m.p. 142-145°C) and trans-2-hexadecenoyl-L-carnitine hydrochloride (m.p. 171.5-172.5°C) were in agreement with theoretical considerations. Incubation with mitochrondria revealed that the synthesized carnitine esters were oxidized more rapidly than the corresponding free fatty acids (in mμmoles acetoacetate/mg protein/20 min, palmitic 76.5 and 27, resp., β-ketopalmitic 82.0 and 12.4, resp., β-ketopalmitic 82.0 and 12.4, resp., β-hydroxypalmitic 39.2 and 3.0, resp., and α,β-unsaturated palmitic 34.0 and 1.3, resp.). Free acids did not stimulate respiration and oxygen uptake was similar for all the carnitine esters (73 to 75 mμg atoms/min/mg) except α,β-hexadecenoyl carnitine which was 30% lower (55.4). Acylcarnitine transferase activity studies revealed the β-keto derivative as efficient a substrate as palmitoyl carnitine (54.8 m moles/min/mg) while the β-hydroxy derivative was 30% lower and the α,β-unsaturated derivative was 80% lower. The β-ketopalmitic acid is nonspecifically and nonenzymatically decarboxylated in the presence of protein to yield pentadecanone.

5583 HEPATIC DRUG METABOLISM IN ZINC-DEFICIENT RATS. *(E.)*

Becking, G. C. (Res. Lab., Food Drug Directorate, Ottawa, Canada) and A. B. Morrison. *Biochem Pharmacol* 19(3):895-902, 1970.

Livers from male Wistar rats placed on zinc-deficient diets were used to study hepatic drug metabolism *in vitro*. Zinc-deficient rats exhibited weight loss, anorexia, decreased urinary excretion of ascorbic acid, and a prolonged pentobarbital sleeping time. There was no significant alteration in drug metabolism *in vitro* prior to 37 days on the zinc-deficient diet and at 37 days, the only change was a lowering of pentobarbital oxidation. There was also a gradual decrease in the rate of aminopyrine metabolism, but no significant alteration in the *N*-demethylation of aminopyrine occurred until 44 to 46 days on the zinc-deficient diet. Nitroreductase activity was significantly reduced after 58 days on the zinc-deficient diet and there was no alteration in the rate of ring hydroxylation at this time. The RNA and protein content of liver microsomes from zinc-deficient rats was essentially the same as in control animals and after 42 days, the cytochrome P-450 content of microsomes was significantly lower than that of the controls. There was no evidence of altered glucose-6-phosphate dehydrogenase or glucose-6-phosphate activities in zinc-deficient rats.

5584 THE EFFECT OF CHAIN LENGTH AND DEGREE OF UNSATURATION OF THE FATTY ACID SUBSTRATE ON THE OUTPUT OF TRIGLYCERIDE BY THE LIVER. *(E.)*

Kohout, M. (Inst. Cardiovasc. Res., Prague, Czechoslovakia), B. Kohoutova and M. Heimberg. *Biochim Biophys Acta* 210(1):177-179, 1970.

The isolated livers of normal male rats (220 to 280 g body weight) when infused *in vitro* with various free fatty acids in equimolar concentrations as complexes with bovine serum albumin at 0.195 ml/min for 4 hr showed triglyceride output that was related linearly to the number of C atoms in the straight-chain saturated fatty acid, with the output increasing as the number of C atoms increased (C_6-C_{18}). The triglyceride output by livers when fatty acid was not infused was not different from that when caproic or caprylic acid was infused, but when infused with any fatty acid having more than 12 C atoms the output was significantly higher. The output after infusion of lauric acid was about twice that obtained after infusion of C_6-C_8 fatty acids. The triglyceride output was also related linearly to the number of double bonds in the C_{18} fatty acid with the output decreasing as the number of double bonds increased. The release of triglyceride after infusion of linoleic and linolenic acids was considerably less than when stearic acid was used.

5585 REVERSIBLE INACTIVATION BY ELEMENTAL SULFUR AND MERCURIALS OF RAT LIVER SERINE DEHYCRATASE AND CERTAIN SULFHYDRL ENZYMES. *(E.)*

Pestana, A. (Ctr. Biol. Invest., CSIC, Madrid, Spain) and A. Sols. *Biochem Biophys Res Commun* 39(3):522-529, 1970.

Preincubation (10 min at 37C) with elemental sulfur (in colloidal suspension) causes a strong inactivation of rat liver serine dehydratase, except when dithioerythritol is present in excess (which prevents and reverses the inactivation). Reduced glutathione can replace, but acts much more slowly than, dithioerythritol as a protective agent, while mercaptoethanol is nearly as effective as dithioerythritol. The inactivation of serine dehydratase by sulfur is very similar in many ways to that obtained with p-chloromercuriphenylsulfonate. K+ ions at physiological concentrations effectively protect the enzyme against inactivation by both sulfur and the mercurial. Alcohol dehydrogenase and 3-hydroxybutyrate dehydrogenase, both sensitive to sulfhydryl reagents, can also be inactivated by elemental sulfur, and this inactivation is also counteracted by thiols. Elemental sulfur can behave as a sulfhydryl poison for a variety of enzymes.

5586 THE FUNCTION OF SUBCELLULAR FRACTIONS IN THE OXIDATION OF GLUTATHIONE IN RAT LIVER HOMOGENATE. *(E.)*

Jocelyn, P. C. (Dept. Biochem, U. Edinburgh, Scotland). *Biochem J* 117(5):951-956, 1970.

The role of subcellular fractions (homogenate, supernatant, microsomes and protein-free filtrate) in the oxidation of glutathione (measured by the method of Pinto and Bartley) was determined in rat liver homogenate. Aerobically, more gluthathione (GSH, μmole/ml) was oxidized in the homogenate (0.71) than in the supernatant (0.08) although if microsomes were added to the same supernatant or if it was preincubated with microsomes the oxidation increased (0.87 and 0.57 resp.). Anaerobically, more GSH was reduced in the supernatant (0.49) than in the homogenate (0.04) and microsomes (added to the supernatant during or before incubation) prevented this reduction. A protein-free filtrate (prepared from the supernatant) combined with the supernatant increased the GSH oxidation (0.52) although the reduction capacity of GSH was absent. The effect of the protein free filtrate was inhibited when a xanthine oxidase-free dialyzed supernatant was used and all the effective fractions had urate oxidase activity so that th GSH oxidation of the liver homogenate may be linked (through glutathione peroxidase) to the reaction of endogenous substrate with xanthine oxidase and of uric acid formed with peroxisomal urate oxidase.

5587 EFFECT OF LITHOCHOLIC ACID AND ANTIBIOTICS ON TISSUE BILE ACIDS IN THE RAT. *(E.)*

Nair, P.P. (Sinai Hosp., Baltimore, Md.), C. Garcia-Lilis and A.I. Mendeloff. *J Nutr* 100(6):698-704, 1970.

The changes in bile acid composition of the liver, bile and intestinal segments was measured in male Wistar rats (200-250 gm) maintained either on standard laboratory diet, on diet with exogenous lithocholic acid (50 mg/day/rat) with or without antibiotics (oxytetracycline, 50 mg/day/rat and succinylsulfathiazide, 20 mg/day/rat), or on diet with both antibiotics. The animals received the experimental diets for 8 days and on the 9th day free-flowing bile was collected for 30 min, then animals were sacrificed and tissues removed and analyzed for primary and secondary bile acid and cholesterol content. Exogenous lithocholic acid induced a specific depression of tissue cholic acid and elevated cholesterol levels. Cholic acid content in rat liver was reduced from a control value of 39.0 ± 8.8% to 24.1 ± 4.4%, in rat bile from a control value of 70.9 ± 1.5% to 29.2 ± 5.2%, in upper intestine from 80.8 ± 4.2% to 30.2 ± 3.1%, and in cecum from 18.3 ± 6.8% to 6.4 ± 1.3% by the dietary lithocholic acid. However the same test diet elevated serum cholesterol levels from a control value of 80.8 ± 7.8 mg/100 ml to 93.0 ± 5.9 mg/100 ml, and raised hepatic cholesterol content from 366 ± 33 mg/100 g to 428 ± 36 mg/100 gm of liver. The concurrent administration of antibiotics only partially prevented the effects of lithocholic acid on the primary and secondary bile acids in the tissues of the intestine, but in the liver the combined lithocholic acid-antibiotic diet reduced cholic acid concentration to 19.7 ± 2.2%, and reduced the hepatic cholesterol levels to 296 ± 23 mg/100 gm but kept the serum cholesterol at a nearly control level of 78.8 ± 2.9 mg/100 ml. Lithocholic acid partially blocked uptake of cholic acid all along the small intestine as reflected by the drop in total bile acids and a reduction in the ratio of cholic acid to chenodeoxycholic acid in animals receiving lithocholic acid. Lithocholic acid, and not its bacterial metabolites, seemingly controls cholic acid biogenesis possibly by inhibiting 12α-hydroxylase.

5588 THE FORMATION OF MONOACYLGLYCEROPHOSPHATE FROM *sn*-GLYCEROL 3-PHOSPHATE BY A RAT LIVER PARTICULATE PREPARATION. *(E.)* Lamb, R. G. (U. North Carolina Sch. Med., Chapel Hill) and H. J. Fallon. *J. Biol Chem* 245(12):3075-3083, 1970.

The product of the esterification reaction of *sn*-glycerol-3-phosphate by a rat liver particulate preparation (16000-105000 X g particles) was identified as monoacylglycerophosphate by thin layer and silicic acid column chromatography in comparison with known standards. An equimolar incorporation of fatty acid and *sn*-glycerol-3-phosphate into the product was shown and the monoacylglycerophosphate was isolated from the incubation mixture (silicic acid chromatography) and used as the substrate for further esterification (with guinea pig liver microsomes and palmitoyl-CoA at pH 7.5) to diacylglycerophosphate. A comparison of relative activities (μmoles formed/15 min) of acyl-CoA thioesters indicated that palmitoyl-CoA was the most active substrate (0.802) followed by linolenoyl-CoA (0.564), palmitoyl-CoA (0.475), oleoyl-CoA (0.422) and stearoyl-CoA (0.340). At pH 6.5, the 1-isomer of the monoacylglycerophosphate was preferentially formed when palmitoyl-CoA was the substrate while the 2-isomer predominates when oleoyl-CoA was the substrate (such specificity may explain the known positional distribution of fatty acids in the glycerolipids).

5589 HISTOCHEMICAL STUDIES OF THE ACTIVITY OF DEHYDROGENASES IN MITOSES DURING THE REGENERATION OF THE LIVER IN THE RAT. *(Fr.)* Dokov, V. K. (Lab. Anat. Histol., U. Liege, Belgium) and M. A. Gerebtzoff. *C R Soc Biol* 163(11):2461-2463, 1969.

Dehydrogenase activity in mitoses during hepatic regeneration following partial hepatectomy was determined histochemically in white rats 16, 18, 24, 30, 48, 66, 72 and 120 hr postoperatively. Maximum cell division was found between the 66th and 72nd hr. Succinate dehydrogenase, isozyme S of lactate dehydrogenase and glucose-6-phosphate dehydrogenase showed intense activity in the chromosomes of cells in all phases of mitosis. Glutamate dehydrogenase activity was only found in prophase. Dehydrogenase activity is seemingly involved in the degradation of glucose and glutamate dehydrogenase seems to be involved in preprophasic chromatin and chromosomes at all stages of somatic mitosis.

5590 HEPATIC MICROSOMAL ETHANOL-OXIDIZING SYSTEM: *IN VITRO* CHARACTERISTICS AND ADAPTIVE PROPERTIES *IN VIVO*. *(E.)* Lieber, C. S. (VA Hosp., Bronx, N. Y.) and L. M. DeCarli. *J Biol Chem* 245(10):2505-2512, 1970.

Characteristics of a hepatic microsomal ethanol-oxidizing system (distinguishable from the alcohol dehydrogenase system) in men and rats were determined in *in vitro* incubations. This system was located in the microsomal fraction, had a pH range of 6.8 to 7.4, required NADPH and oxygen and was inhibited by carbon monoxide. The activity of the system was only slightly lowered (5.2 compared to 11.1 U/mg protein) in male control rats after 3-amino-1,2,4-triazole (1 g/kg i.p.), was unaffected (47.6 compared to 49.1 nmoles/flask in control) after pyrazole (4.4 mmoles/kg intragastrically) and slightly lowered (49.1 to 31.0 nmoles/flask) after azide (10^{-4}M in the incubation mixture); these substances were effective catalase inhibitors so that catalase was probably not involved in this system. Chronic ethanol feeding of the rats for 24 days increased the NADPH-linked ethanol oxidation (248.1 to 368.2 U/g liver in males) and accelerated blood ethanol clearance (25.5 to 38.8 mg/100 ml) suggesting an *in vivo* role for the system which was further substantiated by the continued ethanol metabolism *in vivo* as well as *in vitro* following the pyrazole administration (which strongly inhibits alcohol dehydrogenase).

5591 BIPHASIC EFFECT OF NOREPINEPHRINE IN THE REGULATION OF HEPATIC TYROSINE TRANSAMINASE ACTIVITY. *(E.)* Black, I. B. (Natl. Inst. Mental Hlth., Bethesda, Md.) and J. Axelrod. *Arch Biochem Biophys* 138(2):614-619, 1970.

The biphasic effect or norepinephrine in the regulation of hepatic tyrosine transaminase activity (assayed by a modification of the method of Diamondstone) was observed in adrenalectomized and hypophysectomized rats. Norepinephrine (1 mg/kg s.c.) increased the enzyme activity for the first hr after injection then decreased it below control levels at 3 hr (in hypophysectomized animals as well indicating that the effect is not mediated by growth hormones). Over a range from 1 to 4 mg/kg s.c. norepinephrine increased the transaminase activity (μmoles product/g/hr) 50-70% above control values (67.6) during the first hr, and cycloheximide (50 mg/kg i.p.) given with norepinephrine (1 mg/kg s.c.) completely blocked this increase (77.8 for controls, 137.9 for norepinephrine and 69.8 for norepinephrine with cycloheximide) suggesting enzyme induction, while actinomycin D (1.5 mg/kg i.p.), propranalol or phenoxybenzamine (10 mg/kg i.p.) had no effect on the enzyme activity increase. The depression of enzyme activity 3 hr after norepinephrine injection was maximal at night when transaminase activity is at peak levels (184.1 depressed to 81.6) and no increase at 1 hr was observed when norepinephrine was given at night indicating that the enzyme depression operates independently of the induction. Norepinephrine administered with pyridoxine (100 mg/100 g i.p.) blocked the enzyme induction by pyridoxine hinting at a competition between norepinephrine and the apoenzyme for the pyridoxal-5'-phosphate cofactor.

5592 BIOCHEMICAL ASPECTS OF LIVER REGENERATION. *(Rus.)* Guberniev, M. A. (Inst. Exp. Biol., Acad. Med. Sci., U.S.S.R., Moscow) and E. M. Leikina. *Zh Obshch Biol* 30(4):442-451, 1969.

5593 MECHANISM OF THE INHIBITORY EFFECT OF BARBITUATES ON OROTIC ACID BIOSYNTHESIS IN RAT LIVER SLICES. *(Rus.)* Fitzner, A. B. (U.S.S.R. Acad. Med. Sci., Moscow) and S. R. Mardashev. *Vop Med Khim* 16(1):90-91, 1970.

5594 DYNAMICS OF LIVER REGENERATION AND BIOCHEMICAL CHANGES IN BLOOD AND LIVER CELL PROTOPLASM AFTER PRIMARY AND REPEATED RESECTIONS. *(Rus.)* Repin, Yu. M. (Leningrad Med. Inst. Hyg., U.S.S.R.). *Eksp Khir Anest* 15(2):41-44, 1970.

5595 THE EFFECT OF CARBOCHOLINE AND ADRENALINE ON LIVER CHOLESTEROL BIOSYNTHESIS IN RATS. *(Rus.)* Finagin, L. K. (Inst. Physiol., Kiev St. U., U.S.S.R.). *Biull Eksp Biol Med* 69(3):72-74, 1970.

5596 EFFECTS OF FLAVINS UPON TRYPTOPHAN OXYGENASE ACTIVITY IN THE RAT LIVER. *(Jap.)* Sakuma, R. (Gifu Coll. Pharm., Japan) and R. Shinohara. *Med Biol* 80(4):173-178, 1970.

5597 COLLAGENOLYTIC ACTIVITY IN RAT LIVER. *(Jap.)* Hiroshige, K. (Kyushu U. Sch. Med., Japan). *J Jap Biochem* 41(12):827-836, 1970.

5598 HEPATIC GLUCONEOGENESIS AND GLYCOLYSIS IN CHICKENS FED "CARBOHYDRATE-FREE" DIETS. *(E.)* Allred, J. B. (Inst. Nutr., Ohio St. U., Columbus) and K. L. Roehrig. *J Nutr* 100(6):615-622, 1970.

5599 MICROSOMAL GLUCOKINASE OF RAT LIVER. A REGULATOR ENZYME OF GLYCOLYSIS? *(Fr.)* Berthillier, G. (Fac. Med., Lyon, France) and R. Got. *FEBS Letters* 8(3):122-124, 1970.

5600 CHANGES IN THE TURNOVER OF TERMINAL AMP OF RAT LIVER TRANSFER RNA UNDER THE INFLUENCE OF VARIOUS INHIBITORS OF SYNTHESIS. *(Fr.)* Moule, Y. (Inst. Res. Sci. Cancer, Villejuif, France) and R. M. Landin. *FEBS Letters* 8(4):189-191, 1970.

5601 COMPARISON OF LIVER MICROSOME ENZYME SYSTEMS AND BARBITURATE SLEEP TIMES IN RATS CAGED INDIVIDUALLY OR COMMUNALLY. *(E.)* Dairman, W. (Lederle Lab., American Cyanamid Co., Pearl River, N. Y.) and T. Balazs. *Biochem Pharmacol* 19(3):951-955 1970.

5602 REGULATION OF CHOLESTEROL METABOLISM. *(E.)* Dietschy, J. M. (U. Texas Southwestern Med. Sch., Dallas) and J. D. Wilson. *New Eng J Med* 282(20):1128-1138, 1970.

5603 A COMPARISON OF THE EFFECTS OF HALOTHANE AN METHOXYFLURANE ON THE ISOLATED PERFUSED CANINE LIVER. *(E.)* Strunin, L. (London, England), W. D Walker, R. J. Coultas, J. M. Strunin, A. Reynard and B. R. J. Simpson. *Acta Anaesth Scand* (supp 37): 203-204, 1970.

5604 INDUCTION OF LIVER U.D.P.G.T. BY ETHANOL. *(E.)* Dioguardi, N. (Antonio Migliavacca Ctr. Liver Dis., U. Milan, Italy), G. Ideo, E. Del Ninno and R. De Franchis. *Lancet* 1(7655):1063, 1970.

5605 THE FORMATION OF ANDROGENS IN HUMAN FETAL LIVER *IN VITRO*. *(E.)* Sulcovam, J. (Inst. Care Mother Child, Prague, Czechoslovakia), A. Capkova, S. Rohling and L. Starka. *Experientia* 26(4):419-420, 1970.

5606 GLUTETHIMIDE IN HUMAN BILE. *(E.)* Bates, H. R., Jr. (Dixie Hosp., Hampton, Va.). *Lancet* 1(7655):1059, 1970.

5607 METABOLISM OF DIPHENYLHYDANTOIN BY RAT LIVER MICROSOMES: I. CHARACTERISTICS OF THE REACTION. *(E.)* Kutt, H. (Cornell U. Med. Coll., New York, N.Y.) and K. Verebely. *Biochem Pharmacol* 19(3):675-686, 1970.

5608 "MAC DONALD" DIET. EFFECTS OF A DIET LOW IN CHOLINE AND IN IRON UPON THE GENERAL GROWTH AND HEPATIC WEIGHT IN THE RAT. *(Fr.)* Barthe, J. (Inst. Pasteur, Lyon, France) and J. A. Grimaud. *Path Biol* 18(3-4):153-157, 1970.

5609 HEPATIC METABOLITE PATTERN OF THE ENERGY-LINKED METABOLISM IN "INSTANT DIABETES" AFTER MANNOHEPTULOSE. *(E.)* Mitzkat, H. J. (Med. Coll. Hannover, Germany) and U. Meyer. *Life Sci* 9(10):561-570, 1970.

5610 BIOGENESIS AND TURNOVER OF RAT LIVER PEROXISOMES. *(E.)* Poole, B. (Rockefeller U., New York, N. Y.). *Ann New York Acad Sci* 168(2):229-243, 1969.

- P:Morph (5409)(5410)(5411)(5412)(5415)(5418)(5419)(5420)(5421)(5422)(5423)(5424)(5425)(5427)(5436)(5437)(5438)(5441)(5442)(5445)(5446)(5448)(5449)(5451)(5453)(5454)(5457)(5458)(5459)(5460)(5461)(5463)(5466)(5469)
- P:Absorp (5485)(5493)(5495)(5496)
- P:Gen (5641)
- Diagproc (5682)(5723)(5724)
- D:Stomduo (5789)
- D:Pancreas:Pancreat (5973)
- D:Livbil (5985)(5986)(5987)(5990)(5991)(5994)(5999)(6001)(6006)(6007)(6012)(6014)(6034)(6043)(6047)(6053)
- D:Livbil:A.Nonv.Hep (6055)(6056)(6058)(6059)(6061)(6066)(6069)(6071)(6072)(6075)(6079)(6080)(6081)(6082)
- D:Livbil:A.V.Hep (6984)(6101)
- D:Livbil:Cirrh (6122)(6124)
- D:Livbil:Gallb (6129)(6130)(6154)
- D:Gen:Parasit (6270)

SECRETION AND METABOLISM

Intestine

5611 DIETARY REGULATION OF GLYCOLYTIC ENZYMES: VII. EFFECT OF DIET AND ORAL FOLATE UPON FOLATE-METABOLIZING ENZYMES IN RAT JEJUNUM. *(E.)* Stifel, F. B. (Fitzsimons Gen. Hosp., Denver, Colo.), R. H. Herman and N. S. Rosensweig. *Biochim Biophys Acta* 208(3):381-386, 1970.

The effects of diet, fasting and oral folate on the activities of 4 enzymes involved in rat (male Holtzman) jejunal folate metabolism were investigated by enzyme assay. All enzyme activities were expressed as increments in A^{355}nm which spectrophotometrically measures the amount of $N^{5,10}$-methenyltetrahydrofolate. Dietary carbohydrate (glucose and fructose) produced significant increases in the activities of 3 folate-metabolizing enzymes [glutamate formiminotransferase (.048 and .068, resp.), serine hydroxymethyltransferase (.324 and .381, resp.) and methylenetetrahydrofolate dehydrogenase (.729 and .820, resp.)] when compared with the activities in the casein-fed (.018, .273 and .552, resp.) or fasted (.007, .094 and .349, resp.) rats. Only the glutamate formiminotransferase activity showed a significant differential response ($P < 0.01$) to glucose and fructose, with the activity being highest in the fructose-fed rats. The formyltetrahydrofolate synthetase activity was highest in the casein-fed rats, less in the fasted rats and least in the carbohydrate-fed rats (.067, .057, .029, .030, resp.). A low p.o. dose (200 μg) of folate increased the activity of glutamate formiminotransferase (control: .063; treatment: .080), serine hydroxymethyltransferase (control: .187; treatment: .335) and methylenetetrahydrofolate dehydrogenase (control: .498; treatment: .601). However, only glutamate formiminotransferase activity showed an increased response (.131) to a high p.o. dose (2000 μg) of folate. Formyltetrahydrofolate synthetase activity was not significantly changed by either dose of oral folate. The adaptability of several folate-metabolizing enzymes to diet and oral folate may be examples of substrate stabilization and/or cofactor induction.

5612 CALCIUM AND PHOSPHORUS METABOLISM IN RELATION TO LACTOSE TOLERANCE. *(E.)* Condon, J. R. (St. George Hosp., London, England), J. R. Nassim, F. J. C. Millard, A. Hilbe and E. M. Stainthorpe. *Lancet* 1(7655):1027-1029, 1970.

The effect of lactose on calcium and phosphorus balance was studied in 4 patients with normal lactose tolerance (controls) and one patient with lactose intolerance. Administration of lactose to the 4 controls resulted in a decrease in fecal and urinary calcium with striking improvement in calcium balance. Urinary and fecal phosphorus levels decreased in 3 of 4 controls; phosphorus balance was improved in all controls. When lactose was ingested by the lactose-intolerant patient, fecal calcium increased, calcium balance became more negative, and fecal fat increased (6.1 g increase in a 24 hr period). Cessation of lactose ingestion caused a decrease in the frequency of bowel action, a decrease in the amount of fecal fat and calcium, and the calcium balance became less negative. The beneficial effect of lactose on intestinal calcium absorption seemingly is absent in patients with lactose deficiency. The administration of lactose may induce a negative calcium balance large enough to be a factor in eventual osteoporosis production.

5613 DIETARY REGULATION OF GLYCOLYTIC ENZYMES: VI. EFFECT OF DIETARY SUGARS AND ORAL FOLIC ACID ON HUMAN JEJUNAL PYRUVATE KINASE, PHOSPHOFRUCTOKINASE AND FRUCTOSEDIPHOSPHATASE

ACTIVITIES. *(E.)* Rosensweig, N.S. (St. Luke's Hosp. Ctr., New York, N.Y.), R.H. Herman and F.B. Stifel. *Biochim Biophys Acta* 208(3):373-380, 1970.

The effects of dietary sugars and p.o. folate on the activities of two glycolytic enzymes (phosphofructokinase and pyruvate kinase) and one gluconeogenetic enzyme (fructosediphosphatase) were studied in the human (2 normal male and 3 obese patients) jejunum by enzyme assay. The activities of pyruvate kinase and phosphofructokinase were higest on dietary fructose and decreased in order on glucose, carbohydrate-free and fasting regimens. Fructosediphosphatase activities were highest with fasting and decreased in order with carbohydrate-free, fructose, and glucose diets. The fructosediphosphatase to phosphofructokinase ratio (an estimate of the net direction of the glycolytic and gluconeogenetic pathways on the different diets) was highest with fasting and decreased in order on the carbohydrate-free, glucose and fructose diets. In contrast with the dietary sugars, p.o. folic acid produced a marked increase in the activities of all 3 enzymes. Apparently p.o. folic acid and dietary sugars can regulate the activities of human jejunal gluconeogenetic and glycolytic enzymes.

5614 EXTRACORPOREAL CIRCULATION IN THE INTESTINE OF THE DOG. EVIDENCE OF AN INTESTINAL SECRETION OF THE GLUCAGON TYPE. *(Fr.)* Grenier, J. F. (New Res. Inst., Copenhagen, Denmark), M. Gillet, J. Kachelhoffer, P. Wong, R. Arriaga, A. J. Moody, L. G. Heding, J. Markussen and F. Sundby. *C R Soc Biol* 163(11):2446-2449, 1969.

Intestinal secretion of a glucagon-like substance was studied radioimmunologically following perfusion of isolated dog intestinal segments with 2.7%, 15% and 30% glucose solutions. The introduction of the 2.7% glucose solution into the empty intestine increased the venous blood glucose to just below the arterial level; the 15% glucose solution produced a further glucose increase in the venous blood (superior to the arterial), but no further increase in blood glucose was seen with the introduction of the 30% solution. The pancreatic glucagon-like-immunoreactivity remained at a constant level of 0.6 ng Eq/ml. This result, in the absence of a glucose load, demonstrates the existence of an intestinal secretion of a glucagon-immunoreactive substance. The isolated intestine, under the conditions mentioned, seemingly is capable of absorbing glucose, and an increased concentration of glucose promotes an increase of the glucagon-like substance.

5615 THE HEMOPERFUSED ISOLATED SMALL-BOWEL SEGMENT: STUDY OF TEMPERATURE DEPENDENCE AND ACTIVATION ENERGIES OF MOTILITY AND ACTIVE AND PASSIVE ABSORPTION. *(Ger.)* Rinecker, H. (Surg. Clin. U. Munich, Germany), N. Mendler, C. Chaussy and W. Brendel. *Pfluger Arch* 317(1):35-55, 1970.

An improved method for the hemoperfusion (3 hr) of isolated intestinal segments was studied extracorporeally in dogs. Blood tests included: temperature, ionic determinations (Na^+, K^+), osmolarity, pH, pyruvate, lactate, glucose, hematocrit and total hemoglobin. A diminution of glucose (91.5 to 48.4 mg%) was not significant. Pyruvate (decrease) and lactate (increase) changes were ascribed to a liver-free circulation; the other determinations during the perfusion remained within the normal range, and after 3 hr, free serum hemoglobin was 56 mg/100 ml, oxygen utilization was 90% of initial value and vascular resistance (after increases due to hypothermia) was 84% of its initial value. Changes in motility accompanied temperature changes, and using the Arrhenius equation for the frequency/temperature ratio of contractions, a resultant activation of 15452 cal/mol was calculated. The water flux was reversed in hypothermia. Xylose absorption decreased (-33.9%) and the activation energy was 2765 cal/mol. Galactose absorption after perfusion also decreased (-25.3%) and its activation energy was 16164 cal/mol. The use of this method is recommended because of its high maintenance of functional properties.

5616 CONVERSION OF DIHYDROSPHINGOSINE TO PALMITALDEHYDE AND PALMITIC ACID WITH CELL-FREE PREPARATIONS OF GUINEA PIG INTESTINAL MUCOSA. *(E.)* Nilsson, A. (Chem. Ctr., U. Lund, Sweden). *Acta Chem Scand* 24(2):598-604, 1970.

Guinea pig intestinal mucosa was used to study the conversion of 4,5-$^3H_2$-dihydrosphingosine to palmitic acid by subcellular fractions. The activity of the homogenate was distributed largely between the low speed particle fraction obtained after centrifugatio at 22,300 g for 15 min (10.8 nmole palmitate/mg protein; 5.0 nmole palmitaldehyde/mg protein) and the microsomal fraction. The activity of the high speed supernatant was low (0.4 palmitate nmole/mg protein; 0.3 palmitaldehyde nmole/mg protein). The ratio of palmitate to palmitaldehyde formed varied with the protein concentration and with the time of incubation, but was consistently lower with the low speed supernatant than with the low speed particle fraction. All the radioactivity of the dimethylacetal fraction cochromatographed with the C-16 dimethylacetal carrier. The ester fraction contained radioactivity both as methyl palmitate and as a compound with a retention time of 0.79 relative to methyl palmitate. ATP, and Mg^{2+} or Ca^{2+} ions were needed for the reaction which was markedly stimulated by pyridoxal phosphate and in the presence of these compounds no effect of reducing or oxidizing cofactors was observed. Dihydrospingosine or an activated derivative in rat liver may undergo a vitamin B_6-catalyzed aldolase type cleavage to palmitaldehyde and ethanolamine or a derivative of ethanolamine.

5617 METABOLISM OF ORALLY ADMINISTERED ENZYMATIC PREPARATIONS: II. METABOLISM IN INTESTINE AND IN BLOOD STREAM. *(E.)* Nakagawa, S. (Nihon U. Sch. Med., Japan). *Nihon Univ J Med* 11 (1):53-63, 1970.

When rabbit small intestinal fluid was incubated with 0.1% lysozyme solution the lysozyme activity decreased 36.8% in 1 hr (control - 7.5%). When 30 ml of 0.1% lysozyme solution was injected into the duodenum of laparotomized rabbit, the lysozyme activity in the small intestine decreased to 16.3% in

15 min, possibly partly due to absorption or mainly due to destruction by the rabbit's own proteases. *In vivo* experiments showed the intestinal proteolytic activity in the rabbit to be elevated more than 300% after lysozyme was administered. The elevation of proteolytic activity was not observed after ∝-chymotrypsin was administered. One ml of rabbit serum diluted 1,000 times showed a buffering action to 1 mcg of ∝-chymotrypsin. When 100-200 mg lysozyme was injected into the right central ear vein of the rabbit the half-life of lysozyme in the rabbit blood stream was 5 hr and 50 min. Elevation of proteolytic activity in the serum is apparently not a good indicator for use in protease absorption studies.

5618 PHOSPHOENOLPYRUVATE-ACTIVATED PHOSPHORYLATION OF SUGARS BY INTESTINAL MUCOSA. *(E.)* Weiser, M. M. (Harvard Med. Sch., Boston, Mass.) and K. J. Isselbacher. *Biochem Biophys Acta* 208(3):349-359, 1970.

Evaluation of guinea pig and rat intestinal mucosa for presence of a soluble phosphoenolpyruvate-activated phosphotransferase system was made and its characteristics explored. After preparatory treatment, assay was done by high-voltage electrophoresis of the labeled N-acetylglucosamine phosphate substrate. Activity of the phosphoenolpyruvate-activated phosphotransferase was proportional to N-acetylglucosamine concentrations. In addition to acetylglucosamine, phosphoenolpyruvate-activated phosphorylation of galactosamine, glucose, glucosamine and fructose was also detected. An ATP-dependent phosphotransferase system of intestinal mucosa proved different from the phosphoenolpyruvate system because of its greater stability to heat (45° C.) and refractoriness to trypsin. The phosphoenolpyruvate system also phosphorylated fructose only to fructose-1-phosphate, whereas the ATP-dependent system generated fructose-6-phosphate and fructose 1,6-phosphate in addition. No evidence was obtained to link the phosphoenolpyruvate-activated system to intestinal sugar transport.

5619 DIETARY REGULATION OF GLYCOLYTIC ENZYMES: VIII. DOSE AND TIME RESPONSE OF RAT JEJUNAL ENZYMES TO ORAL SEX HORMONES. *(E.)* Stifel, F. B. (Fitzsimons Gen. Hosp., Denver, Colo.), R. H. Herman and N. S. Rosensweig. *Biochem Biophys Acta* 208(3):387-393, 1970.

The dose and time response to p.o. 17β-estradiol and testosterone on the activities (nmoles substrate metabolized/mg protein) of enzymes involved in carbohydrate metabolism (phosphofructokinase, pyruvate kinase, fructodiphosphatase and fructosediphosphate aldolase) were studied in the jejunum of normal female and male rats, resp. In male rats, p.o. testosterone increased pyruvate kinase (85.14) and phosphofructokinase (16.66) and decreased fructosediphosphatease (5.84) activities significantly from the control levels (56.28, 14.17 and 9.27, resp.) at concentrations of 5 µg with maximal effects (150.73, 32.04 and 3.33 resp.) at 50 µg. In female rats, p.o. estradiol increased pyruvate kinase (71.73) and decreased fructosediphosphatase (6.15) activities significantly from the control levels (51.13 and 9.40, resp.) at concentrations of 1 µg and increased phosphofructokinase (17.79) significantly from the control level (14.46) at a concentration of 5 µg with maximal effects on all 3 enzymes (143.33, 2.27 and 35.70, resp.) occurring at concentrations of 50 µg. Plots of the time responses to estradiol and testosterone in female and male rats, resp., were similar with slightly significant effects on all 3 enzymes occurring after 4 hr and the maximal effect occurring after 16 hr. The aldolase activity was unaffected by p.o. doses of the hormones.

5620 CHOLINE ACETYLTRANSFERASE ACTIVITY OF RABBIT ILEUM WALL: THE EFFECTS OF EXTRINSIC AND INTRINSIC DENERVATION AND OF COMBINED EXPERIMENTAL HYPERTROPHY. *(E.)* Filogamo, G. (Dept. Human Anat., U. Turin, Italy) and P. C. Marchisio. *Arch Int Physiol Biochem* 78(1):141-152, 1970.

The effects of direct denervation (freezing with N_2O), extrinsic denervation (technique of Filogamo and Muti), experimental stenosis (technique of Filogamo and Vigliani) and combined stenosis with extrinsic denervation on choline acetyltransferase activity were determined in rabbit ileum wall. After direct denervation, choline acetyltransferase activity (µmoles acetylcholine/g tissue/hr) was undetectable in the denervated segment although segments above and below showed activity (0.55 and 0.47, resp.) and protein concentration (mg/g tissue) was lower (118.7) than in the neighboring segments (138.5 and 146.0). After extrinsic denervation choline acetyltransferase activity was unchanged (0.41) from that observed in a control segment (0.44) taken 30 cm away although fluorescent fibers were absent suggesting degeneration of sympathetic postganglionic fibers supplying the ileum. Following experimental stenosis, choline acetyltransferase activity was not significantly altered (0.51 immediately above the constriction and 0.46 immediately below compared to the control value of 0.66) but when stenosis and extrinsic denervation were combined choline acetyltransferase activity was significantly lower above and below the constriction (0.24 and 0.43 resp.) compared to the control (0.62) and the specific activity was inversely proportional to the extent of hypertrophy.

5621 THE METABOLIC FATE OF LYSOLECITHIN ADMINISTERED INTO RAT DUODENAL LUMEN. *(E.)* Sato, Y. (Sapporo Med. Coll., Japan). *Tohoku J Exp Med* 100(3):277-287, 1970.

The metabolism of lysolecithin, labeled with (methyl-^{14}C)-choline or (2-^3H)-glycerol and injected intraduodenally into fasted female rats, was studied in isolated intestinal and liver preparations by chromatography and scintillation counting. Lecithin was the most radioactive of the phospholipids in the intestine (at 10 min after injection: lysolecithin, 34.6; sphingomyelin, 1.1; lecithin, 63.8; and cephalin, 0.3% of the total radioactivity and liver (at 90 min after injection: 7.0; 1.3; 91.6; and trace %, resp.). Lecithin was subfractionated into four molecular species according to the degree of unsaturation. There was no definite evidence for any difference in ^{14}C- and ^3H-specific activities between subfractions of intestinal lecithin. In liver lecithin, the ^{14}C-specific activity was much higher in monoenoic (3.5 cpm/µmole) and dienoic (4.3 cpm/µmole) than tetraenoic (1.1 cpm/µmole) and hexaenoic (1.5 cpm/µmole) subfractions. Appreciable amounts of ^{3}H-specific activity were incorporated into intestinal neutral lipids, with activity being highest in triglyceride, moderate in diglyceride, and negligible in monoglyceride (at 10 min after injection: 74.2; 15; 1.8%, resp., of the total radioactivity). The ^{14}C-specific activity was high in acid soluble fractions and three radioactive compounds were detected in liver and intestinal tissue. In the intestinal tissue at 10 min, the activity was highest in glyceryl-phosphorylcholine (71.8%), moderate in phosphoryl-choline (28.2%) and negligible in free choline but at 90 min, the three compounds showed almost identical activity (43.1, 32.6, 24.3%, resp). In the liver at 90 min, the radioactivity was highest in phosphoryl-choline (73.8%), moderate in choline (26.2%), and negligible in glyceryl-phosphorylcholine.

5622 EFFECT OF QUANTITATIVE UNDERNUTRITION ON THE ACTIVITIES OF INTESTINAL DISACCHARIDASES IN THE RAT. *(E.)* K. S. Henley (U. Michigan Med. Sch., Ann Arbor), O. M. Troglia and E. G. Laughrey. *Gastroenterology* 58(5):699-672, 1970.

5623 THE EFFECT OF S-(2-AMINOETHYL)-ISOTHIOURONIUM (AET) ON THE INTESTINE OF THE RABBIT, GUINEA PIG AND RAT. *(Ger.)* Schmid, A. (Vetr. Fac., U. Munich, Germany) and K. Gutschow. *Arzneimittelforschung* 20(4):511-513, 1970.

5624 CHARACTERIZATION OF PROTEOLYTIC ENZYMES SECRETED BY INTESTINAL GLANDULAR CELLS IN TWO *ANNELIDAE POLYCHETAE ERRANTES. (Fr.)* Michel, C. (Lab. Cytol., Paris, France). *Ann Histochim* 15(1): 19-24, 1970.

5625 THE APPEARANCE OF ENDOGENOUS FATTY ACIDS IN THE LUMEN OF THE MUCOSA OF THE SMALL INTESTINE IN THE RAT FOLLOWING THE INGESTION OF OLEIC ACID. *(Fr.)* Savary, P. (Fac. Sci., Marseilles, France) and M.J. Constantin. *Bull Soc Chim Biol* 52(1):89-103, 1970.

5626 RABBIT SMALL-BOWEL RESPONSE TO CELL-FREE FILTRATE OF CHOLERAIC FLUID. *(E.)* Schafer, D. E. (VA Hosp., Minneapolis, Minn.), D. Banerjee, U. Bhargava, S. SenGupta, B. Sircar and A. K. Thakur. *Proc Soc Exp Biol Med* 134(1):90-94, 1970.

- o P:Morph (5410)(5413)(5416)(5417)(5426)(5439) (5450)(5473)
- o P:Absorp (5480)(5482)(5483)(5486)(5491)
- o P:Motil (5527)
- o P:Secr:Hepatobil (5387)
- o P:Gen (5633)(5644)
- o D:L.Intest (5907)
- o D:Gen (6158)(6190)

GENERAL

5627 CYCLIC 3'5'-AMP, ITS DIBUTYRYL DERIVATIVE AND THEOPHYLLINE EFFECTS ON THE RAT PORTAL VEIN *IN VITRO. (E.)* Berti, F. (Inst. Pharmacol., U. Milan, Italy), C. Sitori and M. M. Usardi. *Arch Int Pharmacodyn* 184(2):328-333, 1970.

The effects of cyclic 3'5'-AMP, its dibutyryl derivative, and theophylline on the strength and frequency of contraction of 56 rat (male Sprague-Dawley) portal veins *in vitro* was studied by microdynamometry. 3'5'-AMP, dibutyryl-cyclic 3'5'-AMP, and theophylline (500 µg/ml, 250 µg/ml, 18 µg/ml, resp.) all cause a decrease in the force of individual contractions. 3'5'-AMP and theophylline also cause an increase in frequency. α- or β- blockade (phenoxybenzamine (0.3 µg/ml) and D-INPEA (7.0 µg/ml), resp.) do not modify responses elicited by 3'5'-AMP or theophylline. However, α-blockade with phenoxybenzamine, both at concentrations (10^{-5} M) antagonizing the spasm induced by 2 µg/ml of norepinephrine and in much lower concentrations (10^{-9} M), ineffective in this respect, potentiates the negative inotropic effects of dibutyryl-3'5'-AMP. Another α-blocking drug used, tolazoline, exerted a similar effect. The direct action ofdibutyryl-3'5'-AMP on the mechanical activity of the portal vein appears to mimic the stimulation of β-receptors, which is potentiated by α-blocking agents.

5628 CHANGES IN FAT AND CARBOHYDRATE METABOLISM FOLLOWING CHOLINOMIMETICS IN THE ANESTHE- TIZED RAT. *(Ger.)* Oelssner, W. (Med. Acad. Carl Gustav Carus, Dresden, Germany), A. H. Staib, H. D. Fischer, M. Hanefeld, D. Meissner and K. Westermann. *Arch Int Pharmacodyn* 183(2):209-214, 1970.

The effects of cholinomimetics (oxotremorine, carba- chol and methacholine; 0.25, 0.05 and 0.5 mg/kg, resp.) on fat and carbohydrate metabolism in anesthetized Wistar rats were studied. The content of glucose and lactic acid was increased by all 3 cholinomimetics, in all of the experimental animals. The free fatty acid content was increased only by oxotremorine. Atropine and methylatropine antagoniz the above metabolic reactions. The lipolytic effect of oxotremorine was not inhibited by the β-adrenergi blocking agent, KO 592.

29 RELATIONSHIP OF DECREASED SYSTEMIC AND
PORTAL BLOOD PRESSURE TO THE FLOW STOP IN
E SINUSOIDS OF THE LIVER. *(Ger.)* Pointner, H.
st Med. U. Clin., Vienna, Austria), L. Peschl,
d N. Stefenelli. *Z Ges Exp Med* 152(3):244-250,
70.

multaneous measurements of arterial (carotid) and
nous (portal) blood pressure are described in a
udy of changes in the microcirculation of the rat
ver during controlled blood withdrawal. In addi-
on, intravital microscopy was used to follow the
anges in the vessels by the insertion of cannula.
was possible to ascertain a blood flow arrest
ter the removal of approximately 30% of the total
ood volume. The animals had a mean value of 89.25
Hg arterial pressure and 92.3mm H_2O venous pres-
re, initially; at the time of flow arrest, the
terial pressure was 21.4mm Hg, and the venous
essure was 31.4mm H_2O. Upon blood withdrawal of
7 to 0.8 ml/min, a positive correlation was seen
tween the arterial and venous blood pressure de-
eases. The changes seen by means of intravital
croscopy in the rat liver at the time of flow
rest can be observed in all the liver sinusoids,
d no morphological changes were evident at that
me. Emphasis is directed at the slow withdrawal
blood to avoid cardiac or respiratory changes.

30 AUGMENTATION OF HEPATIC BLOOD FLOW BY
ACETYLCHOLINE. *(E.)* Wangensteen, S. I.
. Virginia Med. Ctr., Charlottesville), R. M.
dewig and J. J. Madden, Jr. *Amer J Surg*
9(5):510-514, 1970.

terations in blood flow, pressure and vascular
sistance due to infusion of Acetylcholine (ACh)
to the hepatic artery, portal vein and jugular
in are reported. Electromagnetic flow probes
d pneumatic occluders were applied to the hepatic
tery and hepatic vein of 16 dogs (15-20 kg), lightly
esthetized with sodium pentobarbital through a mid-
ne incision. Two small catheters were passed from
om the splenic vein into the portal vein for blood
mpling, pressure measurements and ACh infusion.
patic venous pressure and inferior caval pressure
re also measured by means of inserted catheters.
en stabilization of hemodynamic parameters was
complished, ACh was administered (0.125 mg/0.1 ml/min)
r one hour by infusion pump. Hepatic arterial flow
se from a control value of 254 ml/min to 442/ml min
verage) after 10 minutes of ACh infusion and stabi-
zed at this level. Total hepatic flow rose from
e control value (532 ml/min) to 651 ml/min, while
changes in cardiac output, blood pressure or
art rate were noted. Portal venous pressure rose
om 5.3 mm Hg to 7.4 mm Hg during the infusion,
ile resistance fell in the hepatic artery from
45 units of peripheral resistance (PRU) to 0.25 PRU
ring ACh administration as portal venous resistance
se from 0.019 to 0.042 PRU. Isotonic saline per-
sion verified that the noted changes were caused
ACh. Systemic infusion of ACh into the jugular
in caused an increase in hepatic arterial flow (26%)
a 31% depression of hepatic arterial resistance
th parallel systemic changes in these parameters
so noted. The value of ACh for patients needing
creased hepatic arterial flow is discussed.

5631 THE EFFECT OF ORAL TETRACYCLINE HCl AND DOXYCYCLINE ON THE INTESTINAL FLORA. *(E.)* Hinton, N.A. (Dept. Microbiol., Queen's U., Kingston, Ontario, Canada). *Curr Ther Res* 12(6):341-352, 1970.

The relative effects of orally administered tetracycline HCl and doxycycline on alteration of the intestinal flora were studied in 68 normal, healthy subjects who had taken no antibiotics for at least 3 months. The subjects were randomly allocated to four groups of 17, and each subject submitted one stool sample each week for 3 weeks for a baseline estimate of pretreatment stool flora. One group received tetracycline HCl (1 gm/day in 4 doses for 8 days) and was compared with a group receiving doxycycline in standard therapeutic doses (200 mg on day 1, and 100 mg/day thereafter). Two additional groups received doxycycline at doses of 200 mg/day in 2 doses, or 400 mg/day in 2 doses. Stool samples were collected on day 2, 4, 6 and 8 from all subjects during treatment, and posttreatment stools were collected at 4, 5 and 6 weeks. During the 8-day treatment with tetracycline HCl total positive cultures of *Candida* species (count over 10^2) increased from a baseline level of 23.5% to a treatment level of 55.9% and remained elevated 4 to 6 weeks after treatment at a level of 35.2%; fecal streptococci cultures (count $> 10^6$) increased from pretreatment levels of 11.7% to 70.5% and were still elevated to 23.5% after 6 weeks; *Proteus, Pseudomonas and Klebsiella* cultures (count $> 10^5$) increased from 16.6% to 64.3% during treatment, and posttreatment levels remained at 60.8%. During tetracycline therapy, however, *Escherichia coli* cultures declined from pretreatment culture counts ($> 10^6$) of 78.4% to 55.9%, and remained slightly depressed posttreatment at 74.5%. Doxycycline in a standard therapeutic dose of 100 mg/day produced no significant observable population effect on the intestinal flora. Doxycycline at a dose of 400 mg/day was associated with a series of increases in content of intestinal flora which were indistinguishable from those produced by tetracycline HCl. Doxycycline at a dose of 200 mg/day produced similar measurable, but less dramatic effects. During the study, tetracycline therapy in 17 subjects produced one incidence each of nausea or anorexia, diarrhea and constipation. Doxycycline at a dose of 100 mg/day produced only 1 incidence of constipation. However, doxycycline at a dose of 400 mg/day produced 10 reports of nausea or anorexia and 11 cases of constipation.

5632 EFFECTS OF HEPATIC VENOUS PRESSURE ON TRANSSINUSOIDAL FLUID TRANSFER IN THE LIVER OF THE ANESTHETIZED CAT. *(E.)* Greenway, C. V. (Fac. Med. U. Manitoba, Winnipeg, Canada) and W. W. Lautt. *Circ Res* 26(6):697-703, 1970.

The relation of hepatic venous pressure and volumes to ascites formation and hepatic cirrhosis was investigated in anesthetized cats (30 mg/kg pentobarbital). The liver was placed into a sealed plethysmograph with the portal vein and hepatic artery left intact. Hepatic flow was drained by cannula into the thoracic vena cava with the abdominal cava occluded below the entrance of the hepatic veins, while the lower inferior caval blood drained into the femoral veins. Blood passed to a reservoir and returned through jugular venous cannulas. Arterial pressure, portal pressure, hepatic flow and volume were simultaneously recorded. While varying hepatic venous pressure from 2.3 to 11.7 mm Hg for periods between 20 minutes and 5 hours, arterial pressure showed little change (although portal pressure increased and stabilized at a new level after an initial rapid rise) while hepatic volume increased rapidly at first, followed by a slower rise. Measurement of total blood volume using ^{51}Cr-tagged red blood cells revealed an increase which was caused by an increased hepatic blood volume and a fluid filtration which occurred during the period of raised venous pressure. Results indicate that hepatic transsinusoidal fluid filtration appear to be dependent on sinusoidal hydrostatic pressure and that no available protective mechanisms prevent filtration during raised hepatic venous pressure.

5633 THE EFFECT OF GASTROINTESTINAL SECRETION ON MILK AND SERUM IMMUNOGLOBULINS. *(Ger.)* Kirsch, W. (Child. Clin. U. Lausanne, Switzerland). *Helvetia Pediat Acta* 25(2):119-126, 1970.

5634 AMMONIA METABOLISM IN THE GUT. *(E.)* Summerskill, W. H. J. (Mayo Clin., Rochester, Minn.) and E. Wolpert. *Amer J Clin Nutr* 23(5):633-639, 1970.

5635 LIPID METABOLISM REGULATION IN STARVATION AND SUBSEQUENT CARBOHYDRATE FEEDING. *(Ger.)* Tarnowski, W. (Physiol. Chem. Inst. U. Hamburg, Germany) and H. J. Seitz. *Internist* 11(5):161-175, 1970.

5636 REGULATION OF CHOLESTEROL METABOLISM: III. *(E.)* Dietschy, J. M. (U. Texas Southwestern Med. Sch., Dallas) and J. D. Wilson. *New Eng J Med* 282(22):1241-1249, 1970.

5637 THE ADJUSTMENT OF DIGESTIVE TRACT ACTIVITY BY NERVE CELLS IN THE TRACT WALLS. *(Jap.)* Fukuwara, T. (Okayama U. Med. Sch., Japan). *J Jap Med Ass* 63(2):245-254, 1970.

5638 METHOD FOR ESTIMATION OF LIVER WEIGHT *IN SITU* FROM THE RATIO OF HEPATIC BLOOD FLOW MEASURED BY COLLOIDAL RADIOGOLD (^{198}Au) AND RADIOXENON (^{133}Xe) CLEARANCE: EXPERIMENTAL STUDIES IN DOGS. *(E.)* Georgescu, G. (Acad. Med. Sci., Bucarest, Rumania) and N. Sterescu. *Rev Roum Physiol* 7(1):69-73, 1970.

5639 THE ACTION OF ACTIVATED CHARCOAL ON POISON IN THE DIGESTIVE TRACT. *(E.)* Chin, L. (U. Arizona Coll. Pharm., Tucson), A. L. Picchioni and B. R. Duplisse. *Toxic Appl Pharmacol* 16(3):786-799, 1970.

5640 SOME ASPECTS OF THE NUTRITION OF LABORATORY ANIMALS. *(Fr.)* Jean-Blain, C. (Natl. Vetr. Sch., Lyon, France) and J. Bonnod. *Aliment Vie* 57(10-11-12):219-244, 1969.

5641 THE ACTION OF INTRAVENOUS AND INTRAPERITONEAL ADMINISTRATION OF THE DISODIUM SALT OF ETHYLENEDIAMINETETRAACETIC ACID (EDTA) ON BLOOD SUGAR AND BIOMETALS IN THE PANCREAS, LIVER AND KIDNEYS. *(Ger.)* Schmidt, R. (Hyg. Inst. Martin Luther U., Halle-Wittenberg, Germany), R. Schultka, M. Richter, R. Hammer and J. Adam. *Z Ges Inn Med* 25(4):165-166, 1970.

5642 THE BEHAVIOR OF ASPERGILLUS PROTEASES IN THE INTESTINAL TRACT. *(Ger.)* Berndt, W. (1st Med. Clin. U. Hamburg, Germany), U. Staudt and H. Kolhoff. *Arzneimittelforschung* 20(4):571-575, 1970.

5643 PERITONEAL RECONSTRUCTION WITH PRESERVED DURA. *(Ger.)* Seiffert, K. E. (Surg. U. Clin. Frankfurt, Germany) and B. Filipovic. *Med Monatsschr* 24(4):161-164, 1970.

5644 THE MICROCIRCULATION OF THE LIVER, SYSTEM AND PORTAL BLOOD PRESSURE AFTER DESANGUIN TION AND VOLUME REPLACEMENT. *(Ger.)* Stefenelli, N. (1st Med. U. Clin., Vienna, Austria), L. Peschl and H. Pointner. *Z Ges Exp Med* 152(3):251-262, 1970.

5645 MODIFICATION OF EFFECTS OF PROTON AND GAM RADIATION OF THE RECTAL MUCOUS MEMBRANE B LOCAL HYPOXIA. *(E.)* Stenson, S. (Gustav Werner Ins Uppsala, Sweden). *Acta Radiol* 9(2):115-128, 1970.

o P:Morph (5435)
o P:Absorp (5496)
o P:Secr:Hepatobil (5579)
o P:Secr:Int (5615)(5622)
o Diagproc (5652)(5671)
o D:Stomduo (5766)
o D:Livbil (6006)
o D:Gen (6157)(6225)(6226)(6230)

DIAGNOSTIC PROCEDURES

646 TRIPLE BIOLOGICAL TEST FOR THE DIAGNOSIS
OF HEPATIC DISORDERS: ASSOCIATED INVESTI-
ATION OF PROTHROMBIN, FIBRINOLYTIC AND COMPLEMENT
CTIVITIES. *(Fr.)* Titeica, M. (Inst. Med. Pharm.,
ucarest, Rumania) and D. Radulesco. *Arch Roum Path
xp Microbiol* 28(2-3):277-283, 1969.

triple biological test (prothrombin, fibrinolysis
nd complement activities in the serum) was described
or the detection of certain hepatic disorders in 16
atients (9 cirrhosis, 2 cirrhosis with adenocarci-
oma, 5 primary cancer of the liver). Patients with
irrhosis with hepatic insufficiency showed low re-
ults (prothrombin time coagulation < 100%; euglobu-
in lysis < 90-120 min; complement titration < 120
H_{50}/ml) in all 3 tests; in primary hepatic cancers,
alues were maximally increased; in less acute cir-
nosis (splenomegaly, without biochemical abnormali-
ies) decreased fibrinolysis and prothrombin and
ormal complement activation were found. In cirrhosis
ith adenocarcinoma, fibrinolysis was increased with
decrease in the other 2 tests. A decrease in all 3
alues appears to indicate hepatic malfunction; an
cceleration of fibrinolysis indicates cirrhosis. All
activities are increased in hepatic cancer.

547 LIVER AND BLOOD GLYCOPROTEINS. *(Ger.)*
Kerschbaumer, F. W. (Konig Sanit., Bad
ergentheim, Germany). *Wien Klin Wschr* 82(18):
33-337, 1970.

lycoprotein determinations (2000) were performed in
40 patients with various hepatic disorders (chronic
epatitis, unspecific reactive hepatitis, steatosis)
o investigate its value for differential diagnosis.
n chronic hepatitis, the mucoproteins were normal
75.0 ± 10.0 mg%) or slightly increased (thus dif-
ering from the low values in liver cirrhosis); in
teatosis, mucoproteins were high (100-154 mg%).
nspecific reactive hepatitis may be evaluated more
efinitely by the mucoprotein content so as to delimit
ne participation of other diseases such as intestinal
r polyarthritic involvement.

48 USE OF RESPIRATORY HYDROGEN (H_2) EXCRETION
TO DETECT CARBOHYDRATE MALABSORPTION. *(E.)*
evitt, M. D. (U. Minnesota Hosp., Minneapolis) and
M. Donaldson. *J Lab Clin Med* 75(6):937-945, 1970.

ne use of respiratory hydrogen as an indicator of
rbohydrate malabsorption was evaluated in 36
ealthy young adults, 15 hospitalized patients with
history of gastrointestinal diseases, and 4 pa-
ents with intermittant diarrhea following subtotal
strectomy. Basal fasting level of H_2 excretion in
rmal subjects averaged 0.10 ± 0.07 ml (1 S.S.) per
n. H_2 excretion increased slightly in each of 19
bjects studied 24 hours after ingestion of 25 g of
lose (an incompletely absorbed sugar), but never
creased above basal level in 24 healthy subjects
o ingested 100 g of glucose (a completely absorbed
gar). In order to prove that H_2 excretion failed
increase in healthy subjects given glucose be-
use of complete glucose absorption rather than
ability of colonic flora to ferment glucose, fecal
ecimens from 5 subjects with and without glucose were incubated. The addition of glucose to fecal samples from all subjects markedly increased H_2 production (mean without glucose, 0.007 ml/hr; mean with glucose, 0.32 ml/hr). Assessment of lactose absorption with the use of breath H_2 measurements agreed closely with the results of standard lactose tolerance tests. The advantages of the breath H_2 excretion technique over the tolerance test is that it reflects the quantity of sugar not absorbed (is not influenced by gastric emptying rate of intermediary glucose metabolism) and it is sensitive enough to detect malabsorption of as little as 5 to 10 g of carbohydrate.

5649 THE ESOPHAGUS IN PROGRESSIVE SYSTEMIC SCLEROSIS: A MANOMETRIC AND RADIOGRAPHIC CORRELATION. *(E.)* Parker, J. (Montefiore Hosp. Med. Ctr., New York, N. Y.), M. Neschis, S. S. Siegelman and J. Rotstein. *Amer J Dig Dis* 15(5):443-447, 1970.

The sensitivity of the barium esophagogram or esophageal manometry as a technique in determining the extent of esophagela involvement in progressive systemic sclerosis was determined. Barium esophagrams with fluoroscopy and manometric evaluation using polyvinyl catheters attached to Sanborn pressure transducers were performed on 27 patients. Following analysis of the esophagrams, patients were grouped into 3 classes: those with normal peristaltic activity, those with abnormal peristalsis with hiatal hernia and slight dilatation and those with no peristaltic activity, hiatal hernia and moderate dilatation. The patients were further divided into 4 groups based on the motility results: those with normal inferior esophageal sphincter and normal peristaltic activity, those with decreased pressure in the inferior esophageal sphincter and normal activity in the distal body of the esophagus, those with decreased pressure in the inferior esophageal sphincter and aperistaltic waves in the distal body of the esophagus and those with absent inferior esophageal sphinctor and no distal body of the esophagus activity. Manometry was concluded to be a more sensitive method for determination of the degree and presence of esophageal involvement in systemic sclerosis.

5650 TOLUIDINE BLU-O AND ITS ANALOGS AS PARATHYROID AND PANCREATIC SCANNING AGENTS: TISSUE DISTRIBUTION OF TOLUIDINE BLUE-O AND EVALUATION OF ITS ANALOGS. *(E.)* Mortenson, R. A. (Duke U. Med. Ctr., Durham, N. C.) and J. McRae. *Arch Surg* 100(6):710-713, 1970.

Feasibility of toluidine blue-O (dimethyltoluthionine) and its gamma-emitting analogs as parathyroid and pancreatic scanning agents was studied in 50 female dogs (40 dogs received dye, i.v., in 5 minutes; 5 dogs received dye, i.v., over 1 hour, 5 dogs received dye via transduodenal injection). After injection, most dogs were observed to have a distinct bluish coloration of pancreas and parathyroids. Animals receiving rapid injections developed trachypnea, bradycardia, and agitation during the blush phase, and as infusion continued the EKG changed (e.g. lengthening of PR-interval, increased P-wave amplitude, I-wave inversion, and occasional ventricular extrasystoles. These changes reverted to normal at 10 minutes after infusion). Although the pancreas showed a five fold preferential uptake of toluidine blue-O due over the liver, massive size and proximity of liver mask the effect of the concentration diffenential. Toluidine Blue-O dye, in this case offered no advantage over current pancreatic screening with ^{75}Se-selenomethionine, which is concentrated 6 to 8 times that of the liver. In dogs receiving dye over a 1 hour period, excretion rates and distribution of dye was similar to those of the rapidly injected group, but the total amount of dye in tissue and fluid was less, and no adverse EKG changes were noted. In the group of dogs receiving intraduodenal dye injections, urine and bile appeared blue to the naked eye within 30 minutes. The percent of initial dose of dye that was cleared in urine was one sixth that cleared after i.v. injection, and the percent cleared via biliary system was one tenth that cleared after i.v. injection. Trace amounts of dye were found in the liver in a group of dogs, after a 24-hour period; no dye was found after 48 hours. The use of γ-emitting analogs of toluidine blue-O apparently offers no clear-cut advantage over present scanning techniques for pancreas visualization. However, fluorine-labeled analogs of the toluidine blue-O molecule seemingly are well suited to scanning normal parathyroid tissue especially parathyroid adenomas where dye is preferentially picked up. use of γ-emitting analogs of toluidine blue-O apparently offers no clear-cut advantage over present scanning techniques for pancreas visualization. However, fluorine-labeled analogs of the toluidine blue-O molecule seemingly are well suited to scanning normal parathyroid tissue especially parathyroid adenomas where dye is preferentially picked up.

5651 A COLLABORATIVE STUDY FOR THE EVALUATION OF A SEROLOGICAL TEST FOR PRIMARY LIVER CANCER.

(E.) O'Conor, G. T. (Natl. Cancer Inst., Bethesda, Md.), Yu. S. Tatarinov, G. I. Abelev and J. Uriel. *Cancer* 25(5):1091-1098, 1970.

The specificity and sensitivity of the alpha-fetoprotein test with respect to human primary liver cancer was the object of a collaborative study in which sera collected from 813 patients at 5 different African centers and 2 non-African centers were examined by 3 test centers for the presence of alpha-fetoprotein. Of the 813 patients, 247 had a clinical and/or histologic diagnosis of primary liver cancer, and the other 566 were used as controls. Alpha-fetoprotein was found to be present in 163 patients and absent in 623 patients. In 27 cases (3.3%) there was disagreement in the results between the 3 test centers. In 12 controls, a positive serological test was reported and they were listed as false-positives. Of the 231 cases of primary liver cancer, a positive serological test was recorded in 65.4% with a range among the 7 collection centers between 46.4% to 75%. If only those cases with histologic confirmation of liver cell cancer were included, the percentage of cases with alpha-fetoprotein increases to 75%. In the 12 false-positive cases, there were 2 cases of teratocarcinoma of the testicle and the remaining 10 cases included stomach carcinoma, pancreatic carcinoma, metastatic carcinoma with underlying cirrhosis in 2 cases, and other disorders based on clinical diagnosis alone.

5652 EXPERIENCES WITH DATA PROCESSING TO SEPARATE THE IMAGES IN PANCREATIC SCANNING.

(E.) Charlesworth, D. (Manchester Roy. Infirm., England), H. J. Testa, B. R. Pullan and H. B. Torrance. *Gut* 11(3)261-267, 1970.

A dual isotope technique with computer separation of pancreatic image from combined liver and pancrea scan was investigated *in vitro* and *in vivo*. With a ratio subtract system, the results were displayed either as a photodot recording or numerically. ^{99m}Technetium labeled sulfur colloid (a liver-seeking isotope) was used in combination with ^{75}Se methionine allowed a normal selenium liver and pancreas scan to be recorded simultaneously, without interference from liver seeking isotope. *In vitro* experiments with a phantom liver and pancreas (cadaver) successfully erased the liver image from the final printout. Complete separation of pancreas from overlying liver was achieved in 2/8 subjects. Changing of normalizing factor in each case did not improve the image. In a third experiment, the scan ratio of ^{99m}Tc to ^{75}Se did change with time (statistically significant). The computer was programmed to produce a density map showing all points with a probability above 2 standard deviations. Observer scan interpretation is a process of pattern recognition. The observer, therefore, unconsciously superimposes a preconceived pancreati image on the scan, fitting dots of equal density into this pattern. Variations are thus detected not fitting one of acceptable normal patterns. The dual isotope technique, at present seemingly offers no advantage over the photodot recording.

5653 INTRAGASTRIC pH MEASUREMENTS. *(Ger.)*

Rosenbaum, K. D. (Surg. Klin. Ernst Morit Arndt U. Greifswald, Germany), E. Wolf, J. Peterma and R. Templin. *Zbl Chir* 95(5):153-157, 1970.

Gastric juice acidity (100 samples) was measured b a method utilizing a radio-transmitter (which can swallowed) and a glass electrode chain (thereby avoiding the irritation associated with a gastric tube). The effect of intubation was evaluated by continual aspiration after histamine stimulation u the pH reached its initial level. No apparent eff on pH due to intubation is seen in gastric hyperac ity (pH differences 0.5-1); the intubation effect also not present in anacidity, even with histamine stimulation, when this does not promote acidity. histamine stimulation increases acidity, an effect intubation is seen (increased pH-difference of 4). transmitter-glass electrode combination may be of ue in the determination of stimulated gastric juic and can be used to advantage in serial determinati

54 BRUSHING CYTOLOGY OF THE ESOPHAGUS AND STOMACH UNDER DIRECT VISION BY FIBERSCOPES.

) Kobayashi, S. (Pritzker Sch. Med., U. Chicago, l.), J. C. Prolla and J. B. Kirsner. *Acta Cytol* (4):219-223, 1970.

ushing cytology of esophageal and gastric lesions ler direct vision of fiberoptic endoscopes was vestigated in 108 patients (21 with cancer and 87 h other non-cancerous processes). Diagnostic uracy was 95.2% in cancer cases, while false itive diagnosis was 3.4% in non-cancer group. cases of early gastric carcinoma confined to osa or submucosa were correctly detected by this hnique. A false positive cytology was observed a case of Borrmann type IV carcinoma, in which cer was present mainly in submucosa. Three false itive cases were reported, two in benign gastric ers and one in recurrent esophagitis near the dioesophageal junction, where misrepresentation been based upon numerous mitoses and pronounced lear irregularities. Repeat or follow-up studies e stressed in order to emphasize the role of ative cytology on repeat examination. Follow-up roach in combination with direct vision biopsy indispensible in the detection of malignant tro-esophageal lesions in early stages of mucosal submucosal invasion. Acridine orange method of l staining was suggested as the method of choice screening of large mass surveys, due to its high itive rate and rather low false positive index of picion.

5 STUDIES ON THE INSULIN TEST FOR COMPLETENESS OF VAGOTOMY.

(E.) Welbourn, R. B. y. Postgrad. Med. Sch., London, England), J. H. n, J. Spencer, G. P. Burns, F. C. Y. Cheng and . Cox. *Bull Soc Int Chir* 29(1):1-6, 1970.

gastric acid secretory response to insulin, sex erences in response to insulin, and completeness agotomy as tested by the Hollander method were lied in 353 patients. In 20 experiments performed healthy, eupeptic 37-yr-old man, there were ificant correlations between the i.v. dosage of lin (0.03 to 0.4 units/kg) and the fall in blood ose and gastric secretory response (peak acid ut). Of 138 men and 44 women who underwent vamy, 38% (53) and 18% (8), resp., had positive onses to standard Hollander insulin tests, cating incompleteness of surgery. Gastric juice ut and acid concentration indicated no sex erence in the rate of incomplete nerve section. sitive response to the Hollander insulin test obtained within 45 minutes in 51 of 81 men and 19 women with duodenal ulcer, indicating no sex erence.

5 TUBELESS GASTRIC ANALYSIS WITH A RADIO-TELEMETERING PILL (HEIDELBERG CAPSULE).

Bingham, J. R. (Dept. Med., U. Toronto, Ontario, da) and M. R. Andres, Jr. *Canad Med Ass J* 102 :1087-1089, 1970.

method for measuring gastric acid secretion with diotelemetering pill, the Heidelberg pH capsule, was described and results were compared with those obtained by the standard aspiration test of Kay using Histalog as the stimulus. With the Heidelberg pH capsule (containing a miniaturized radio transmitter, a pH meter, and a battery enclosed in an indigestible acrylic container measuring 20 X 7 mm), the titration was done inside the stomach while the pH was being continuously monitored. The number of ml of neutralizing alkali (given in 20 ml of water) required to neutralize the gastric secretion equaled the amount of acid secreted in milliequivalents and comparison of the acid values obtained by the capsule and the aspiration methods in 27 patients (7 with duodenal ulcer, 5 with dyspepsia, 3 with gastric ulcer, 1 with treated duodenal ulcer, 11 with no disease) showed acceptable agreement with a correlation coefficient of 0.68. There was no statistical difference between the 2 mean acid secretions (30 mEq, 27 mEq) determined by the capsule method and aspiration method, resp. The capsule method was simpler to do and caused only minimal discomfort.

5657 PERCUTANEOUS LIVER BIOPSY WITH A FLAT, SHARPENED MENGHINI-NEEDLE.

(Ger.) Muller, H. O. (no affil.), E. Gundel and H. Kollmeier. *Deutsch Med Wschr* 95(23):1259-1260, 1970.

Comparative findings in 100 patients are reported on the methods of obtaining liver biopsies, either by the conventional percutaneous aspiration needle, or with a modified flat sharpened Menghini needle, the traditional angle of the shaft being at 45°, and the modified form at a 25° angle. The needles used were all of a 1.6 mm diameter and a length of 70 or 160 mm (approx.) according to the patient's anatomical structure. Of the 100 conventional punctures, 83 successful biopsies were obtained; whereas with the modified method, 96 successful biopsies were obtained, and no complications followed using either of these methods. The gain in length of the cylinder in the modified form was 1.92 cm against a 1.61 cm of the conventional type (significantly different), but no increase in the size of the particles resulted from this difference. Some results of liver biopsies, which were seen to leave a mark on the parietal peritoneum, when examined during laparoscopy are described, and attributed to the type of needle used previously.

5658 DETERMINATION OF THE VIABILITY OF ISCHEMIC INTESTINE.

(E.) Myers, M. B. (Touro Res. Inst., New Orleans, La.), K. Carter, Jr., M. Halle and G. Cherry. *Arch Surg* 100(6):695-701, 1970.

Twenty-nine canine ileum preparations were subjected to various periods of total avascularity, and serial tests with a dye (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-2-H-tetrazoluim bromide) were performed to investigate a possible correlation between dye times and animal survival. With the exception of one dog (avascular time) whose avascular bowel showed a dye time of 78 sec and survived, all dogs with a time of over 70 sec died with gangrene of that portion of the bowel. Two dogs whose bowel was avascular for 10 hr had times of only 45 and 50 sec and both of these survived. The dye times 30 to 45 min after the revascularization of the bowel (devascularized for 10 hr) in 2 dogs were 45 and 50 sec (both survived) and in the others 100 and 108 sec (both died). The main difficulty with the test is the subjectiveness of the end point, i.e. the color change of the tetrazolium dye from yellow to blue when it is reduced by dehydrogenase enzymes.

5659 SIGNIFICANCE OF PERITONEOSCOPY IN THE PRESENCE OF HEPATIC SPACE-OCCUPYING LESIONS BY LIVER SCAN.

(E.) Villa, F. (Hektoen Inst. Med. Res., Chicago, Ill.), J. Elizondo, H. H. Byun and F. Steigmann. *Amer J Gastroent* 53(5):474-477, 1970.

Thirty-six patients were examined by peritoneoscopy and by liver scan for differential diagnosis of liver disease and to determine the presence and extent of space-occupying lesions. Liver scan revealed single lesions in 13 patients and multiple space-occupying lesions in 23 patients. Of the 13 patients with single hepatic lesions, 7 patients had malignant tumors as a cause of the defect on the liver scan; in the remaining patients the defect was caused by liver abscess in 2 cases, and by extrinsic compression (from ascites, pancreatic cyst or enlarged gallbladder) in 6 cases. Of the 23 patients with multiple lesions, liver scanning revealed 16 cases of malignant tumor, and in 7 patients the scan defect was due to postnecrotic cirrhosis, polycystic liver, sarcoid-alcoholic hepatitis, fatty liver or hemiangiosarcoma. Because extrahepatic factors cause defects on the liver scintigram, the definitive diagnosis can be made only by peritoneoscopy. The hepatic lesion must be at least 2 cm in size to be seen on the liver scan. Peritoneoscopy will detect surface lesions on the liver, but is ineffective for the diagnosis of deep lesions.

5660 EARLY DIAGNOSIS OF FATAL HEPATITIS.

(E.) Colombi, A. (Dist. Hosp. Basel, Switzerland). *Digestion* 3(3):129-145, 1970.

Differential clinical and laboratory data of 97 patients (32 comatose and 60 non-comatose) were analyzed relative to their value for early diagnosis of severe hepatitis with impending hepatic coma. Serum values of transaminases, bilirubin, lactic acid, ammonia and albumin did not prove reliable for early diagnosis of hepatitis in non-comatose patients. Liver biopsy information proved reliable to indicate degree of hepatocellular damage, but could not be repeated daily to monitor disease development. In contrast, blood clotting factors proved a reliable and quantitative parameter of hepatocellular damage when compared to liver biopsy and state of consciousness. In mild hepatitis prothrombin values (Quick) were always above 65%, and above 45% in medium groups (1 exception). Non-comatose patients with severe hepatitis had Quick values between 60% and 20%; Quick values in all patients with endogenous hepatic coma were lower than 30%. There was no difference between the survival and the fatal group. In 37 patients with mild or medium hepatitis, the fibrinogen mean value was 288 mg%. Nine patients with severe hepatitis (but without coma) had a mean fibrinogen level of 165 mg% (range 90 to 250 mg%). The comatose group had a mean value of 139 mg% (range 56 to 225 mg%). The index was higher than 220 for patients with mild hepatitis, higher than 160 for the medium hepatitis group, and between 74 and 160 for the non-comatose group with severe histologic damage. All patients with endogenous hepatic coma had a II, V, VII-index lower than 75. Furthermore, signs of secondary aldosteronism were present in 74% of comatose patients and hypoglycemia was observed in 3 patients with endogenous hepatic coma.

5661 MEASUREMENT OF PROTHROMBIN: A NEGLECTED LIVER FUNCTION TEST IN INFANCY AND CHILDHOOD.

(E.) Glueck, H. I. (U. Cincinnati Coll. Med. Ohio), R. M. Will, A. J. McAdams and G. Gleser. *J Pediat* 76(6):914-922, 1970.

Biopsy or surgical specimens obtained from 42 infan and children hospitalized for jaundice and receivin parenteral vitamin K to exclude hypoprothrombinemia due to vitamin deficiency were used for one-stage prothrombin and *p*-toluenesulfonyl L-arginine methyl ester prothrombin assays. The pathologist established the diagnosis, estimated the degree of paren chymal damage, and classified the impairment of function into 4 categories, ranging from none to severe. Moderate to severe cellular damage was found in 14 patients and the diagnosis was hepatiti in 11 of the 14. A high degree of correlation was found between the pathologist's estimate of parenchymal damage and the one-stage prothrombin assay, and also for the *p*-toluenesulfonyl L-arginine methy ester assay. In 3 cases, prothrombin time was prolonged in which the pathologist could find no evidence of liver damage. In 2 cases esterase prothro bin was depressed when the biopsy was considered normal. In 2 cases a normal *p*-toluenesulfonyl L-arginine methyl ester assay was associated with moderate liver damage. When plasma samples were assayed simultaneously by the 2 procedures, a high degree of correlation was observed. Abnormal prothrombin values were more common in cases of hepat tis. Assays were usually normal early with atresi or with infiltrative liver disease. The *p*-toluenesulfonyl L-arginine methyl ester assay proved usef when the one-stage method was questionable or mode ately abnormal. Since the assays could not differ entiate jaundice caused by obstruction from that found with minimal hepatitis or infiltrative liver disease, it is suggested that their use should not preclude biopsy and/or early exploration in the infant.

5662 LACTIC DEHYDROGENASE AND TRANSAMINASES: THEIR CLINICAL INTEREST IN 1970.

(Fr.) Nordmann, Y. (Inst. Molec. Path., Paris, France). *Gazz Med France* 77(17):3731-3740, 1970.

5663 THE CURRENT STATUS OF ENDOSCOPIC DIAGNO OF TUMOROUS AND PSEUDOTUMOROUS LESIONS THE REGION OF THE CARDIA.

(Fr.) Housset, P. (no affil), G. Perreau, J. Richard and C. Debray. *Vi Med* 51(15):2243-2250, 1970.

564 RADIOLOGICAL CHARACTERISTICS OF PEPTIC STENOSES OF THE ESOPHAGUS. *(Fr.)* eymarios, G. (no affil). *Vie Med* 51(15):2271-2284, 970.

565 CYTO-DIAGNOSIS BY SCRAPING IN MALIGNANT DISEASES OF THE ESOPHAGUS: 140 CASES. *(Fr.)* asker, J. (no affil), P. Housset, C. Marche and C. ebray. *Vie Med* 51(15):2299-2308, 1970.

566 DIAGNOSIS OF PANCREATITIS. *(Ger.)* Stahlheber, H. (2nd. Med. Clin., U. Munich, rmany) and M. Otte. *Med Klin* 65(25):1200-1203, 70.

67 HEPATIC SCINTIGRAPHY. *(Fr.)* Sicot, C. (Hosp. Beaujon, Clichy, France). *Acquis d Recent* 211-218, 1970.

68 THE CLINICAL SIGNIFICANCE OF ISOENZYMES. *(Jap.)* Oda, T. (Tokyo U. Sch. Med., pan) and H. Suzuki. *J Jap Med Ass* 62(12): 32-1242, 1970.

69 THE SEROLOGICAL DIAGNOSIS OF AUTOIMMUNE HEPATITIS. *(Jap.)* Nagashima, H. umamoto U. Sch. Med., Japan). *Jap J Clin Med* (2):257-262, 1970.

70 THE DETECTION OF LIVER TUMOR USING SCINTILLATION CAMERA: AN EXPERIMENTAL STUDY. *p.)* Inakura, M. (Kyushu U. Sch. Med., Japan). *pon Acta Radiol* 29(9):1113-1134, 1969.

571 ABDOMINAL RADIONUCLIDE AORTOGRAPHY WITH THE GAMMA SCINTILLATION CAMERA. *(E.)* ri, G. (Inst. Nucl. Med., U. Bologna, Italy), Marabini and G. Fattovich. *Brit J Radiol* (509):344-348, 1970.

572 LIVER BIOPSY IN THE DIAGNOSIS OF CIRRHOSIS. *(E.)* Scheuer, P. J. (no affil). *Gut* 3):275-278, 1970.

5 3 HEPATIC SCANNING WITH RADIOALBUMIN. *(E.)* Anonymous. *Roche Med Image Commentary* 6):22-24, 1970.

5 4 SELECTIVE VISCERAL ANGIOGRAPHY IN THE DIAGNOSIS OF ACUTE GASTROINTESTINAL HEMORRHAGE. *r.)* Lechner, G. (1st Surg. Clin., U. Vienna, Aus- a), W. Zaunbauer, P. Brucke and O. Wagner. *Wein Wschr* 120(23):425-427, 1970.

5 5 SEROLOGICAL DIAGNOSIS OF LEISHMANIASIS BY IMMUNOFLUORESCENCE IN LIVER OR SPLEEN SEC- NS IN HAMSTERS INFESTED WITH *LEISHMANIA DONOVANI.* *(Fr.)* Truong, T. K. (Fac. Med. Lyon, France), P. Ambroise-Thomas, M. Quilici, S. Dunan and P. Ranque. *Bull Soc Path Exot* 62(6):1077-1084, 1969.

5676 RETROGRADE ILLUSTRATION OF EXTRA- AND INTRAHEPATIC BILE DUCTS FOLLOWING BILE DUCT AND LIVER DUODENOSTOMY AND PAPILLOTOMY. *(Ger.)* Bucheler, E. (Surg. Clin. U. Bonn, Germany), M. Thelen, C. Kaufer and K. J. Paquet. *Fortschr Roentgenstr* 112(5):600-609, 1970.

5677 DETECTION OF TISSUE COPPER BY X-RAY SPECTROGRAPHY IN RELATION TO SYSTEMATIC INVESTIGATION OF WILSON'S DISEASE. *(Fr.)* Kissel, P. (Nancy, France), J. Schmitt and A. Duprez. *J Genet Hum* 17(3-4):413-422, 1969.

5678 DOSE OF HISTALOG FOR MAXIMAL ACID SECRETION. *(E.)* Desai, H. G. (B. Y. L. Nair Charit. Hosp., Bombay, India), M. P. Zaveri and F. P. Antia. *Indian J Med Res* 58(2):202-208, 1970.

5679 DISSECTING MICROSCOPY OF RECTAL MUCOSA. *(E.)* Walker-Smith, J. A. (Roy. Alexandria Hosp. Child. Camperdown, Australia). *Lancet* 1(7656):1121, 1970.

5680 IMPACTION OF A FIBRE-OPTIC GASTROSCOPE IN THE ESOPHAGUS: AN UNUSUAL COMPLICATION OF GASTROSCOPY. *(E.)* Kavin, H. (Johannesburg Hosp., Union of South Africa) and J. Schneider. *S Afr Med J* 44(16):478-479, 1970.

5681 LIMITATIONS OF RADIOLOGY IN THE DIFFERENTIATION OF DIVERTICULITIS AND DIVERTICULOSIS OF THE COLON. *(E.)* Parks, T. G. (Roy. Victoria Hosp., Belfast, Ireland), A. M. Connell, A. D. Gough and J. O. Y. Cole. *Brit Med J* 2(5702):136-138, 1970.

5682 IDENTIFICATION OF $C_{21}O_3$ and $C_{21}O_4$ STEROIDS IN HUMAN BILE. *(E.)* Laatikainen, T. (Helsinki, Finland). *Europ J Biochem* 14(2):372-378, 1970.

5683 A NEW DEVICE FOR EASIER GASTROTOMY. *(E.)* Kitahara, T. (Tokyo Teishin Hosp., Japan). *Int Surg* 54(1):68-70, 1970.

5684 STUDIES OF GASTRO-INTESTINAL OCCULT BLOOD LOSS. *(E.)* Holt, J. M. (Radcliffe Infirm., Oxford, England). *Oxford Med Sch Gazz* 22(2):28-30, 1970.

5685 ^{113}m INDIUM FOR LIVER SCANNING. *(E.)* Vigneri, R. (Med. Dept. U. Catania, Italy), D. Papalia and L. Motta. *J Nucl Biol Med* 13(3):106-114, 1970.

5686 SERUM GUANASE IN DIAGNOSIS OF HEPATIC DISEASE. *(E.)* Grimbeek, J. F. (Dept. Chem. Path., U. Pretoria, Union of South Africa) and J. M. C. Hoog. *S Afr Med J* 44(22):639-641, 1970.

5687 GASTRIC ANALYSIS IN THE EVALUATION OF POSTVAGOTOMY GASTRIC STATE. *(E.)* Lukash, W. M. (Natl. Naval Med. Ctr., Bethesda, Md.), R. B. Johnson and J. R. Fletcher. *Amer J Gastroent* 53(5): 437-445, 1970.

5688 QUANTITATIVE EVALUATION OF IMMUNOGLOBULIN IN THE SERUM OF PATIENTS WITH HEPATIC CIRRHOSIS. *(E.)* Mamont, B. (Med. Sch., Warsaw, Poland) and A. Eberhardt. *Arch Immun Ther Exp* 18(2): 190-194, 1970.

5689 RADIOLOGY IN THE JAUNDICED PATIENT. *(E.)* Gleeson, J. A. (Westminster Hosp., London, England). *Brit J Hosp Med* 3(5):713-716, 1970.

5690 OPERATIVE CHOLANGIOGRAPHY. *(E.)* Johnson, H. (Austin Hosp., Melbourne, Australia). *Aust New Zeal J Surg* 39(4):396-400, 1970.

5691 CLINICAL TESTING FOR AN IMPROVED CONTRAST FLUID IN INTRAVENOUS CHOLANGIOCYSTOGRAPHY. *(Ger.)* Braband, H. (St. Hosp. Berlin, Germany) and J. Ciarkowski. *Roentgenpraxis* 23(4):86-94, 1970.

5692 COMBINED CHOLANGIO-DUODENOGRAPHY. *(Ger.)* Kamieth, H. (Neunkirchen, Saar, Germany). *Radiologie* 10(1):39-42, 1970.

5693 EXPERIENCES WITH CHOLECYST-CHOLANGIOGRAPHY BY MEANS OF INFUSION. *(Ger.)* Kunz, B. (2nd Charity Med. U. Clin., Berlin, Germany) and H. Gunther. *Radiol Diagn* 10(6):587-590, 1969.

5694 ACCELERATION OF SMALL BOWEL CONTRAST STUDY BY CHOLECYSTOKININ. *(E.)* Parker, J. G. (Montefiore Hosp. Med. Ctr., Bronx, N. Y.) and T. C. Beneventano. *Gastroenterology* 58(5):679-684, 1970.

5695 THE SERUM HEPATITIS RELATED ANTIGEN (SH) IN ILLICIT DRUG USERS. *(E.)* Cherubin, C. E. (Harlem Hosp. Med. Ctr., New York, N. Y.), R. L. Hargrove and A. M. Prince. *Amer J Epidem* 91(5):510-517, 1970.

5696 AORTOSONOGRAPHY: ULTRASOUND MEASUREMENT OF THE ABDOMINAL AND THORACIC AORTA. *(E.)* Goldberg, B. B. (Episcopal Hosp., Philadelphia, Pa.) and J. S. Lehman. *Arch Surg* 100(6):652-655, 1970.

5697 SOURCE OF ERROR IN OPERATIVE CHOLANGIOGRAPHY. *(E.)* Custer, M. D., Jr. (Winchester Surg. Clin., Virginia) and J. N. Clore, Jr. *Arch Surg* 100(6):664-667, 1970.

5698 A STUDY OF SOME SELECTED TRACE ELEMENTS IN NORMAL AND CANCEROUS TISSUE BY NEUTRON ACTIVATION ANALYSIS. *(E.)* Danielsen, A. (Flekkefjord Hosp., Norway) and E. Steinnes. *J Nucl Med* 11(6):260-264, 1970.

5699 VIRAL HEPATITIS: NEW LIGHT ON AN OLD DISEASE. *(E.)* Krugman, S. (New York U. Sch. Med., New York) and J. P. Giles. *JAMA* 212(6):1019-1029, 1970.

5700 DETECTION OF AUSTRALIA ANTIGEN AND ANTIBODY BY MEANS OF RADIOIMMUNOASSAY TECHNIQU *(E.)* Walsh, J. H. (VA Hosp., Bronx, N. Y.), R. Yalo and S. A. Berson. *J Infect Dis* 121(5):550-554, 1970

5701 SURGICAL AND RADIOLOGIC ASPECTS OF HIATAL HERNIA. *(Dut.)* Lacquet, L. K. (Adolf Stappaert Hosp., Antwerp, Belgium) and E. De Bergeyc *T Geneesk* 26(8):395-401, 1970.

5702 HEPATOPORTOGRAPHY WITH AN OILY CONTRAST MEDIUM. *(Rus.)* Ganichkin, A. M. (I. P. Pavlov Med. Inst., Leningrad, USSR), A. M. Granov and V. A. Mikhailov. *Vestn Khir* 104(1):49-53, 1970.

5703 THE ROLE OF RHEOHEPATOGRAPHY IN THE DIAGNOSIS OF LIVER ECHINOCOCCOSIS. *(Rus.)* Alperovich, B. I. (Iakutsk U., USSR) and A. P. Rodionova. *Klin Med* 48(1):105-109, 1970.

5704 X-RAY EXAMINATION IN THE DIAGNOSIS OF ACU APPENDICITIS. *(Rus.)* Scherbatenko, M. K. (N. V. Sklifosovski Inst., Moscow, USSR), E. N. Beresneva and V. N. Evdokimov. *Vestn Rentgen Radio* 45(1):18-23, 1970.

5705 DIFFERENTIAL X-RAY DIAGNOSIS OF GASTRIC DYSKINESIA AND PYLORIC STENOSIS IN INFANT *(Rus.)* Levin, Yu. R. (Leningrad City Hosp. Child., USSR). *Vestn Rentgen Radiol* 45(1):13-18, 1970.

5706 X-RAY DIAGNOSIS OF INTERNAL BILE FISTULAE *(Rus.)* Braitseva, N. N. (Central Inst. Postgrad. Med. Educ., USSR), N. A. Usova and Yu. A. Romanychev. *Vestn Rentgen Radiol* 45(1):45-47, 1970

5707 CHOLEVID AND ITS USE IN PERORAL CHOLECYST CHOLANGIOGRAPHY. *(Rus.)* Rozenstraukh, L. S. (Sci. Res. Inst. Radiology, Moscow, USSR) an Z. P. Popova. *Vestn Rentgen Radiol* 45(1):35-37, 1

5708 RADIOLOGY AND MANOMETRY OF BILE DUCTS IN MECHANICAL OBSTRUCTION. *(Rus.)* Shtern, B. M. (Leningrad Med. Inst. Hyg., USSR) and N. A. Postrelov. *Vestn Rentgen Radiol* 45(1):37-44, 1970.

5709 DIAGNOSIS AND SURGERY OF DUODENAL AND COLONIC FISTULAS IN PEPTIC ULCER AND GASTRIC CANCER. *(Rus.)* Kozhevinov, A. I. (Gorki Med. Inst., USSR), A. S. Komarov, A. I. Sidorov and Yu. F. Baranov. *Khirurgiia* 46(4):37-40, 1970.

5710 SELECTIVE CELIACOGRAPHY IN CANCER OF THE STOMACH. *(Rus.)* Shekhter, I. A. (Moscow Med. Inst. Stomatology, USSR), S. I. Babichev, B. S. Briskin, N. T. Medvedeva, V. V. Lomako, G. A. Kostash and V. B. Chepulenok. *Khirurgiia* 46(4):20-25, 1970.

5711 DIFFERENTIAL DIAGNOSIS OF ACUTE PANCREATITIS AND MYOCARDIAL INFARCTION. *(Rus.)* Osipov, B. K. (Moscow City Clin. Hosp., USSR), L. B. Shimeliovich and B. L. Elkonin. *Khirurgiia* 46(4):85-89, 1970.

5712 CLINICAL ASPECTS AND DIAGNOSIS OF DYSENTERY. *(Rus.)* Mitchenko, I. K. (Kiev Inst. Postgrad. Med. Educ., USSR), A. I. Nenikova-Bogdanovich and I. G. Kubasov. *Vrach Delo* (5):146-149, 1970.

5713 DIAGNOSTIC PROBLEMS IN ACUTE PANCREATITIS. *(Rus.)* Burchinsky, G. I. (Kiev, USSR). *Vrach Delo* (5):33-39, 1970.

5714 EXFOLIATIVE GASTRIC CYTOLOGIC DIAGNOSIS. *(Rus.)* Illarionov, Yu. A. (Dniepropetrovsk Sci. Res. Inst. Gastroenterology, USSR) and A. K. Kosteva. *Vrach Delo* (3):20-23, 1970.

5715 EVALUATION OF SOME ROENTGENOLOGICAL METHODS OF EXAMINATION OF THE GALL BLADDER IN NON-CALCULOUS CHOLECYSTITIS. *(Rus.)* Mandziuk, B. N. (Region. Hosp. Uzhgorod, USSR). *Vrach Delo* (4):127-130, 1970.

5716 X-RAY FINDINGS IN AN EXPANDED INTESTINAL INFARCT. *(Ger.)* Frodl, F. K. O. (Bergweg Hosp., Rotterdam, Netherlands). *Fortschr Roentgenstr* 112(5):689-691, 1970.

5717 GASTROSCOPY IN CLINICAL DIAGNOSIS. *(Ger.)* Stadelmann, O. (Med. U. Polyclin., Bonn, Germany). *Praxis* 59(21):776-780, 1970.

5718 MANOMETRIC EXAMINATIONS OF THE ESOPHAGUS IN DIFFERENTIAL DIAGNOSIS AND IN THE SSESSMENT OF SURGICAL TREATMENT OF ESOPHAGEAL-GAS-RIC HERNIAS. *(Ger.)* Stucker, F. J. (Surg. U. Clin., ologne, Germany). *Munchen Med Wschr* 112(17):799-802, 970.

5719 THE IMPORTANCE OF LIVER AND SPLEEN SCANS WITH ^{99m}Tc AND ^{113m}In IN PEDIATRIC PATHOLOGY. *(It.)* Mussa, G. C. (Pediat. Clin., U. Turin, Italy), M. M. Mauri and D. Bacolla. *Minerva Pediat* 22(18):919-932, 1970.

5720 EARLY DIAGNOSIS OF CANCER OF THE STOMACH: NEW DIAGNOSTIC POSSIBILITIES WITH THE GASTROCAMERA AND GASTROSCOPE. *(Nor.)* Krag, E. (Arhus Hosp., Norway). *Ugeskr Laeg* 132(21):975-977, 1970.

5721 DOUBLE CONTRASTING OF THE ESOPHAGUS IN MULLER'S TEST. *(Rus.)* Lindenbraten, L. D. (I. M. Sechenov Med. Inst., Moscow, USSR) and R. M. Agranovich. *Vestn Rentgen Radiol* 45(1):3-7, 1970.

5722 AN IMPROVED DOUBLE CONTRAST TECHNIQUE FOR STUDIES OF THE LARGE INTESTINE. *(Rus.)* Vlasov, P. V. (Inst. Med. Radiology, Obninsk, USSR) and A. V. Yachmenev. *Vestn Rentgen Radiol* 45(1):27-29, 1970.

5723 DETERMINATION OF ALKALINE PHOSPHATASE IN BLOOD LEUCOCYTES FOR DIFFERENTIAL DIAGNOSIS OF OBSTRUCTIVE JAUNDICE (TUMOR ETIOLOGY) AND VIRAL HEPATITIS. *(Rus.)* Veprinskaya, S. I. (A. M. Gorki Med. Inst., Donets, USSR) and L. S. Bondarev. *Klin Khir* (3):55-57, 1970.

5724 RADIOISOTOPE LIVER SCANNING IN THE RESTORATIVE PERIOD AFTER RESUSCITATION. *(Rus.)* Radushkevich, V. P. (Voronezh Med. Inst., USSR), M. M. Mikhailov, L. F. Kosonogov and Yu. A. Telnov. *Khirurgiia* 46(4):105-109, 1970.

5725 DIAGNOSTIC IMPORTANCE OF DETERMINING LEUCOCYTE AND BLOOD SERUM ALKALINE PHOSPHATASE IN SOME DISORDERS OF THE DIGESTIVE TRACT. *(Rus.)* Antokhina, L. I. (Pentrozavodsk University, USSR). *Sovet Med* 33(3):91-94, 1970.

5726 THE RING PRECIPITATION REACTION IN DIAGNOSING INFECTIOUS HEPATITIS. *(Rus.)* Andreichin, M. A. (Ternopol Med. Inst., USSR). *Sovet Med* 33(3):105-107, 1970.

5727 INFUSION CHOLANGIOGRAPHY. *(Rus.)* Buvanov, V. M. (N. I. Pirogov Med. Inst., Moscow, USSR), S. A. Ginzburg, T. D. Zgonnik, Yu. L. Kagan and L. A. Chernyavskaya. *Sovet Med* 33(3):110-113, 1970.

5728 BLOOD GLUCO-AMYLASE TEST IN PANCREAS STUDIES. *(Rus.)* Orlov, V. A. (I. M. Sechenov Med. Inst., Moscow, USSR), N. I. Chumakova, and N. V. Ignatova. *Sovet Med* 33(3):113-118, 1970.

5729 ANGIOGRAPHY IN DISEASES OF THE GASTROINTESTINAL TRACT. *(Rus.)* Kuzin, M. I. (I. M. Sechenov Med. Inst., Moscow, USSR), V. G. Ryabstev, A. P. Savchenko, G. P. Filimonov and V. A. Golubkov. *Khirurgiia* 46(4):14-20, 1970.

5730 RADIOISOTOPE DIAGNOSIS: GALLBLADDER DISEASES. *(Rus.)* Slavnov, V. N. (Kiev Inst. Postgrad. Med. Educ., USSR). *Med Radiol* 15(4):38-43, 1970.

5731 CHOLECYSTOGRAPHY IN MUCOVISCIDOSIS. *(E.)* Sauvegrain, J. (Hosp. St. Vincent De Paul, Paris, France) and J. Feigelson. *Ann Radiol* 13(3-4):311-319, 1970.

- P:Secr Stom (5548)
- D:Esoph (5739)
- D:Stomduo (5780)
- D:Stomduo:Peptulc (5845)(5854)
- D:S.Intest:Regent (5879)
- D:L.Intest:Ulcol (5946)
- D:Livbil (6022)
- D:Livbil:A.Nonv.Hep (6058)
- D:Livbil:A.V.Hep (6084)(6097)
- D:Livbil:C.Hep (6106)(6107)
- D:Livbil:Cirrh (6116)

GASTROINTESTINAL DISEASES

ESOPHAGUS

5732 AN ISOPERISTALTIC GASTRIC TUBE: NEW METHOD OF ESOPHAGEAL REPLACEMENT. *(E.)*
amagishi, M. (Yokohama U. Sch. Med., Japan), N.
keda and T. Yonemoto. *Arch Surg* 100(6):689-692,
970.

new method of esophageal replacement or bypass,
sing an isoperistaltic gastric tube isolated from
he greater curvature side of the stomach, is de-
cribed. The tube can be moved a considerable dis-
ance and its oral end can be anastomosed to the
ervical esophagus without tension even if a sub-
utaneous route is chosen. This positioning is
ossible because the tube has a long vascular pedi-
le made from the right gastroepiploic vessels.
eventeen patients with esophageal cancer involving
he middle or upper-third of the esophagus and
reated with the new bypass procedure revealed no
perative deaths; radical resection of cancer was
erformed in 2 patients. Postoperative complica-
ions occurred in 50% of the patients. Leakage in
he neck occurred in 2 patients; none of the pa-
ients complained of regurgitation of gastric juice.
he isoperistaltic gastric tube seemingly is one of
he most satisfactory structures for an esophageal
ubstitute and is safely applicable to various kinds
f esophageal surgery.

733 PREVENTION OF GASTROESOPHAGEAL REFLUX AFTER RESECTION OF THE LOWER ESOPHAGUS.
.) Bombeck, C. T. (Abraham Lincoln Sch. Med.,
icago, Ill.), R. G. P. Coelho and L. M. Nyhus.
rg Gynec Obstet 130(6):1035-1043, 1970.

mple esophagogastric anastomosis techniques, for
e prevention of gastroesophageal reflux were eval-
ted in the experimental adult mongrel dogs after
wer esophageal resection. Of the 7 dogs subjected
resection with esophagogastrostomy, the 5 survi-
rs developed free reflux, and were later submitted
reoperation and gastric fundoplication around
ophagogastric anastomosis in the chest. Two ani-
ls survived, and there was an abrupt change in the
level from 1.5 intragastric to 5.6 in the thoracic
ophagus. There was no high pressure zone caused by
ndoplication. Both dogs demonstrated complete
earing of esophagitis on esophagoscopy and absence
reflux. Neither dog could be made to reflux with
vere abdominal compression while in the Trendelen-
rg position. Five of the dogs were submitted to
multaneous esophagogastrectomy and fundoplication;
ne demonstrated gastroesophageal reflux. One of 5
gs was made to reflux when severe abdominal
essure was applied, while it was in the Trendelen-
rg position; normal dogs refluxed with this proce-
re. In 1 dog the lower esophagus was resected
ecause of esophageal stricture) and gastrointesti-
l continuity was re-established by esophagogastric
astomosis (fundoplication was performed around
astomosis); recovery was complete and uneventful.
e method described does not produce a new sphincter
the lower esophagus, but is actually a simple
chanical valve which allows the free passage and
stricted flow of materials in a prograde direction.

5734 ESOPHAGEAL RECONSTRUCTION USING A GASTRIC TUBE: A PRELIMINARY REPORT. *(E.)* Cohen, D. (Roy. Alexandria Hosp. Child., Sydney, Australia). *Aust Pediat J* 6(1):22-24, 1970.

Three children with esophageal atresia (previously treated by cervical esophagostomy and gastrostomy) were subjected to esophageal reconstruction using a tube fashioned from the greater curvature of the stomach. The result was a thick-walled tube which looks like an esophagus with a vascular supply. Radiographic studies indicate that the tube serves as an inert conduit retaining tone and permitting emptying better than a colonic prosthesis. There was no problem with stasis or reflux and the technique allows patients to lie down after eating without regurgitation. The advantages of this technique (over the Burrington and Stephens method) are that the spleen is not sacrificed and the shortest route from stomach to neck is taken (the tube is led across the thoracic cavity to the neck).

5735 PEPTIC ESOPHAGITIS AND CLINICAL SIGNS. *(Fr.)* Christoforov, B. (no affil). *Vie Med* 51(15):2253-2259, 1970.

5736 TREATMENT OF PEPTIC ESOPHAGITIS BY DILATATION. *(Fr.)* Lequerler, Y. (no affil). *Vie Med* 51(15):2287-2291, 1970.

5737 GASTRIC INTUBATION AND ESOPHAGITIS. *(Fr.)* Coste, F. (no affil) and C. Perol. *Vie Med* 51(15):2293-2296, 1970.

5738 HIATAL HERNIA IN INFANTS AND CHILDREN. *(Fr.)* Alami, T. (C. H. U. Rabat, Morocco), Badre-Wagghiri and T. Lahrech. *Maroc Med* 50(534):227-235, 1970.

5739 CLINICAL AND ESOPHAGOSCOPIC EVALUATION OF THE FUNDOPLICATION ACCORDING TO NISSEN. *(Fr.)* Naef, A. P. (Yverdon Hosp., Switzerland), M. Savary and W. A. Jaques. *Helvetia Chir Acta* 37(1-2):107-110, 1970.

5740 SPONTANEOUS RUPTURES OF THE ESOPHAGUS AND STOMACH AND THE MALLORY-WEISS SYNDROME: LESIONS OF THE DIGESTIVE TRACT INDUCED BY VOMITING. *(Fr.)* Chapuis, G. (Dept. Surg., U. Lausanne, Switzerland), M. Tabrizan and F. Saegesser. *Schweiz Med Wschr* 100(25):1060-1066, 1970.

5741 LOWER ESOPHAGEAL RING: II. *(E.)* Spiro, H. M. (Yale U. Sch. Med., New Haven, Conn.), R. K. Goyal and J. J. Clancy. *New Eng J Med* 282(24):1355-1362, 1970.

5742 ESOPHAGEAL RETENTION CYST: AN UNUSUAL ENTITY. *(E.)* McCullough, F. S. (Ohio St. U. Coll. Med., Columbus), K. P. Klassen and F. M. Beman. *Ohio Med J* 66(6):576-578, 1970.

5743 MALIGNANT MELANOMA OF THE ESOPHAGUS: FIRST REPORTED CASE IN A CHILD. *(E.)* Basque, G. J. (St. Joseph Hosp., Denver, Colo.), J. E. Boline and J. B. Holyoke. *Amer J Clin Path* 53(5):609-611, 1970.

5744 THE MANAGEMENT OF TRAUMATIC TRACHEO-ESOPHAGEAL FISTULA CAUSED BY BLUNT CHEST TRAUMA. *(E.)* Chapman, N. D. (U. Southern California Sch. Med., Los Angeles) and R. A. Braun. *Arch Surg* 100(6):681-684, 1970.

5745 MODIFICATION OF THE HILL SUTURE IN TREATMENT OF HIATAL HERNIA. *(E.)* Rosenblatt, M. S. (Portland, Oregon) and Z. C. Edelson. *Amer J Surg* 119(6):760, 1970.

5746 CARCINOMA OF THE ESOPHAGUS. *(E.)* Parker, E. F. (Med. Coll. South Carolina, Charleston), H. B. Gregorie, Jr., J. E. Arrants and J. M. Ravenel. *Ann Surg* 171(5):746-751, 1970.

5747 THE SURGICAL TREATMENT OF ESOPHAGEAL HIATUS HERNIA. *(E.)* Mustard, R. A. (Dept. Surg., U. Toronto, Ontario, Canada). *Amer J Surg* 119(6):674-680, 1970.

5748 CONGENITAL ESOPHAGO-TRACHEAL FISTULAS IN THE ADULT. *(E.)* Bertelsen, S. (Govt. Hosp., Copenhagen, Denmark). *Scand J Thorac Cardiovasc Surg* 4(1):80-82, 1970.

5749 SUCCESSFUL INSTANT SURGERY OF ESOPHAGEAL ATRESIA IN A NEWBORN. *(Rus.)* Kusch, N. L. (A. M. Gorki Med. Inst., Donets, U.S.S.R.). *Vestn Khir* 104(4):111-112, 1970.

5750 ESOPHAGEAL LEIOMYOMAS. *(Rus.)* Kiss, J. (Debretsen Med. Inst., U.S.S.R.), B. Sentkeresti, Z. Zako and M. Nagy. *Vrach Delo* (5):93-95, 1970.

5751 PROBLEMS IN THE MANAGEMENT OF ESOPHAGEAL ACHALASIA. *(Ger.)* Rapant, V. (1st Surg. Clin., Palacky U., Olomouc, Czechoslovakia) and J. Kralik. *Bruns Beitr Klin Chir* 218(1):12-22, 1970.

5752 FUNCTIONAL DISORDERS OF THE ESOPHAGUS FOLLOWING LUNG RESECTION (MANOMETRY). *(Ger.)* Vogt-Moykopf, I. (Surg. U. Clin. Heidelberg, Germany), D. Zeidler, T. Conradi and C. Scholch. *Bruns Beitr Klin Chir* 218(1):1-11, 1970.

5753 HIATAL HERNIA OF THE ESOPHAGUS. *(Nor.)* Nygaard, K. (Central Hosp. Akershus, Norway) and N. Helsingen, Jr. *T Norsk Laegeforen* 90(10):1090-1092, 1970.

5754 A RING-LIKE GROWING LEIOMYOMA OF THE LOWER ESOPHAGUS. *(Ger.)* Bottger, G. (Surg. U. Clin. Wurzburg, Germany). *Chirurg* 41(6):284-285, 1970.

5755 RETROSTERNAL PLASTY IN CICATRICIAL ESOPHAGEAL OBSTRUCTION IN CHILDREN. *(Rus.)* Krolevets, I. P. (Omsk Med. Inst., USSR), Ju. B. Krivonogov and V. V. Pavlov. *Vestn Kir* 104(4):109-111, 1970.

5756 ANALYSIS OF THE RECORDS OF 1657 PATIENTS WITH CARCINOMA OF THE ESOPHAGUS AND CARDIA OF THE STOMACH. *(E.)* Gunnlaugsson, G. H. (Mayo Clin. Rochester, Minn.), A. R. Wychulis, C. Roland and F. H. Ellis, Jr. *Surg Gynec Obstet* 130(6):997-1005, 1970.

5757 RESULTS OF 117 ESOPHAGEAL REPLACEMENTS. *(E.* Huguier, M. (Beaujon Hosp., Paris, France), F. Gordin, J. N. Maillard and J. L. Lortat-Jacob. *Surg Gynec Obstet* 130(6):1054-1058, 1970.

5758 A CLINICAL AND EXPERIMENTAL STUDY ON ESOPH GEAL ACHALASIA. *(E.)* Tanaka, T. (Nihon U. Sch. Med., Japan), O. Inami, T. Matsushita, M. Noro and K. Yoshida. *Nihon Univ J Med* 11(1):25-37, 1969.

5759 PNEUMATIC DILATATION OF LOWER ESOPHAGEAL RING. *(E.)* Sanowski, R. A. (VA Hosp., Phoenix, Ariz.) and N. Riegel. *Amer J Dig Dis* 15(5) 407-412, 1970.

5760 THE TREATMENT OF THERAPY RESISTENT ACHALAS OF THE ESOPHAGUS. *(Ger.)* Reismann, B. (2n U. Clin. Cologne, Germany) and H. G. Engelhardt. *Chirurg* 41(6):259-262, 1970.

5761 DIFFUSE ESOPHAGEAL SPASM: RETURN TO NORMALITY. *(E.)* Bennett, J. R. (Johns Hopki U. Sch. Med., Baltimore, Md.), M. W. Donner and T. Hendrix. *Johns Hopkins Med J* 126(4):217-224, 1970.

5762 BENIGN ESOPHAGOBRONCHIAL FISTULA: A CURA CAUSE OF ADULT PULMONARY SUPPURATION. *(E.* Nelson, R. J. (Harbor General Hosp., Torrance, Cali and J. R. Benfield. *Arch Surg* 100(6):685-688, 1970

- P:Motil (5507)
- Diagproc (5649)(5654)(5663)(5664)(5665)(5701) (5718)(5721)
- D:Stomduo (5790)
- D:Livbil (6028)
- D:Livbil:Cirrh (6113)
- D:Gen (6238)(6243)

63 COMPARISON OF GROSS AND MICROSCOPIC
GASTRIC LESIONS PRODUCED IN RATS AFTER
NGLE DOSES OF ASPIRIN AND 2-DEOXYGLUCOSE. *(E.)*
gle, G. E. (Merck Inst. Ther. Res., West Point,
.), D. A. Brodie and B. G. Bauer. *Toxic Appl*
armacol 16(3):638-645, 1970.

e stomachs of vagotomized or sham-vagotomized
ltzman rats (125-150 gm) were subjected to gross
d microscopic examinations 4 hours after adminis-
ation of single doses of saline, p.o.; aspirin
28 mg/kg, p.o.); aspirin and 3 ml of 0.075 N HCl,
o.; 2-deoxyglucose (256 mg/kg, s.c.); or 2-
oxyglucose, s.c., and HCl, p.o. The animals were
lled with methohexital, the stomachs removed,
ened along the greater curvature and examined for
cidence of gross gastric hemorrhage and histologi-
l lesions. Oral administration of saline or HCl
d not produce gross hemorrhage or microscopic
sions in the rat stomach in either the sham-oper-
ed or the vagotomized group. Both aspirin and
leoxyglucose produced 100% incidence of gastric
morrhage and microscopic erosions in the sham-
erated group. When aspirin was given to the
gotomized rats, there was no gross evidence of
stric hemorrhage, but 7 of 8 rats had superficial
croscopic mucosal erosions and one rat had a deep
cosal erosion. A combination of aspirin with HCl
oduced 100% incidence of gastric hemorrhage in
gotomized rats; 6 rats with deep microscopic ero-
ns and 2 rats with superficial erosions. The
cidence of gastric hemorrhage with 2-deoxyglucose
reduced from 100% to 0% by vagotomy and erosion
evident in only one rat on microscopic examina-
n.

4 PITRESSIN AND GASTRIC ULTRASTRUCTURE. *(E.)*
Laumonier, R. (C. H. U. Rouen, France), C.
che and J. Metayer. *Rev Europ Etud Clin Biol*
4):396-404, 1970.

dies on the effects of pitressin alone or in com-
ation with cortisone on gastric mucosal struc-
e were performed on male rabbits (2 kg). Two
ups of animals were initially used: a control
up receiving physiological saline daily for 5 days,
a group receiving pitressin (10 units, i.v.) for
ays. The animals were sacrificed either on the
following (sixth day) or one month after the
ections were stopped, and the stomach was removed,
ed and treated with glutaraldehyde and osmic acid
electron-microscopic examination. A separate
up of animals received post-hypophyseal extract
cortisone acetate (30 mg, i.m.) prior to sacri-
e and the tissue was treated as above. Gastric
eration on the high part of the stomach along the
ater curvature was usually present in animals
led on the sixth day following pitressin admini-
ation. The ulcers were filled with necrotic and
orrhagic debris and the mucosal glands were di-
ed. The chief cells retained pepsinogen even at
base of the erosion. Animals treated with post-
ophyseal extract alone, or with cortisone alone,
onstrated no lesions; however, association of the
chemicals consistently gave rise to gastric le-
ns, ulcerations, fissures and gangrenous sloughs.
he fundic regions, the surface mucosal cells close to the ulcers had fewer secretion granules (unequal in size and density), whereas, the parietal cells contained numerous vacuoles and had well-developed canaliculi compared to the control specimens. The ultrastructure of the antrum was normal in all cases.

5765 ELECTRON MICROSCOPY OF GASTRIC MUCOSA IN ATROPHIC GASTRITIS. *(Fr.)* Aleman-Gavotti, C. (Dept. Anat. Path., Central U. Venezuela, Caracas), B. Bruni-Celli and J. Valencia-Parparcen. *Arch Franc Mal Appar Dig* 59(4-5):239-246, 1970.

Biopsy specimens of the gastric mucosa were studied by light and electron microscopy in 14 patients with atrophic gastritis. Light microscopic examination revealed characteristic elements of atrophic gastritis, such as a decrease in cell number, an increase in fibrous tissue, and inflammation of the corium. Electron microscopic examination of the parietal cells revealed dilated canaliculi with an apparent loss of microvilli, a large number of vesicles in the endoplasmic reticulum, and large numbers of vacuoles. The disappearance of microvilli in the canaliculi of parietal cells in atrophic gastritis apparently is related to cellular function, which would explain hypochlorhydria or achlorhydria associated with this disease.

5766 INSTRUMENTAL CONTROL AND ULCERATION IN RATS. *(E.)* Moot, S. A. (Dept. Psych., U. Washington, Seattle), R. P. Cebulla and J. M. Crabtree. *J Comp Physiol Psychol* 71(3):405-410, 1970.

5767 PREVENTION OF RISE IN INTRAGASTRIC PRESSURE DUE TO SUXAMETHONIUM FASCICULATION BY PRIOR DOSE OF D-TUBOCURARINE. *(E.)* La Cour, D. (U. Hosp., Aarhus, Denmark). *Acta Anaesth Scand* 14(1):5-15, 1970.

5768 ACID SECRETION AFTER CALCIUM CARBONATE IN PATIENTS WITH DUODENAL ULCER. *(E.)* Barreras, R. F. (U. Wisconsin Hosp., Madison). *New Eng J Med* 282(25):1402-1405, 1970.

5769 OCCURRENCE OF GASTRIC CARCINOMA IN PATIENTS HAVING NORMAL ACID PRODUCTION: CASE REPORTS. *(E.)* Blycker, J. (Holy Cross Hosp., Salt Lake City, Utah) and C. D. Fullmer. *Acta Cytol* 14(4):216-218, 1970.

5770 THE MANAGEMENT OF CONGENITAL HYPERTROPHIC PYLORIC STENOSIS: A REVIEW OF 10 YEARS EXPERIENCE. *(E.)* Davidson, J. R. M. (Christchurch Hosp., New Zealand). *New Zeal Med J* 70(449):228-231, 1969.

5771 THE STRESS ULCER SYNDROME. *(E.)* Hinchey, E. J. (McGill U. Dept. Surg., Montreal, Quebec, Canada), A. Hreno, P. R. Benoit, J. R. Hewson and F. N. Gurd. *Advance Surg* 4:325-384, 1970.

5772 POSTOPERATIVE HEMORRHAGE FROM STRESS ULCERATION OF THE STOMACH AND DUODENUM. *(E.)* Flowers, R. S. (Straub Clin., Honolulu, Hawaii), K. Kyle and S. O. Hoerr. *Amer J Surg* 119(6):632-636, 1970.

5773 MANAGEMENT OF PROLONGED GASTRIC RETENTION AFTER VAGOTOMY AND DRAINAGE. *(E.)* Hermann, G. (U. Colorado Sch. Med., Denver) and V. Johnson. *Surg Gynec Obstet* 130(6):1044-1048, 1970.

5774 SURGICAL CORRECTION OF A LATERAL DUODENAL FISTULA. *(E.)* Vakili, C. (Boston U. Sch. Med., Mass.), M. H. Sher and J. J. Byrne. *Surg Gynec Obstet* 130(6):1099-1102, 1970.

5775 A-LIKE BLOOD GROUP ANTIGEN IN GASTRIC CANCER CELLS OF PATIENTS IN BLOOD GROUPS O OR B. *(E.)* Hakkinen, I. (Dept. Path., U. Turku, Finland). *J Nat Cancer Inst* 44(5):1183-1193, 1970.

5776 SPONTANEOUS GASTRIC RUPTURE IN INFANTS AND CHILDREN. *(E.)* Gonzalez-Crussi, F. (Dept. Path., Queen's U., Kingston, Ontario, Canada), P. Stapithanonda and S. Ramchand. *Amer J Dig Dis* 15(5):463-468, 1970.

5777 TREATMENT OF DUODENAL DUPLICATION WITH INTERNATIONAL REVIEW. *(E.)* Leenders, E. L. (U. Pittsburgh Sch. Med., Pa.), M. Z. Osman and K. Sukarochana. *Amer J Surg* 36(6):368-371, 1970.

5778 RESULTS OF THE SURGICAL TREATMENT OF DUODENAL ULCER BETWEEN 1946 AND 1966. *(E.)* Trueman, K. R. (Dept. Surg., U. Manitoba, Winnipeg, Canada). *Canad Med Ass J* 102(10):1043-1046, 1970.

5779 STUDIES IN THE DUMPING SYNDROME: VI. CALCIUM DEFICIENCY AFTER PARTIAL GASTRECTOMY. *(E.)* Reizenstein, P. (Karolinska Inst., Stockholm, Sweden), E. Arman and L. H. Nilsson. *Amer J Dig Dis* 15(5):455-462, 1970.

5780 REACTIVE LYMPHORETICULAR HYPERPLASIA OF THE STOMACH. *(E.)* Kirsner, J. B. (U. Chicago Pritzker Sch. Med., Ill.), S. Kobayashi and J. C. Prolla. *Arch Intern Med* 125(6):1030-1035, 1970.

5781 STENOSAL DUODENAL ULCER IN THE PAPILLA AND ARTERIOMESENTERIC INTESTINAL OCCLUSION IN A CHILD. *(Ger.)* Bohmig, H. J. (1st Surg. U. Clin. Vienna, Austria) and G. Lechner. *Zbl Chir* 95(15):482-485, 1970.

5782 HEALING ACTION OF ADENOSINE IN ULCERATIVE LESIONS OF THE MUCOSA. *(It.)* Porri, A. (Dept. Clin. Odontol. Stomatol, U. Milan, Italy) and M. Polcan. *Ateneo Parmense* 40(6):570-579, 1969.

5783 DELAYED RESULTS TO GASTRIC RESECTIONS: 792 CASES. *(Ger.)* Hasslinger-Diethert, I. (Dist. Hosp. Potsdam, Germany) and H. J. Hamann. *Z Aertzl Fortbild* 64(2):68-70, 1970.

5784 DIVERTICULA OF THE STOMACH AND SMALL INTESTINE. *(Ger.)* Alnor, P. C. (St. Hosp. Braunschweig, Germany) and H. Gabler. *Chirurg* 41(6):246-251, 1970.

5785 STUDY ON POLYPOGENESIS AND MALIGNANT DEGENERATION OF ADENOMATOUS POLYPS OF THE STOMACH. *(Jap.)* Muto, T. (Tokyo U. Sch. Med., Japan). *Jap J Cancer Clin* 16(2):95-118, 1970.

5786 RADIOLOGICAL TREATMENT OF IDIOPATHIC (STO ACH UPSETTING) LYMPH TUMORS. *(Jap.)* Asakawa, H. (Miyagi Prefect Adult Dis. Ctr., Japan) N. Watanabe and N. Nikaido. *Jap J Clin Radiol* 15(3):221-226, 1970.

5787 THE GASTRIC SECRETION INHIBITORY SUBSTANC IN HUMAN SALIVA (SALIVOGASTRONE): II. CLINICAL STUDY. *(Jap.)* Miyoshi, A. (Fac. Med., Kyoto U., Japan), M. Moriga, S. Hirano, M. Kobayash T. Suyama, J. Kinoshita and M. Watanabe. *Jap Arch Intern Med* 16(8):319-334, 1969.

5788 STUDIES ON CELL PROLIFERATION IN EARLY GA TRIC CANCER: COMPARISON OF LABELING INDI IN EARLY GASTRIC CANCER AND OTHER DISEASES OF THE STOMACH, JUDGED BY THYMIDINE^{3}H AUTORADIOGRAPH. *(Ja* Kobayashi, J. (Sch. Med. Gunma U., Maebashi, Japan *Kitakanto Med J* 19(2):112-128, 1969.

5789 A STUDY OF TOTAL SERUM ALKALINE PHOSPHAT ACTIVITY IN MEN FOLLOWING PARTIAL GASTRE TOMY. *(E.)* Ambler, J. (Cty. Hosp., York, England) A. G. Green and C. N. Pulvertaft. *Gut* 11(3):255-2 1970.

5790 POSSIBLE PATHOGENESIS OF MOTILITY CHANGE IN DIFFUSE ESOPHAGEAL SPASM ASSOCIATED WITH GASTRIC CARCINOMA. *(E.)* Beck, L. T. (Hotel Dieu Hosp., Kingston, Ontario, Canada), B. Venkatachalam, R. S. A. Prentice, H. W. Neuman an H. A. Serebro. *Canad Med Ass J* 102(12):1257-1259 1970.

5791 CYSTOSCOPIC CONTROL OF GASTRIC HEMORRHA *(E.)* Youmans, C. R., Jr. (U. Texas Med Br., Galveston), M. Patterson, D. F. McDonald and J. R. Derrick. *Arch Surg* 100(6):721-723, 1970.

5792 TREATMENT OF RELUCTANT POSTVAGOTOMY STO WITH BETHANECHOL. *(E.)* Adams, J. T. (U Rochester Med. Ctr., N. Y.), L. O. Vasconez and E Woodward. *Arch Surg* 100(6):693-694, 1970.

793 GASTRIC EROSION FROM ALKALI INGESTION. *(E.)* Messersmith, J. K. (Walter Reed Gen. Hosp.,
ashington, D. C.), J. E. Oglesby, W. D. Mahoney and
. H. Baugh. *Amer J Surg* 119(6):740-742, 1970.

794 PYLORIC OBSTRUCTION DUE TO FORMIC ACID INGESTION. *(E.)* Lambeth, J. (Fac. Med. U.
alaya) and K. Somasundaram. *Med J Malaya*
(3):187-189, 1970.

795 MULTIPLE MALIGNANT (HAEM) ANGIOENDOTHELIOMAS OF THE STOMACH AND SMALL INTESTINE. *(E.)*
rind, H. M. (Surg. Clin., U. Amsterdam, Netherlands)
d A. E. Becker. *Arch Chir Neerl* 22(1):15-23, 1970.

96 INTERMITTENT JAUNDICE: THE RESULT OF A PROLAPSED GASTRIC TUMOR OCCLUDING THE COM-
N BILE DUCT. *(E.)* Rukstinat, G. J. (Holy Cross
sp., Chicago, Ill.), F. J. Saletta and C. W. Tuleja.
linois Med J 137(6):595-597, 1970.

97 RETROPERITONEAL RUPTURE OF THE DUODENUM DUE TO BLUNT TRAUMA. *(E.)* Vyas, B. K. (S. S. G.
sp. Med. Coll., Baroda, India), H. C. Patel and
T. Patel. *Indian J Surg* 32(1):55-56, 1970.

98 THE NATURAL HISTORY OF TUMORS IMPLANTED BENEATH THE GASTRIC SEROSA IN RATS. *(E.)*
kerman, N. B. (Menorah Med. Ctr., Kansas City, Mo.).
er J Surg 119(6):646-648, 1970.

99 GASTROCUTANEOUS FISTULA AS A POSTOPERATIVE COMPLICATION. *(E.)* Graves, H. A., Jr.
anderbilt U. Sch. Med., Nashville, Tenn.), A.
lson and B. F. Byrd, Jr. *Ann Surg* 171(5):656-662,
70.

00 CARCINOMA OF THE DUODENAL BULB: A CASE REPORT. *(E.)* McCluskey, B. (Austin Hosp.,
lbourne, Australia). *Aust New Zeal J Surg*
(4):390-392, 1970.

1 WHAT'S NEW IN GASTROINTESTINAL SURGERY -- 1969. *(E.)* Eisenberg, M. M. (Dept. Surg.,
Minnesota, Minneapolis). *J Surg Res*
7):337-341, 1970.

2 SOME PATIENTS WITH UNUSUAL STOMACH AILMENTS. *(Dut.)* Kuijjer, P. J. (U. Clin. Groningen,
herlands). *T Gastroent* 12(5):446-462, 1969.

3 REMOTE RESULTS OF RADICAL SURGERY IN CANCER OF THE LARGE DUODENAL PAPILLA. *(Rus.)*
banov, A. N. (I. M. Sechenov Med. Inst., Moscow,
R), S. M. Mikirtumov and A. E. Dmitriev. *Vestn*
r 104(4):71-74, 1970.

5804 ACUTE GASTRODUODENAL ULCERS AND THEIR COMPLICATIONS. *(Rus.)* Melnikova, V. P. (I. I. Dzhanelidze Sci. Res. Inst., Leningrad, USSR), V. I. Filin, M. G. Kamenchik and M. A. Samoilova. *Vestn Khir* 104(1):61-65, 1970.

5805 PHYSIOLOGICAL ASPECTS OF GASTRIC RESECTION: THE PROBLEM OF FUNCTIONAL COMPENSATION. *(Rus.)* Pechatnikova, E. A. (A. V. Vishnievski Inst. Surgery, USSR Acad. Med. Sci., Moscow). *Vestn Khir* 104(1):68-72, 1970.

5806 ACUTE GASTRODUODENAL EROSION AND ULCERS. *(Rus.)* Vasilenko, V. Kh. (All-Union Sci. Res. Inst. Gastroenterology, USSR), N. K. Matveev and N. O. Nikolaev. *Klin Med* 48(4):33-40, 1970.

5807 CORRECTION OF WATER-SALT METABOLISM IN PATIENTS AFTER STOMACH SURGERY. *(Rus.)* Shkrob, O. S. (I. M. Sechenov Med. Inst., Moscow, USSR), A. M. Dreizina, N. F. Solomatina, L. N. Kuzmina and O. I. Oarshenkova. *Khirurgiia* 46(4):60-65, 1970.

5808 THE SYNDROME OF THE ADDUCENT LOOP AFTER RESECTION OF THE STOMACH. *(Rus.)* Chistova, M. A. (I. M. Sechenov Med. Inst., Moscow, USSR) and V. V. Sergeev. *Khirurgiia* 46(4):40-47, 1970.

5809 PLASTIC RESECTION OF THE STOMACH AND GASTRECTOMY. *(Rus.)* Ivanov, V. A. (P. Lumumba Univ. Peoples Friendship, Dept. Surg., Moscow, USSR) and V. A. Goldin. *Khirurgiia* 46(4):25-30, 1970.

5810 TREATMENT OF PATIENTS WITH CHRONIC GASTRIC DISEASES. *(Rus.)* Vakaliuk, P. M. (Ivano-Frankovsk Med. Inst., USSR) and N. N. Serediuk. *Vrach Delo* (5):56-58, 1970.

5811 MORPHOLOGICAL AND FUNCTIONAL CHANGES OF THE MUCOSA AFTER STOMACH RESECTION IN ULCER PATIENTS. *(Rus.)* Gorgol, V. A. (Kiev Inst. Postgrad. Med. Educ., USSR). *Vrach Delo* (5):52-56, 1970.

5812 SOME INDICES OF THIAMINE METABOLISM IN PATIENTS WITH GASTRIC CANCER. *(Rus.)* Gude, Z. (Ternopol Med. Inst., USSR) and M. A. Liapis. *Vrach Delo* (4):19-21, 1970.

5813 INTRAMURAL DUODENAL HEMATOMA FOLLOWING GALLBLADDER AND BILE DUCT SURGERY. *(Ger.)* Heidenblut, A. (Oskar Ziethen Hosp., Berlin, Germany) and K. Holz. *Fortschr Roentgenstr* 112(5):609-614, 1970.

5814 RADICAL OPERATION IN CANCER OF THE PAPILLA DUODENI REGION. *(Rus.)* Shalimov, A. A. (Kharkov Sci. Res. Inst. Gen. Emerg. Surg., USSR) and N. A. Sumtsov. *Vestn Khir* 104(3):32-39, 1970.

5815 STUDIES ON CHRONIC GASTRITIS. *(Jap.)* Kasahara, S. (Osaka City U. Med. Sch., Japan). *J Osaka City Med Center* 18(7-12):383-413, 1969.

5816 PROGNOSIS OF EARLY OPERATED GASTRIC CANCER. *(Fr.)* Gutmann, R. A. (Paris, France). *Presse Med* 78(23):1049-1051, 1970.

5817 BENIGN LYMPHOID INFILTRATIONS OF THE STOMACH (LYMPHOMATOSIS). *(Fr.)* Le Quintrec, Y. (Paris, France), F. Potet, J. C. Laredo, A. A. Belghiti and A. Lambling. *Arch Franc Mal Appar Dig* 59(6):315-334, 1970.

5818 MULTIPLE POLYPS OF THE STOMACH: ONE CASE. *(Fr.)* Moretti, G. (Hosp. St. Andre, Bordeaux, France), A. Broustet, J. Beylot, V. Veyret and J. C. Galy. *Arch Franc Mal Appar Dig* 59(6):377-382, 1970.

5819 EARLY CARCINOMA OF THE STOMACH: REPORT OF TWO CASES. *(Nor.)* Krag, E. (Arhus Hosp., Norway). *Ugeskr Laeg* 132(21):983-985, 1970.

5820 CONGENITAL PYLORIC STENOSIS: OPERATIVE TREATMENT. *(Nor.)* Normann, E. (Ulleval Hosp., Norway) and G. Schistad. *T Norsk Laegeforen* 90(8):765-766, 1970.

5821 THE SECURE CLOSING OF THE DIFFICULT DUODENAL STUMP. *(Ger.)* Kugler, S. (Surg. U. Clin. Hamburg, Germany) and G. Mackh-Kauffmann. *Chirurg* 41(6):262-266, 1970.

5822 SUBJECTIVITY IN THE ESTIMATION OF SURGICAL FINDINGS IN GASTRIC CANCER RESECTION. *(Rus.* Sagaidak, V. N. (Inst. Exper. Clin. Oncol., USSR Acad. Med. Sci., Moscow, USSR). *Vestn Khir* 104(1):78-82, 1970.

5823 THE EXTENT OF SURGERY IN CANCER OF THE STOMACH. *(Rus.)* Peterson, B. E. (Inst. Exper. Clin. Oncol., Acad. Med. Sci., Moscow, USSR). *Khirurgiia* 46(4):8-14, 1970.

o P:Secr:Stom (5531)(5532)(5550)
o Diagproc (5654)(5663)(5680)(5683)(5687)(5689)(569
  (5705)(5709)(5714)(5717)(5720)
o D:Esoph (5733)(5737)(5740)(5756)(5760)
o D:Pancreas (5953)(5955)(5656)
o D:Livbil:Gallb (6151)
o D:Gen (6162)(6185)(6195)(6238)

STOMACH AND DUODENUM

Peptic Ulcers

5824 STUDIES OF THE MECHANISMS INVOLVED IN THE PRODUCTION OF STRESS AND STRESS-ATROPINE ULCERS IN RATS. *(E.)* Takagi, K. (Fac. Pharm. Sci., U. Tokyo, Japan) and S. Okabe. *Europ J Pharmacol* 10(3):378-384, 1970.

The mechanism of gastric ulcer production induced in atropinized rats under stress was investigated and compared with that of stress-induced ulcers (S-ulcer). Atropine at 1 and 10 mg/kg significantly ($P < 0.01$) reduced both volume and acid output of gastric juice under stress and under normal conditions. Under normal conditions (non-stressed) control mean volume was 5.7 ± 0.8 ml vs 2.0 ± 0.4 and 1.2 ± 0.1 ml for 1 and 10 mg of atropine, resp., in pylorus ligated rats. Mean control total acid output was 120.4 ± 22.0 μEq/hr vs 38.7 ± 12.7 and 13.9 ± 2.4 μEq/hr for 1 and 10 mg of atropine, resp. Under stress conditions, the mean control volume was 4.8 ± 0.2 ml vs 1.6 ± 0.2 and 1.5 ± 0.3 ml for 1 and 10 mg atropine, resp. The mean control total acid output was 126.5 ± 8.4 μEq/h vs 29.6 ± 7.6 and 34.8 ± 10.9 μEq/hr for 1 and 10 mg of atropine, resp. The production of both stress ulcers and stress-atropine ulcers was significantly inhibited by either calcium carbonate or chondriotine sulfate. Administration of hydrochloric acid and pepsin solution prior to stress did not however, increase ulceration. Chlorpromazine (10, 40 mg/kg) and meprobamate (300 mg/kg) significantly prevented both types of ulcers after 20 hrs of stress compared with controls. Hexamethonium (20 mg/kg) markedly suppressed stress-ulcer production and completely suppressed atropine-induced ulcers after 4 hr stress. Pentolinium (1 or 20 mg/kg) produced similar result after 20 hr stress. Laparotomy slightly suppressed development of both ulcer types ($P < 0.05$), while vagotomy completely inhibited stress ulcer production and atropine-induced ulcers. Adrenergic blockers, such as dibenamine (50 mg/kg) strongly suppressed atropine-induced ulcer formation (control ulcer index, 44 ± 0.6 vs 1.0 ± 0.3 for 50 mg/kg). Phentolamine (1 mg/kg) and tolazoline (1 mg/kg) almost completely inhibited atropine ulcer formation (0.2 ulcer index for both drugs). Although production of stress ulcers was not influenced by 50 mg/kg of phentolamine, 100 mg of dibenamine significantly decreased ulcer incidence (control 44.1 ± 3.2, vs 35.1 ± 2.4); tolazoline significantly potentiated production of ulcers (58.8 ± 2.6). Ulceration following reserpine (1 mg/kg, S.C.) was small compared with that caused by stress. Whereas stress-ulcer formation was not affected by reserpine, atropine ulcer was partly suppressed by reserpine given 1 hr prior to stress and completely by reserpine 24 hr previously. The etiology of stress-atropine ulcers seemingly is due to participation of adrenergic nerves, while stress ulcers are seemingly caused by a centrally mediated cholinergic factor.

5825 INVESTIGATION OF PANCREATIC ACTIVITY AFTER TOTAL SUBDIAPHRAGMATIC VAGOTOMY WITH YLOROPLASTY. *(Fr.)* Zotti, E. F. (Padoue Hosp., France), R. Fogar, G. Pomerri and G. F. Fasolo. *Acta Gastroent Belg* 33(1):43-50, 1970.

he effect of subdiaphragmatic vagotomy with pylorolasty on pancreatic function was studied in 20 paients who underwent surgery for peptic ulcers. easurements were made before surgery, 10 days postperatively, and 1 year later. The maximal pancreatic low and bicarbonate concentration were reduced by bout 50% ten days after surgery and returned to near ormal values after 1 year. The secretin stimulation esponse curve was unaffected with regard to these 2 arameters. Twenty min after the i.v. injection of ecretin, the mean bicarbonate concentration was 12 mEq/l before vagotomy, 70 mEq/l 10 days after urgery, and 100 mEq/l after 1 year. Secretin stimuation of amylase secretion was reduced by 55% by agotomy, but this returned to normal by 1 year. rypsin and lipase fasting levels were decreased mmediately postoperatively with a gradual return to ormal, while pH values were still low in 4 out of 5 ases after 1 year. The reduced activity of the ancreas is seemingly a transitory, completely reersible phenomenon.

826 HETEROTOPIC GASTRIC MUCOSA IN THE DUODENUM. *(E.)* Hoedemaeker, P. J. (U. Groningen, ermany). *Digestion* 3(3):165-173, 1970.

istological sections of duodenal tissue from 158 andomly obtained surgical specimens of Billroth II artial gastrectomies were examined for the occurrence f gastric mucosa with parietal cells and pepsinogen ells in the duodenal cuffs. Microscopic examination howed the presence of gastric mucosa in 52/158 speciens. The group with and the group without gastric ucosa in their duodenum were analyzed on the basis f sex, age, and the reason for gastrectomy. The only significant difference was that of the incidence of gastric and duodenal peptic ulceration. Duodenal ulceration was evident more often (52%) in the group with heterotopic gastric mucosa than in the group without (31%). Gastric ulceration was demonstrated more frequently in the group without gastric mucosa in the duodenum. Heterotropic gastric mucosa in the duodenum in cases of duodenal ulceration probably reflects an abnormal differentiation of the mucosa caused by high acidity.

5827 GASTRIC ULCERS IN SWINE: IV. EFFECTS OF DIETARY PARTICLE SIZE AND CRUDE FIBER CONTENTS OF ULCERATION. *(E.)* Baustad, B. (Vet. Coll. Norway, Oslo) and I. Nafstad. *Path Vet* 6(6):546-556, 1969.

The effects of various nutritional factors on the development of gastric ulcers were investigated in 3 experiments (92 pigs). Coarsely ground soybean meal (10%) in diet provided better protection against ulceration than did finely ground soybean meal. A watery extract of soybean meal gave some protection against ulceration in one experiment, but had no effect in another. The high incidence of gastric ulcers appeared to only slightly depress daily weight gain and the efficiency of feed conversion. In one experiment, weight gain was higher in animals fed basal ration where ulcer incidence was high than in animals fed soybean meal with low ulcer incidence. In a second experiment, a low daily weight gain and high incidence of gastric ulcers occurred in pigs fed isolated soybean protein, as compared to pigs in other lots. In a third experiment, a higher daily weight gain occurred in the group given basal ration where all stomachs had lesions than in lot fed 5% straw meal and where practically all stomachs were normal. Pigs fed 2.5% coarsely ground straw meal grew faster than pigs fed similar amounts of finely ground straw (greater incidence of ulcers). The difference in feed conversion was small, however. Five to 10% coarsely ground barley straw in diet gave full protection against ulceration, whereas 2.5% gave only partial protection. Finely ground straw as 2.5% of diet gave no protection against gastric content became significantly more fluid with increasing severity of gastric lesions.

5828 ATTEMPTS TO PRODUCE ACHLORHYDRIA IN DOGS BY REPEATED GASTRIC INJURY WITH HEAT AND COLD. *(E.)* Littman, A. (VA Hosp., Hines, Ill.), G. T. Perry and M. Littman. *Amer J Dig Dis* 15(5): 427-436, 1970.

Induction of sustained hypochlorhydria was attempted in 11 dogs with gastric fistulas given as many as 21 gastric freezing treatments, and in 8 dogs given 11 heat treatments. Freeze treatment for 60 min over 1 to 3 month periods did not lead to a prolonged and profound decrease in the secretory response to histamine. Increasing the treatment time to 70 min in 3 dogs gave an apparent satisfactory result in the first dog, but the second dog developed a gastric ulcer and the third dog had an 85% reduction which lasted only 2 months. Vasopressin (0.2 pressor units/kg/min 5 min prior to treatment) sharply decreased gastric blood flow in 3 dogs and improved the response to freezing; however, 2 dogs died during treatment and the results in the third were not satisfactory. In the heat treatments, temperatures over 50°C were fatal. In 5 dogs treated with temperatures ranging from 47 to 49°C there was one death after the first treatment, one dog survived treatments, and a third dog survived 11 treatments at 48°C with little or no effect on acid output. In all the treatments attempted, a profound and sustained reduction of histamine response occurred in only one dog. Although endoscopic and histologic evidence of repeated and severe mucosal damage was observed, recovery was fast and more complete with heating than with freezing.

5829 EFFECTS OF ADRENERGIC BLOCKING AGENTS ON GASTRIC SECRETION AND STRESS-INDUCED GASTRIC ULCER IN RATS. *(E.)* Okabe, S. (Presbyterian-U. Pennsylvania Med. Ctr., Philadelphia), R. Saziki and K. Takagi. *Jap J Pharmacol* 20(1):10-15, 1970.

The effects of adrenergic blocking agents (s.c.) on gastric secretion following pylorus ligation and on stress-induced gastric ulcers were determined in rats. Saline control values for secretory volume (6.1 ml) and total acid output (153.6 µEq/hr) were significantly reduced by phentolamine at 10 mg/kg (1.4 and 24.8 resp.), tolazoline at 10 mg/kg (4.8 and 120.4 resp.) MJ 1999 at 50 mg/kg (3.6 and 86.4 resp.), propanolol at 20 mg/kg (4.0 and 98.4 resp.) and alprenolol at 40 mg/kg (1.3 and 26.8 resp.), and carboxymethylcellulose control values (6.5 and 158.7 resp.) were significantly reduced by dibenamine at 50 mg/kg (3.5 and 79.4 resp.), ergotamine at 10 mg/kg (2.9 and 50.9 resp.) and yohimbine at 5 mg/kg (3.6 and 79.1 resp.). The ulcer index in stressed rats was lowered with significant preventive ratios (100 X control ulcer index minus the drug ulcer index / control ulcer index) by yohimbine at 10 mg/kg (62.2%), MJ 1999 at 50 mg/kg (78.7%), propanolol at 20 mg/kg (62.3%) and alprenolol at 40 mg/kg (64.3%).

5830 EXERTION ULCERS IN THE RAT. *(E.)* Robert, A. (Upjohn Co., Kalamazoo, Mich.), J. I. Northam, J. E. Nezamis and J. P. Phillips. *Amer J Dig Dis* 15(5):497-507, 1970.

Forced muscular exercise was used to produce gastric ulcers in male and female rats placed in a suspended cylindrical cage rotated at 12 rpm for 3 periods of 45 min each, separated by 2 rest periods of 15 min each (total time 2 hr, 45 min). Ulcers were found in the gastric corpus only and involved only the mucosa, and it appeared that they were initiated by an intramucosal hemorrhage leading to necrosis of a segment of the mucosa. Feeding prior to exertion completely prevented the formation of ulcers. Ulcerations in males was 55% less than in females of the same body weight. Methscopolamine bromide (50-1000 µg/rat), an antacid preparation (Malcogel), mercuric acetate, and prednisolone (0.5-2.0 mg/rat) prevented ulcer formation (dose dependent). Adrenalectomy and deoxycorticosterone had no effect on the ulcers. Chlorpromazine inhibited the formation of ulcers (also dose dependent); the number of actively running rats diminished as the doses increased). During exertion, the volume and acidity of the gastric juice were reduced (from 5.8 to 3.7 ml/3 hr and from 91 to 61 mEq/l, resp.). The technique of forced muscular exercise for the production of ulcers is suggested as an assay for antiulcer agents due to its rapidity, simplicity, reproducibility, and quantitation.

5831 GASTRIC DEFENSE MECHANISMS. *(E.)* Wise, L. (Washington U. Sch. Med., St. Louis, Mo.) and W. F. Ballinger, II. *Amer J Surg* 119(5):537-541, 1970.

5832 NEW APPROACHES TO THE PATHOGENESIS OF PEPTIC ULCER BASED ON THE PROTECTIVE ACTION OF SALIVA. *(E.)* Malhotra, S. L. (Calcutta, India). *Amer J Dig Dis* 15(5):489-496, 1970.

5833 TRAUMATIC ACUTE GASTRIC ULCER AND EMBOLISMS CAUSED BY MILK PRODUCTS. *(Fr.)* Marti, M. C. (Fac. Med., U. Geneva, Switzerland). *Schweiz Med Wschr* 100(25):1084-1086, 1970.

5834 THE PATHOLOGICAL PHYSIOLOGY OF DIGESTIVE ULCERS AND THEIR PHARMACOTHERAPY. *(Jap.)* Yamagata, K. (Tohoku U. Med. Sch., Japan). *J Jap Med Ass* 63(2):157-184, 1970.

5835 MANAGEMENT OF BLEEDING STRESS ULCERS. *(E.)* Kunzman, J. (Kaiser Found. Hosp., Walnut Creek, Calif.). *Amer J Surg* 119(6):637-639, 1970.

5836 PEPTIC ULCER AND PARATHYROID ADENOMA. *(E.)* Myers, R. T. (Bowman Gray Sch. Med., Wake Forest U., Winston-Salem, N. C.) and A. Bhatti. *Ann Surg* 171(5):647-655, 1970.

5837 OPERATIVE TREATMENT OF CHRONIC DUODENAL ULCER IN CHILDHOOD. *(E.)* Ravitch, M. M. (Montefiore Hosp., Pittsburgh, Pa.) and G. D. Duremic *Ann Surg* 171(5):641-646, 1970.

5838 FAMILIAL FACTORS IN PEPTIC ULCER: I. THE OCCURRENCE OF ULCER IN RELATIVES. *(E.)* Monson, R. R. (Harvard Sch. Publ. Hlth., Boston, Mass.). *Amer J Epidem* 91(5):453-459, 1970.

5839 FAMILIAL FACTORS IN PEPTIC ULCER: II. FAMILY STRUCTURE IN DUODENAL ULCER. *(E.)* Monson, R. R. (Harvard Sch. Publ. Hlth., Boston, Mass.). *Amer J Epidem* 91(5):460-466, 1970.

840 HYPERPARATHYROIDISM AND DUODENAL ULCER. *(Dut.)* Hubens, A. (Stuivenberg Hosp., ntwerp, Belgium) and I. De Leeuw. *T Gastroent* 2(6):529-534, 1969.

341 VAGOTOMY IN SURGERY OF GASTRIC AND DUODENAL ULCER. *(Rus.)* Saveljev, V. S. (N. I. irogov Med. Inst., Moscow, USSR) and O. A. Umbrumyants. *estn Khir* 104(4):80-85, 1970.

342 VAGOTOMY AND PYLOROPLASTY IN DUODENAL ULCER SURGERY. *(Rus.)* Pantsyrev, Ju. M. (N. I. irogov Med. Inst., Moscow, USSR), A. A. Crinberg, . Ya. Mints and V. A. Ageichev. *Vestn Khir* 04(4):74-79, 1970.

343 FUNCTIONAL CHANGES OF THE PANCREAS IN PATIENTS WITH GASTRODUODENAL PEPTIC ULCER. *us.)* Saveliev, V. S. (N. I. Pirogov Med. Inst., scow, USSR), O. A. Umbrumyants, V. M. Kruschova and . F. Prokopieva. *Khirurgiia* 46(4):55-59, 1970.

344 SURGERY OF GASTRODUODENAL PEPTIC ULCER. *(Rus.)* Berezov, Yu. E. (N. I. Pirogov Med. st., Moscow, USSR) and A. S. Ermolov. *Khirurgiia* (4):30-36, 1970.

45 PHYSIOPATHOLOGICAL BASIS FOR THE SURGICAL MANAGEMENT OF DUODENAL ULCER: II. NEW ITERIA FOR THE EVALUATION OF SECRETION COMPONENTS. *t.)* Grossi, A. (Dept. Surg., U. Siena, Italy), G. llini and S. Stabile. *Minerva Chir* 25(8):615-619, 70.

46 GASTRODUODENAL ULCERS TREATED BY BILLROTH I RESECTION WITH AND WITHOUT SELECTIVE VAGOTY: A FOLLOW-UP STUDY. *(Nor.)* Lyngstadaas, S. (St. seph Hosp., Fredrikstad, Norway). *T Norsk Laegeforen* (8):758-761, 1970.

47 FUNCTIONAL AND HISTOCHEMICAL CHANGES IN AN ULCEROUS DUODENUM: TELEMETRY AND ODENOBIOPSY FINDINGS. *(Rus.)* Ivashkin, V. T. . M. Kirov Military Med. Acad., Leningrad, USSR) d V. M. Uspensky. *Sovet Med* 33(3):10-14, 1970.

48 NERVOUS IMPLICATIONS IN THE PATHOGENESIS OF PEPTIC ULCER. *(Rus.)* Proschenko, N. L. onets Med. Inst., USSR). *Sovet Med* 33(3):77-82, 1970.

5849 THE EFFECT OF ANABOLIC STERIOD HORMONES ON PROTEIN METABOLISM AND ON THE MANAGEMENT OF PEPTIC ULCER. *(Rus.)* Schedrunov, V. V. (S. M. Kirov Milit. Med. Acad., Leningrad, USSR). *Sovet Med* 33(3):94-97, 1970.

5850 GLUCOCORTICOID FUNCTION OF THE ADRENAL CORTEX IN ULCER PATIENTS. *(Rus.)* Kryzhanovskaya, I. I. (Dniepropetrovsk Med. Inst., USSR) and S. I. Petiy. *Vrach Delo* (4):112-115, 1970.

5851 PROBLEMS IN THE TREATMENT OF ULCER PATIENTS AT THE MORSHIN HEALTH RESORT. *(Rus.)* Borin, Ya. V. (Ivano-Frankovsk Med. Inst., USSR), V. G. Denisiuk and N. N. Serediuk. *Vrach Delo* (3):39-41, 1970.

5852 HEREDITARY FACTORS AND ULCER DEVELOPMENT. *(Rus.)* Geller, L. I. (Khabarovsk, USSR) and Z. P. Kozlova. *Vrach Delo* (3):41-43, 1970.

5853 AN APPRAISAL OF THE INDICATIONS FOR SURGICAL TREATMENT OF PEPTIC ULCER. *(Nor.)* Sigstad, H. (no affil). *T Norsk Laegeforen* 90(8):751-757, 1970.

5854 ENDOSCOPIC CONTROL OF ULCER HEALING FOLLOWING CARBENOXOLONE-SODIUM TREATMENT. *(Ger.)* Rosch, W. (Med. Clin., Polyclin., U. Erlangen-Nuremberg, Germany) and R. Ottenjann. *Endoscopy* 2(1): 31-35, 1970.

o P:Motil (5521)
o Diagproc (5655)(5674)(5678)(5709)
o D:Stomduo (5771)(5772)(5783)(5821)
o D:Stomduo:Malabs (5888)
o D:Pancreas (5954)(5956)
o D:Gen (6195)(6238)
o D:Gen:Parasit (6267)

5855 ABSORPTION OF DRUGS *IN VITRO* FROM THE RAT INTESTINE DAMAGED BY TRIPARANOL OR IRRADIATION. *(E.)* Mattila, M. J. (Dept. Pharmacol., U. Helsinki, Finland), L. R. Holsti, V. M. K. Venho and S. Takki. *Arzneimittelforschung* 20(4):533-538, 1970.

In vitro absorption of various drugs was studied in perfused isolated Sprague-Dawley rat intestine damaged by 2-(p-chlorophenyl)-1-[p-diethylaminoethoxy) phenyl]-1-p-tolyl) ethanol (triparanol) or irradiation. Treatment with triparanol, 25-50 mg/kg every 24 hr for 3 weeks, resulted in retarded weight gain, lowered serum cholesterol (mean 449 ± 35 μg/ml vs 842 ± 145 μg/ml for controls) and intestinal inflammation. Another type of intestinal lesion was produced by the whole-body ^{60}Co irradiation of 750 rad. Absorption of morphine hydrochloride and butylscopolamine hydrobromide from control intestine was low but butylscopolamine was slightly more absorbed than its low lipid solubility indicated. Treatment with triparanol improved absorption of both morphine and butylscopolamine. Mecamylamine absorption was superior to that of morphine and butylscopolamine and was not modified by triparanol treatment. Aminophenazone, phenobarbitone sodium, and ethionamide were well absorbed; acetylsalicylic acid absorption was less. Triparanol reduced phenobarbitone absorption but did not affect other compounds; hydrolysis of acetysalicylic acid was not modified by triparanol. Irradiation did not modify absorption of aminophenazone, morphine, or isoniazid, but blocked butylscopolamine absorption entirely on days 3 and 6 post-irradiation. Phenobarbitone and phenytoin absorption was impaired on day 6 post-irradiation. Changes in drug absorption due to intestinal damage seemingly are relatively slight and unpredictable depending on injury and the drug involved.

5856 INDICATION AND TECHNIQUE FOR NOBLE'S OPERATION IN SEVERE ADHESION ILEUS. *(Ger.)* Voelkel, H. (St. Hosp., Manheim, Germany). *Bruns Beitr Klin Chir* 218(1):44-48, 1970.

5857 GALLSTONE ILEUS. *(E.)* Marshak, R. H. (Mt. Sinai Sch. Med., New York, N.Y.) and A. E. Lindner. *Amer J Gastroent* 53(5):478-481, 1970.

5858 STUDIES ON THE SMALL BOWEL OF A GROUP OF NEW SOUTH WALES ABORIGINAL CHILDREN. *(E.)* Harris, M. J. (Prince Henry Hosp., New South Wales, Australia), B. J. Duffy and J. Beveridge. *Med J Aust* 57(8):356-358, 1970.

5859 JEJUNOILEAL SHUNT IN SURGICAL TREATMENT OF MORBID OBESITY. *(E.)* Scott, H. W., Jr. (Vanderbilt U. Med. Ctr., Nashville, Tenn.), D. H. Law, IV, H. H. Sandstead, V. C. Lanier, Jr. and R. K. Younger. *Ann Surg* 171(5):770-782, 1970.

5860 INTESTINAL OBSTRUCTION IN A NEWBORN WITH CONGENITAL ATRESIA AND VOLVULUS CAUSED BY HEMANGIOMA OF THE SMALL BOWEL. *(E.)* Elefant, E. (Elmhurst, N. Y.), J. Jelerova and L. LeBreux. *Clin Pediat* 9(5):287-289, 1970.

5861 BENIGN ABNORMALITIES OF THE ILEOCECAL AREA. *(Dut.)* Snoeks, T. (no affil), L. Van Damme. *T Gastroent* 12(5):426-445, 1969.

5862 INTESTINAL ILEUS THROUGH MARCUMAR TREATMENT. *(Ger.)* Stacker, A. D. (St. Ferd. Sauerbruch Hosp., Wuppertal, Germany) and H. J. Streicher. *Bruns Beitr Klin Chir* 218(1):39-43, 1970.

5863 THE PATHOLOGICAL PHYSIOLOGY OF SMALL INTESTINE AILMENTS AND THEIR PHARMACOTHERAPY. *(Jap.)* Masuda, M. (Kyoto Prefect. U. Sch. Med., Japan). *J Jap Med Ass* 63(2):185-217, 1970.

5864 THE NATURE OF ILEAL ATRESIA DUE TO INTRAUTERINE INTUSSUSCEPTION. *(E.)* Clatworthy, H. W., Jr. (Child. Hosp., Columbus, Ohio) and J. L. Grosfeld. *Arch Surg* 100(6):714-717, 1970.

5865 EFFECT OF JEJUNOILEOSTOMY ON GLUCOSE AND INSULIN METABOLISM IN TEN OBESE PATIENTS. *(E.)* Rehfeld, J. F. (Bispebjerg Hosp., Copenhagen, Denmark), E. Juhl and F. Quaade. *Metabolism* 19(7):529-538, 1970.

5866 JEJUNOJEJUNAL INTUSSUSCEPTION: AN UNUSUAL COMPLICATION AFTER PANCREATODUODENECTOMY. *(E.)* Sedgwick, C. E. (Lahey Clin. Found., Boston, Mass.) and J. K. Vernon. *Amer J Surg* 119(6):752-753, 1970.

5867 MUCOSAL CHANGES IN SMALL INTESTINE IN VARIOUS DISEASES: AN AUTOPSY STUDY. *(E.)* Sehgal, A. K. (Postgrad. Inst. Med. Educ. Res., Chandigarh, India), B. K. Aikat and P. N. Chhuttani. *Indian J Med Res* 58(2):216-222, 1970.

5868 CHRONIC ULCERATIVE LESIONS OF THE BOWEL. *(E.)* Prakash, A. (All-India Inst. Med. Sci., New Delhi), H. D. Tandon, L. Nirmala, S. N. Wadhwa, O. Prakash and M. Kapur. *Indian J Surg* 32(1):1-14, 1970.

5869 TUMORS OF THE SMALL INTESTINE. *(Dut.)* Van Der Kloot, J. F. Van R. (Diaconessen Clin. Leiden, Netherlands). *T Gastroent* 12(5):409-423, 19

5870 CHRONIC ANEMIA COMPLICATING MECKEL'S DIVERTICULUM. *(Dut.)* Van Baden, M. (St. Joseph Clin., Antwerp, Belgium) and G. Ceulemans. *T Geneesk* 26(9):466-468, 1970.

5871 PROBLEMS OF PATHOLOGY DUE TO MECKEL'S DIVERTICULUM. *(Rus.)* Moroz, I. M. (3rd Lvov City Hosp., USSR) and I. M. Kobylchak. *Klin Khir* (3):60-62, 1970.

5872 PRIMARY MULTIPLE CARCINOMA OF THE SMALL INTESTINE. *(Rus.)* Kovalchuk, G. A. (T. Shebtchenko Railroad Hosp., Kishiniov, USSR) and I. S. Nikolenko. *Vrach Delo* (3):16-18, 1970.

5873 A MECKEL'S DIVERTICULUM OF UNUSUAL LENGTH. *(Ger.)* Eberhardt, G. (no affil). *Fortschr Roentgenstr* 112(5):691-692, 1970.

5874 MECONIUM ILEUS. *(Ger.)* Willital, G. H. (Surg. U. Clin. Erlangen-Nuremberg, Germany). *Munchen Med Wschr* 112(17):790-794, 1970.

5875 A CASE OF PEUTZ-JEGHERS SYNDROME. *(Jap.)* Fukushima, T. (Kyoto Natl. Hosp., Japan), H. Ochiai, K. Akaishi, M. Moriya, H. Nishida and M. Tanabe. *Iryo* 23(11):1450-1454, 1969.

5876 MECHANICAL SMALL BOWEL OBSTRUCTION: A PLEA FOR EARLIER SURGICAL INTERVENTION. *(E.)* Playforth, R. H. (U. Kentucky Coll. Med., Lexington), J. B. Holloway and W. O. Griffen, Jr. *Ann Surg* 171(5):783-788, 1970.

- P:Absorp (5499)
- Diagproc (5658)(5674)
- D:Stomduo (5774)(5795)
- D:L.Intest (5903)(5930)
- D:Pancreas:Pancreat (5968)
- D:Livbil (6020)
- D:Livbil:Gallb (6150)
- D:Gen (6182)(6184)(6194)(6245)(6248)
- D:Gen:Parasit (6257)(6267)(6280)

SMALL INTESTINE

Regional Enteritis

5877 MORTALITY IN CROHN'S DISEASE. *(E.)* Prior P. (Dept. Soc. Med., U. Birmingham, England), J. F. Fielding, J. A. Waterhouse and W. T. Cooke. *Lancet* 1(7657):1135-1137, 1970.

A follow-up study for between one and 38 years was conducted in 295 patients with Crohn's disease. During this period 53 patients died (more than twice the number expected for the general population of similar age and sex distribution). Excess deaths were significant for both males and females, and for those patients who had symptoms before age 40. Deaths in the group with blood disorders (3) and in the group with igestive disorders (26) were more than the number xpected, but none of the remaining groups showed a ignificant deviation from expectation. When grouping all causes of death, the expected deaths were 4.46 and 7.93 for males and females, resp., compared o observed deaths of 34 and 19 for males and females, esp. Although the disease itself was mainly responsible for excess mortality, side-effects of steroid herapy and malignancy of the gastrointestinal tract eemingly contributed to mortality.

378 IgM TURNOVER IN CROHN'S DISEASE. *(E.)* Jensen, K. B. (Bispebjerg Hosp., Copenagen, Denmark), N. Goltermann, S. Jarnum, B. Weeke nd H. Westergaard. *Gut* 11(3):223-228, 1970.

Simultaneous studies of the size of abnormal intestinal protein loss estimated by means of ^{59}Fe-labeled iron dextran and by radioiodine-labeled IgM and IgG turnover, were made in 12 patients with Crohn's disease. A weighted amount of the labeled IgM and IgG (0.15 μC of ^{125}I and 0.40 μC of ^{131}I per kg body weight) and ^{59}Fe-iron dextran (2 to 3 μC i.v.) and blood was sampled 10 min after injection and at daily intervals for 3 weeks. IgM was isolated by Sepharose 4B gel filtration and IgG by means of DEAE cellulose chromatography. Stool and urine specimens were collected for up to 3 weeks. Serum IgG in 3 patients was slightly elevated to 15.5, 15.5 and 16.1 g/l, and was lowered to 5.7 g/l in one patient, compared with a normal range of 7.2 to 15.1 g/l. One patient had agamma-A-globulinemia with serum IgM of 0.14 g/l (normal range: 0.23 to 1.33 g/l), and one patient had a diffuse hypogammaglobulinemia, with a serum IgA of 0.02 g/l (normal range: 0.74 to 3.06 g/l). The remaining 11 patients had normal serum IgM concentrations. The fractional catabolic rate of IgM in 11 patients was increased to a range of 14.6 to 36.3% /day compared with a normal range of 8 to 15%/day, and the catabolic rate of IgG was increased to a range of 7.3 to 20.4%/day, above a normal range of 4.0 to 9.6%/day. A positive correlation between the catabolic rate and the serum concentration of IgM was present ($r = 0.53$, $P > 0.02$); however, no positive correlation was found between the catabolic rate of IgM and IgG. The rate of synthesis of IgM was markedly raised or a high normal (6.8, 6.9, 15.1, 19.3 mg/kg/day) in 4 patients with an intraabdominal abscess, and in the remaining cases it was within the normal range of 0.8 to 8 mg/kg/day. The synthesis rate of IgG was elevated to a range of 49 to 175 mg/kg/day in 11 patients, compared with a normal range of 10 to 49 mg/kg/day. A moderate intestinal protein loss was demonstrated in all cases by ^{59}Fe-iron dextran turnover. The fecal ^{59}Fe content ranged from 1.8 to 6.4% of the injected dose and the fecal clearance from 2.1 to 8.3% of the intravascular ^{59}Fe-iron dextran pool per day. The size of protein loss was not related to the increased catabolic rates of IgM and IgG; however, there was a close correlation ($r = 0.92$, $P > 0.001$) between fecal excretion of the labels from IgM and IgG.

5879 THE INCIDENCE AND RELIABILITY OF INDIVIDUAL RADIOGRAPHIC SIGNS IN THE SMALL INTESTINE IN CROHN'S DISEASE. *(E.)* Dyer, N. H. (St. Bartholomew's Hosp., London, England), C. Rutherford, J. H. Visick and A. M. Dawson. *Brit J Radiol* 43(510):401-408, 1970.

Radiographs of barium meal and follow-through examinations of 50 patients with Crohn's disease, 25 patients with malabsorption syndrome and 25 controls (diarrhea) were assessed independently by 2 radiologists to determine the incidence and reliability of individual radiographic signs. Intestinal contraction (64% of cases, 12% observer variation) and rigidity (26% of cases, 14% observer variation) were the most reliable commonly accepted signs of Crohn's disease upon examination. Cobblestone mucosa, longitudinal streaks of barium in the wall, and ulceration (marked mucosal irregularity and clefts) were occasionally reported in controls or malabsorption cases. The most frequent and reliable signs of Crohn's disease (25% or more incidence with observer variation of less than one-half agreed incidence) were ulceration, marked surface irregularity, clefts, rigidity, and contraction. Cobblestone mucosa and stenosis were frequent but unreliable signs (25% or more incidence with frequent observer variation). Infrequent signs in Crohn's disease (25% or less incidence and considerable variation) were skip lesions, featureless mucosa, slight surface irregularity, and longitudinal streaking in walls and fistula. Stippling or flocculation of barium occurred in 40% of cases of Crohn's disease, but was less frequent and less severe than in malabsorption syndrome. Terminal ileum was also demonstrated in 70% of cases of Crohn's disease. Mucosal fold thickness and separatio between folds in duodenum and jejunum were similar in controls and patients with Crohn's disease. In malabsorption, folds were thicker with observer variation common. Jejunal loop width in Crohn's disease was intermediate between widths in the other two groups.

5880 ANORECTAL CROHN'S DISEASE AND EARLY SURGERY: A PARADOXICAL CASE. *(Fr.)* Parturier-Albot (Paris, France), G. Albot, Cl. Olivier, B. Crespon and J. P. Camilleri. *Bul Mem Soc Chir Paris* 59(6):316-335, 1969.

5881 AZATHIOPRINE TREATMENT IN REGIONAL ENTERITIS (CROHN'S DISEASE). *(Ger.)* Kasper, H. (Med. Clin. Polyclin., U. Giessen, Germany), H. D. Zimmermann and E. Nagele. *Deutsch Med Wschr* 95(23):1261-1265, 1970.

5882 PRESTOMAL ILEITIS: CLINICAL AND PATHOLOGICAL FINDINGS IN FIVE CASES. *(E.)* Knill-Jones, R. P. (King's Coll. Hosp., London, England), B. Morson and R. Williams. *Quart J Med* 39(154):287-297, 1970.

5883 PREGNANCY AND CROHN'S DISEASE. *(E.)* Fielding, J. F. (Gen. Hosp., Birmingham, England) and W. T. Cooke. *Brit Med J* 1(5701):76-77, 1970.

5884 CROHN'S DISEASE AND ITS CONSEQUENCES. *(E.)* (anon) *Brit Med J* 2(5701):65-66, 1970.

- D:S.Intest (5861)(5868)
- D:L.Intest:Ulccol (5946)

SMALL INTESTINE

Malabsorption

5885 SCANNING ELECTRON MICROSCOPY OF NORMAL AND CELIAC JEJUNAL MUCOSA. *(E.)* Cooke, W. T. (Gen. Hosp., Birmingham, England), P. Asquith and A. G. Johnson. *Amer J Dig Dis* 15(6):511-521, 1970.

Suction biopsies of jejunal mucosa from 12 normal subjects and from 10 patients with adult celiac disease were studied using a scanning electron microscope. Biopsy specimens were obtained from fasting and subjected to routine dissecting microscopy and histopathology (fixed in sucrose phosphate buffer, freeze-dried, and coated with carbon and metallic silver prior to examination by electron microscope) The mucosal pattern of normal subjects revealed nor mal villi with flat surfaces, composed of regular hexagonal cells (9 μ diameter and traversed by fur-

rows of varying depth. Interspersed among the
epithelial cells were the openings of goblet cells
(8 µ diameter containing mucus, and at the base of
he central villi there were 24 crypt openings (35-
0 µ diameter). The mucosal appearance in subjects
ith adult untreated celiac disease was markedly
ifferent from normal. The epithelial cells were
maller (7.5 µ diameter and more rounded and dome-
haped than the normal epithelium, and irregular
ut well developed microvilli (0.15 µ diameter were
bserved. The mucosal appearance in celiac disease
uggests a losse attachment of cells to each other
nd to the supporting connective tissue. These find-
ngs suggest a mechanical explanation for the in-
reased cell loss and turnover in celiac disease.

886 THE CLINICAL SIGNIFICANCE OF LACTOSE MALABSORPTION. *(E.)* Gundmand-Hoyer, E. (Hosp. U.
und, Sweden), A. Dahlqvist and S. Jarnum. *Amer J Gas-
roent* 53(5):460-473, 1970.

he clinical symptoms found in 25 patients with lac-
ose malabsorption (18 with other gastrointestinal
isorders), and their reactions to one of 3 types of
ietary therapy, (milk-free, milk and milk-product
ree, and lactose-free) were described. The proximal
ejunum of each patient was biopsied for histological
tudy and enzyme activity assay, and sugar tolerance
ests were performed. In response to the lactose-
olerance test, all patients complained of gastro-
ntestinal symptoms of diarrhea, abdominal pain or
loating, and in all patients there was a blood glu-
ose elevation of from 6 mg% to a high of 33 mg% (in
diabetic patient). The glucose-galactose tolerance
est produced a normal rise in blood sugar, and only 5
tients complained of slight abdominal symptoms. The
st common symptoms associated with lactose malab-
rption were mild to moderate diarrhea in 84% of
e patients, borborygmia, bloating or flatulence
64%, and moderate to severe abdominal pain in
% of the patients. Other symptoms were steator-
ea (3 patients), intestinal protein loss (1 pa-
ent with Chron's disease) and drowsiness following
ctose test (3 patients), which resembled alcohol
toxication. Only 8 patients had spontaneously
served the relationship between milk intake and
eir symptoms. The milk-free diet was not able to
olish symptoms in most patients. In two-thirds
the patients, a diet without milk or milk prod-
ts was sufficient to abolish the symptoms, and
one-third of the patients, only a lactose-free
et abolished symptoms.

87 A CASE OF WHIPPLE'S DISEASE: BACTERIOLOGICAL AND MORPHOLOGICAL STUDY. *(Fr.)* Sarles,
(INSERM, Marseilles, France), Y. Peloux, F. Tasso,
Lebreuil, J. Tamalet and P. Fournier. *Path Biol*
(3-4):129-140, 1970.

mesenteric ganglion was obtained for bacteriological
amination during surgical intervention on a patient
th Whipple's disease. This resulted in the isolation
a *corynebacterium.* At the onset of illness the
tient was 45 years old and complained of joint pain;
ter 6 years he had episodes of diarrhea (15 to 16 stools daily) with diffuse abdominal pain. The patient responded well to treatment with demethylchlortetracycline (mexocyne at 2 g/day), but suffered a relapse whenever the medication was discontinued. The patient was rehospitalized at age 64 and a jejunal biopsy specimen showed massive infiltration of histocytes into the chorion and many free bacteria. After 5 years (with continued medication) the patient complained of abdominal pain. Investigation revealed biochemical changes reflecting some liver damage (bilirubin, BSP, sedimentation rate, etc.). A cholecystectomy was performed for gallbladder lithiasis, and during surgery the wall of the jejunum was observed to be thickened and overrun with dilated lymph nodes. The anatomopathological examination showed typical changes due to Whipple's disease: lymphangiectasia, numerous frothy histocytes, and often plasmodia with Sieracki corpuscles. A culture of the mesenteric lymph node was instrumental in the isolation of the *Corynebacteria.* Electron microscopy revealed changes in the chorion, numerous lysosomes in the cytoplasmic organization of the epithelial cells, widening of the intercellular spaces (particularly around the base of the epithelium). Some areas of the chorion were infiltrated by a large number of corpuscles (short rods comparable to bacteria described in Whipple's disease). The bacteria dispersed in the chorion, or enclosed in the vacuoles of phagocytes, differ in their structure from each other, and divided according to the particular characteristics of gram + bacteria. The identification of the *corynebacteria* in this disease confirms the findings of Caroli and Prevot.

5888 INTESTINAL ABSORPTION IN PEPTIC ULCER. *(Rus.)* Plastinina, R. A. (Izhevsk Med. Inst., USSR) and V. V. Trusov. *Sovet Med* 33(3):87-90, 1970.

5889 TROPICAL SPRUE IN NIGERIA. *(E.)* Falaiye, J. M. (Coll. Med., U. Lagos, Nigeria). *J Trop Med Hyg* 73(5):119-125, 1970.

5890 INTESTINAL MORPHOLOGY OF RURAL HAITIANS: A COMPARISON BETWEEN OVERT TROPICAL SPRUE AND ASYMPTOMATIC SUBJECTS. *(E.)* Klipstein, F. A. (U. Rochester Med. Ctr., N. Y.), O. Brunser and S. Eidelman. *Gastroenterology* 58(5):655-668, 1970.

5891 MALABSORPTION AND SUBTOTAL VILLOUS ATROPHY SECONDARY TO PULMONARY AND INTESTINAL TUBERCULOSIS. *(E.)* Fung, W. P. (Dept. Clin. Med., U. Singapore), K. K. Tan, S. F. Yu and K. M. Kho. *Gut* 11(3):212-216, 1970.

5892 HISTOLOGICAL OBSERVATIONS ON BONE IN INTESTINAL MALABSORPTION AND VITAMIN D DEFICIENCY. *(E.)* Fischer, J. A. (Mayo Clin., Rochester, Minn.), U. Binswanger, R. K. Schenk and W. Merz. *Hormone Metab Res* 2(2):110-115, 1970.

5893 DISTURBANCES IN FAT DIGESTION INDUCED BY ACIDIC JEJUNAL pH DUE TO GASTRIC HYPERSECRETION IN MAN. *(E.)* Summerskill, W. H. J. (Mayo Clin., Rochester, Minn.), V. L. W. Go, J. R. Poley and A. F. Hofmann. *Gastroenterology* 58(5):638-646, 1970.

5894 REGARDING THE DEFINITION OF TROPICAL SPRUE. *(E.)* Klipstein, F. A. (U. Rochester Med. Ctr., N. Y.) and S. J. Baker. *Gastroenterology* 58(5):717-721, 1970.

5895 BIOCHEMICAL INVESTIGATION OF MALABSORPTION AND ADJUSTMENT TO MEDIUM CHAIN TRIGLYCERIDES. *(Dut.)* Verdonk, G. (Med. Fac. St. U. Ghent, Belgium). *Verhandelingen* 31(5-6):355-418, 1969.

5896 LACTOSE INTOLERANCE IN THE ADULT. *(It.)* Marenco, G. (Holy Crown Hosp., Pietra Ligure, Italy), D. Ghibaudi and A. Meraviglia. *Minerva Pediat* 22(11):505-513, 1970.

5897 LACTOSE INTOLERANCES AND TREATMENT WITH A NEW MILK, ZYMIL. *(It.)* Durand, P. (G. Gaslini Inst., Genoa, Italy). *Minerva Pediat* 22(11):525-528, 1970.

5898 DISACCHARIDE INTOLERANCE AND INDIAN CHILDHOOD CIRRHOSIS: III. RELATIONSHIP OF MALTOSURIA TO AMINOACIDURIA. *(E.)* Dhatt, P. S. (Med. Coll., Rohtak, Haryana, India), H. Singh and H. L. Gupta. *Indian J Med Res* 57(12):2246-2249, 1969.

5899 BURNING-FEET SYNDROME: CASE DUE TO MALABSORPTION AND RESPONDING TO RIBOFLAVIN. *(E.)* Lai, C. S. (Outram Road Gen. Hosp., Singapore) and G. A. Ransome. *Brit Med J* 2(5702):151-152, 1970.

o P:Morph (5433)
o P:Absorp (5495)
o P:Secr:Int((5612)
o Diagproc (5648)(5666)(5694)
o D:S.Intest (5863)
o D:Livbil (5980)
o D:Gen (6160)
o D:Gen:Parasit (6280)

LARGE INTESTINE

5900 DECREASING MORTALITY AND INCREASING MORBIDITY FROM ACUTE APPENDICITIS. *(E.)* Kazarian, K. K. (New York Med. Coll., Metropolitan Hosp. Ctr., New York), W. J. Roeder and W. L. Mersheimer. *Amer J Surg* 119(6):681-685, 1970.

5901 ADENOCARCINOMA OF THE VERMIFORM APPENDIX. *(E.)* James, P. M., Jr. (Bowman Gray Sch. Med., Winston-Salem, N. C.) and A. T. Berman. *Amer J Surg* 119(6):733-736, 1970.

5902 THE POSSIBLE NATURAL HISTORY OF BENIGN SOLITARY CECAL ULCER. *(E.)* Scott, I. H. K. (Guy's Hosp., London, England) and F. A. W. Schweitzer. *Guy's Hosp Rep* 119(1):91-93, 1970.

5903 CARE FOR PATIENTS WITH ILEOSTOMY OR COLOSTOMY. *(Fr.)* Ricordeau, P. (Hosp. Rothschild, Paris, France), L. Hollender and J. Loygue. *Ann Chir* 23(25-26):1309-1317, 1969.

5904 CAUSES OF LATE DIAGNOSIS IN CANCER OF THE COLON. *(Rus.)* Mamykin, S. N. (Barnaul City Hosp. USSR) and A. M. Klunichenko. *Vestn Khir* 104(1):87-89, 1970.

5905 SQUAMOUS CELL CARCINOMA AND ADENOACANTHOM OF THE COLON. *(E.)* Birnbaum, W. (U. California Sch. Med., San Francisco). *JAMA* 212(9): 1511-1513, 1970.

5906 EXSANGUINATING STERCORAL ULCERATION. *(E.)* Greenberg, S. R. (Chicago Med. Sch., Ill. R. V. Milliser and B. H. Neiman. *Amer J Dig Dis* 15(5):485-488, 1970.

5907 COLLOID CARCINOMA IN THE ANO-RECTAL REGIO *(E.)* Tavadia, H. B. (Southern Gen. Hosp. Glasgow, Scotland). *Scot Med J* 15(4):149-152, 197

5908 PERIANAL PAGET'S DISEASE. *(E.)* Linder, J. H. (Bowman Gray Sch. Med., Wake Fores U., Winston-Salem, N. C.) and R. T. Myers. *Amer S* 36(6):342-345, 1970.

5909 CANCER OF THE COLON: THE FIVE AND TEN Y SURVIVAL RATES FOLLOWING RESECTION UTILI ING THE ISOLATION TECHNIQUE. *(E.)* Turnbull, R. B. Jr. (Cleveland Clin. Found., Ohio). *Ann Roy Coll Surg Edinb* 46(5):243-250, 1970.

5910 ENDOMETRIOSIS OF THE COLON AND RECTUM. Lorincz, A. B. (Pritzker Sch. Med., U. Chicago, Ill.). *J Abdom Surg* 12(6):95-96, 1970.

5911 GRACILIS ANOPLASTY: REPORT OF A SUCCESSFUL CASE. *(E.)* Mann, A. (Melbourne, Australia). *Aust New Zeal J Surg* 39(4):405-407, 1970.

5912 ARGENTAFFIN CELL CARCINOMA OF THE RECTUM. *(E.)* Smith, E. R. (Otago Med. Sch., New Zealand). *Aust New Zeal J Surg* 39(4):401-404, 1970.

5913 VARICES OF THE COLON. *(E.)* Kiselow, M. C. (Marquette Sch. Med., Milwaukee, Wisc.), M. Wagner, W. L. Keats and M. L. Jan. *Arch Surg* 100(6):718-720, 1970.

5914 DIVERTICULAR DISEASES OF THE COLON. *(Ger.)* Heberer, G. (Surg. U. Clin., Polyclin., Cologne, Germany), H. Von Brehm and J. Hirschfeld. *Chirurg* 41(6):252-259, 1970.

5915 RADIOTHERAPY OF RECTAL CARCINOMA. *(Ger.)* Fornusek, A. H. (Radiol. Clin., U. Heidelberg, Germany), H. Kuttig and F. Zunter. *Strahlentherapie* 139(3):271-279, 1970.

5916 SURGICAL THERAPY OF DIVERTICULITIS. *(Ger.)* Mappes, G. (Surg. U. Clin. Mainz, Germany), . Pross and P. Kempf. *Chirurg* 41(6):270-275, 1970.

917 THE PERINEOABDOMINAL OPERATION: AN IMPROVED OPERATION FOR RECTAL CANCER. *(E.)* Markowitz, A. M. (Coll. Physician Surgeon, Columbia ., New York, N. Y.). *Amer J Surg* 119(5):599-602, 970.

918 REVERSIBLE VASCULAR OCCLUSION OF THE COLON. *(E.)* Davis, J. E. (Watts Hosp., Durham, . C.). *Ann Surg* 171(5):789-795, 1970.

919 DIVERTICULAR DISEASE. *(E.)* (anon) *Brit Med J* 1(5702):126-127, 1970.

920 MASSIVE RECTAL PROLAPSE: A SUGGESTED METHOD OF SURGICAL REPAIR. *(E.)* Rosser, S. B. Dist. Columbia Gen. Hosp.). *J Nat Med Ass* 62(3): 21-223, 1970.

5921 PREVALENCE OF UNDIAGNOSED CANCER OF THE LARGE BOWEL FOUND AT AUTOPSY IN DIFFERENT RACES. *(E.)* Berg, J. W. (Natl. Cancer Inst., Bethesda, Md.), A. Downing and R. J. Lukes. *Cancer* 5(5):1076-1079, 1970.

922 THE PATHOLOGICAL PHYSIOLOGY OF COLITIS AND ITS PHARMACOTHERAPY. *(Jap.)* Matsunaga, F. Hirosaki U. Med. Sch., Japan). *J Jap Med Ass* 63(2): 18-244, 1970.

5923 DIAGNOSIS AND TREATMENT OF HEMORRHOIDS. *(E.)* Clery, A. P. (St. Laurence Hosp., Dublin, Ireland). *J Irish Med Ass* 63(395):181-185, 1970.

5924 RECTOSIGMOID CARCINOID TUMOR: REPORT OF A FATAL CASE DISCOVERED DURING THE PUERPERIUM. *(E.)* Matthews, N. E. (U. Cincinnati Coll. Med., Ohio). *Ohio Med J* 66(6):579-582, 1970.

5925 MACROPHAGES OF THE RECTAL LAMINA PROPRIA IN CHILDREN. *(E.)* Yunis, E. (Sch. Med. U. Pittsburgh, Pa.) and F. E. Sherman. *Amer J Clin Path* 53(5):580-591, 1970.

5926 CUSHING'S SYNDROME ASSOCIATED WITH POLYPS OF THE COLON. *(E.)* Chowers, I. (Hadassah Med. Sch., Jerusalem, Isreal), Z. Eyal and N. J. Saltz. *Digestion* 3(3):179-186, 1970.

5927 IS APPENDECTOMY FOLLOWED BY INCREASED CANCER RISK? *(E.)* Berndt, H. (Robert Rossle Clin., Berlin, Germany). *Digestion* 3(3):187-191, 1970.

5928 UNNECESSARY APPENDECTOMY VERSUS MISSED APPENDICITIS IN THE ELDERLY. *(E.)* Howie, J. G. R. (Canniesburn Hosp., Glasgow, Scotland). *Geriatrics* 25(6):136-139, 1970.

5929 RECTAL MOTILITY PATTERNS IN INFANTS AND CHILDREN WITH AGANGLIONIC MEGACOLON. *(E.)* Barbero, G. J. (Hahnemann Med. Coll. Hosp., Philadelphia, Pa.), G. Suster and I. C. Kim. *Amer J Dis Child* 119(6):494-497, 1970.

5930 SPONTANEOUS ILEAL EVISCERATION THROUGH THE ANUS DUE TO RECTOSIGMOID RUPTURE. *(E.)* Eisen, J. (Ohio St. U. Coll. Med., Columbus). *Amer J Surg* 119(6):758-759, 1970.

5931 INTESTINAL BACTERIAL FLORA AFTER TOTAL AND PARTIAL COLON RESECTION. *(E.)* Floch, M. (Yale U. Sch. Med., New Haven, Conn.), S. M. Levine, M. Gelfand, T. Hersh, G. Wyshak and H. M. Spiro. *Amer J Dig Dis* 15(6):523-528, 1970.

5932 THE SECOND COLORECTAL CANCER: A RETROSPECTIVE ANALYSIS OF THE VALUE OF EXTENDED COLONIC RESECTION. *(E.)* Gruber, R. (U. California Sch. Med., San Francisco), C. J. Schein and M. L. Gliedman. *Amer J Surg* 119(6):652-654, 1970.

5933 POSTERIOR SPHINCTEROTOMY AND RECTAL MYOTOMY IN THE MANAGEMENT OF HIRSCHSPRUNG"S DISEASE. *(E.)* Thomas, C. G., Jr. (U. North Carolina Sch. Med., Chapel Hill), C. A. Bream and P. DeConnick. *Ann Surg* 171(5):796-810, 1970.

5934 GARDNER'S SYNDROME: A REVISIT TO A PREVIOUSLY DESCRIBED FAMILY. *(E.)* Thayer, W., Jr. (Rhode Island Hosp., Providence), R. D. Coli, J. P. Moore, P. H. LaMarche and F. G. DeLuca. *Amer J Dig Dis* 15(6):551-568, 1970.

5935 THE APPENDIX ARGENTAFFIN SYSTEM IN APPENDICITIS. *(Rus.)* Derizhanova, I. S. (Rostov Med. Inst., USSR). *Arkh Patol* 32(1):60-64, 1970.

5936 LOW ANTERIOR RESECTION IN CANCER OF THE RECTUM. *(E.)* Kratzer, G. L. (Allentown Hosp., Pa.) and M. S. Win. *Amer J. Surg* 119(6): 649-651, 1970.

5937 PERITONITIS IN PATIENTS WITH ACUTE APPENDICITIS. *(Rus.)* Mayat, V. S. (N. I. Pirogov 2nd Med. Inst. Moscow, USSR), V. D. Federov and A. M. Nitkin. *Khirurgiia* 46(4):89-97, 1970.

5938 CANCER OF THE LARGE INTESTINE IN EXPERIMENTAL ADHESIONS. *(Rus.)* Troitsky, R. A. (Central Inst. Postgrad. Med. Educ., Moscow, USSR). *Eksp Khir Anest* 15(2):44-47, 1970.

5939 HEMORRHOID PATHOGENESIS: ROLE OF ARTERIAL AND VENOUS ANASTOMOSES AND CAVERNOUS STRUCTURES OF THE RECTUM. *(Rus.)* Kapuller, L. L. (Proctol. Res. Labs., Moscow, USSR), R. V. Pyrtakhia and V. L. Ryvkin. *Arkh Pat* 32(3):52-56, 1970.

5940 VILLOUS ADENOMA OF THE COLON: TWO CASES. *(Ger.)* Ahrens, H. P. (Gen. Hosp. Barmbek, Hamburg, Germany). *Munchen Med Wschr* 112(17):795-798, 1970.

5941 GENTAMICIN IN PREOPERATIVE PREPARATION OF THE COLON. *(Ger.)* Wiedemann, B. (Hyg. Inst. U. Frankfurt, Germany), G. Schuster, W. Hartel and J. Lenz. *Chirurg* 41(6):275-278, 1970.

5942 THE (SELF-HEALING) CECAL FISTULA TO INSURE ANASTOMOSES OF COLON AND RECTUM. *(Ger.)* Stelzner, F. (Surg. U. Clin., Hamburg, Germany). *Chirurg* 41(6):281-283, 1970.

5943 CARCINOID OF THE CECUM. *(E.)* Sachdeva, H. S. (Inst. Postgrad. Med. Educ. Res., Chandigarh, India), I. C. Pathak, S. S. Anand and R. N. Chakravarti. *Indian J Surg* 32(1):49-54, 1970.

5944 UNUSUAL RECTO-COLONIC ALTERATIONS. *(Dut.)* Ceulemans, G. (Hove, Belgium), F. Neutjens and P. Lardinoit. *T Gastroent* 12(6):549-555, 1969.

5945 COLONIC STENOSIS FOLLOWING NECROTIZING ENTEROCOLITIS OF THE NEWBORN. *(E.)* Krasna, I. H. (Mount Sinai Hosp. Sch. Med., New York, N.Y.), J. M. Becker, K. M. Schneider and A. R. Beck. *J Pedi Surg* 5(2):200-206, 1970.

- Diagproc (5679)(5681)(5704)(5709)(5722)
- D:S.Intest (5868)
- D:S.Intest:Regent (5877)(5883)(5884)
- D:L.Intest:Ulccol (5950)
- D:Gen (6168)(6246)(6248)
- D:Gen:Parasit (6267)

LARGE INTESTINE

Ulcerative Colitis

5946 THE DIAGNOSTIC VALUE OF MUCOSUBSTANCES IN RECTAL BIOPSIES FROM PATIENTS WITH ULCERATIVE COLITIS AND CROHN'S DISEASE. *(E.)* Filipe, M. I. (Westminster Med. Sch., London, England) and I. Dawson. *Gut* 11(3):229-234, 1970.

Sixty-two rectal biopsies from 36 patients with ulcerative colitis and 29 biopsies from 15 patients with Crohn's disease were studied relative to content of neutral, acid non-sulfated and sulfated mucosubstances. Investigation revealed a marked decrease in mucosubstances in most cases of ulcerative colitis, but no corresponding decrease in patients with Crohn's disease. In both diseases, there was a general reduction in acid non-sulfated and sulfated mucosubstances, but reduction affected non-sulfated less than sulfated. Decreased mucosubstance was related to the intensity of inflammation in lamina propria, but not to duration of disease. In the colitis group, 36/62 rectal biopsies had a heavy inflammatory cellular infiltrate in the lamina propria; 29 of this group showed a marked mucosubstance decrease, 4 a patchy decrease, and 3 had normal amounts. In the Crohn's disease group, although 8 biopsies showed severe and 21 moderate or mild inflammatory changes in lamina propria, mucosubstances were reduced in only 2 biopsies. Techniques for mucosubstances seemingly are of value in differentiating between the two diseases in rectal biopsies.

5947 MODIFICATION OF *IN VITRO* TOXICITY OF LYMPHOCYTES FROM PATIENTS WITH CHRONIC ULCERATIVE COLITIS OR GRANULOMATOUS COLITIS FOR ALLOGENIC COLONIC EPITHELIAL CELIS. *(E.)* Shorter, R. G. (Mayo Clin., Rochester, Minn.), M. R. Cardoza, S. G. ReMine, R. J. Spencer and K. A. Huizenga. *Gastroenterology* 58(5):692-698, 1970.

Lymphocytes from 12 patients (5 with active chronic ulcerative colitis and 7 with granulomatous colitis) were incubated in the presence of the lipopolysaccharide extract of *E. coli* 0119:B14, the tuberculin preparation purified protein derivative or phytohemagglutinin-P, followed by the testing of the lymphocytes for their cytotoxic effects *in vitro* on allogenic colonic epithelial cells. Normal subject lymphocytes showed no cytotoxicity for colonic cells initially and those incubated alone remained noncytotoxic after 4 days (colonic cell viability · 90% in all instances at each interval). Similar findings were obtained after 4 days in the 6 tests n which lymphocytes had been incubated in the presence of phytohemagglutinin-P and also in the 4 ests in which they were exposed to the tuberculin reparation. However, in the 6 tests in which lymhocytes were incubated for 4 days in the presence f *E. coli* extract, they became cytotoxic for coonic cells (mean viability: 68.33 ± 5.04%). Iniially, lymphocytes from all patients with chronic lcerative colitis or granulomatous colitis were ytotoxic for colonic cells (mean viability: 70.58 ± 1.59%, range: 34 to 76%), after 4 hr of mixed inubation at 37° C. After 4 days of incubation alone, he lymphocytes retained their cytotoxic effects. When lymphocytes from any of the 12 patients were ncubated for 4 days in the presence of *E. coli* extract, they showed considerably little cytotoxic effect (mean colonic viability: 90.08 ± 2.97% range, 84-95%). This effect did not occur when the lymphocytes were incubated with phytohemagglutinin-P or the tuberculin preparation purified protein derivative. It may be that the *E. coli* extract is a specific antigen and that its preincubation with sensitized lymphocytes resulted in their desensitization and that the phenomenon of cytotoxicity for colonic cells might be a final expression of delayed hypersensitivity *in vitro*.

5948 ULCERATIVE PROCTITIS. *(E.)* Folley, J. H. (Hitchcock Clin., Hanover, N.H.). *New Eng J Med* 282(24):1362-1364, 1970.

5949 ULCERATIVE COLITIS. *(E.)* Watkinson, G. (Western Infirm., Glasgow, Scotland). *Scot Med J* 15(5):184-194, 1970.

5950 THE RESULTS OF ILEORECTAL ANASTOMOSIS AT ST. MARK'S HOSPITAL FROM 1953 TO 1968. *(E.)* Baker, W. N. W. (St. Mark's Hosp., London, England). *Gut* 11(3):235-239, 1970.

5951 ABSORPTION OF ^{51}Cr-EDTA FROM COLON IN NORMAL INDIVIDUALS AND PATIENTS WITH ULCERATIVE COLITIS. *(Nor.)* Rask-Madsen, J. (Copenhagen Hosp., Denmark) and M. Schwartz. *Ugeskr Laeg* 132(22): 1032-1037, 1970.

- o Diagproc (5684)
- o D:S.Intest:Regent (5882)
- o D:L.Intest (5944)

PANCREAS

952 ISLET CELL TUMORS OF THE PANCREAS. *(Fr.)* Mignon, F. (no affil). *Concours Med* 2(18):4043-4053, 1970.

953 THE ADVANTAGES OF BYPASS OPERATIONS OVER RADICAL PANCREATODUODENECTOMY IN THE TREATENT OF PANCREATIC CARCINOMA. *(E.)* Crile, G., Jr. Cleveland Clin. Found., Ohio). *Surg Gynec Obstet* 30(6):1040-1053, 1970.

954 EFFECTS OF VAGOTOMY COMBINED WITH HEMIGASTRECTOMY ON THE PANCREAS. *(E.)* Katsumi, . (Wakayama Med. Coll., Japan), Y. Kariya, S. Tanaka nd Y. Nakao. *Wakayama Med Rep* 13(3):87-102, 1970.

955 CARCINOMA OF THE PANCREATIC HEAD WITH UNUSUAL PRESENTATION: CASE REPORT AND DISUSSION. *(E.)* Crawford, A. P. (Brisbane, Australia). *ust New Zeal J Surg* 39(4):384-389, 1970.

956 ANNULAR PANCREAS IN THE ADULT. *(E.)* Alexander, H. C. (Columbia U. Coll. Phys. Surg. ew York, N.Y.). *Amer J Surg* 119(6):702-704, 1970.

5957 COMPLICATIONS OF PANCREATIC DISEASE (LARGE AND REPEATED ENZYMATIC PLEURAL EFFUSIONS). *(Fr.)* Mouchet, A. (Paris, France) and J. Marquand. *Ann Chir* 24(5-6):345-346, 1970.

5958 TWO CASES OF "PANCREATIC CHOLERA" WITH FEATURES OF PEPTIDE-SECRETING ADENOMATOSIS OF THE PANCREAS. *(E.)* Sircus, W. (Western Gen. Hosp., Edinburgh, Scotland), P. W. Brunt, R. J. Walker, W. P. Small, C. W. A. Falconer and C. G. Thomson. *Gut* 11(3):197-205, 1970.

5959 MUCOVISCIDOSIS AND DIABETES MELLITUS. *(Ger.)* Kaiser, G. (U. Child. Clin. Berne, Switzerland), K. Zuppinger and E. Joss. *Helvetia Pediat Acta* 25(2):135-146, 1970.

- o Diagproc (5698)
- o D:S.Intest (5866)
- o D:Livbil:A.V.Hep (6094)
- o D:Livbil:Cirrh (6121)
- o D:Gen (6146)(6168)(6214)(6231)

PANCREAS

Pancreatitis

5960 CLINICAL TRIAL WITH TRASYLOL IN ACUTE PANCREATITIS. *(Ger.)* Moller, C. (4th Surg. U. Clin., Helsinki, Finland) and L. Stjernvall. *Ann Chir Gynaec Fenn* 58(4):296-299, 1969.

The clinical effects of Trasylol (an enzyme inhibitor) in high doses (300,000-500,000 KIU daily) on patients (45 control; 43 treatment) with acute pancreatitis was studied. Trasylol had no significant effect on mortality (2.3% with Trasylol; 4.2% without), or regression of pain (3.7 days with Trasylol; 3.3 days without). However, elevated blood leucocytes (>8,000/mm^3: 8.6 days with Trasylol; 6.5 days without) and pyrexia (>38° C: 8.8 days with Trasylol; 5.6 days without) remained longer, the difference being significant. Intestinal paralysis and increased diastasuria were equal in both groups.

5961 THE CONNECTION BETWEEN THE ADRENAL CORTEX AND LIPOLYTIC PANCREATITIS: DEMONSTRATED IN A MODEL "CORTISONE-PANCREATITIS". *(Ger.)* Wanke, M. (Path. Inst. U. Heidelberg, Germany) and G. Horeyseck. *Z Gastroent* 8(2):86-95, 1970.

The effect of long-term cortisone treatment on pancreatic lipase and morphology was studied in 40 male, Wistar rats by enzyme assay. Animals were divided into 5 groups (I) control, (II) 7 mg cortisone/kg/day for 41 days, (III) 7 mg cortisone/kg/day for 55 days, (IV) 5 mg cortisone/kg/day for 6 days, and 6.7 mg/kg/day for following 14 days, (V) 24 mg lipase into pancreatic duct. Lipase was increased in pancreatic homogenates (normal—7065 I.U./g; (II)—7744 I.U./g; (III)--10,300 I.U./g; (IV)--11,685 I.U./g). The increase in enzyme activity and tissue changes were directly related to adiposity. In addition to necroses in peripancreatic, interpancreatic and abdominal fatty tissues, perifocal primary leucocytic and, later, round cell infiltration was found in the pancreatic acini. The morphological changes resulting from cortisone treatment and lipase instillation are similar to the type of damage caused by lipase concentration in internal adiposity.

5962 PROGRESS IN THE TREATMENT OF PANCREATIC LITHIASIS. *(Ger.)* Grill, W. (Starnberg Hosp., Austria). *Wien Klin Wschr* 82(21) 385-387, 1970.

5963 THE PATHOGENESIS OF ACUTE PANCREATITIS. *(Ger.)* Stahlheber, H. (2nd Med. Clin., U. Munich, Germany) and M. M. Forell. *Med Klin* 65(25) 1197-1200, 1970.

5964 THE PATHOLOGICAL PHYSIOLOGY OF PANCREATITIS AND ITS PHARMACOTHERAPY. *(Jap.)* Naito, S. (Dept. Intern. Med., Juntendo U., Tokyo, Japan). *J Jap Med Ass* 63(2):279-294, 1970.

5965 RADIOLOGICAL DEMONSTRATION OF SPONTANEOUS RUPTURE OF PANCREATIC PSEUDO-CYSTS. *(E.)* Guyer, P. B. (Southampton Gen. Hosp., England) and P. H. Amin. *Brit J Radiol* 43(509):342-343, 1970.

5966 ACUTE PANCREATITIS. *(E.)* Cogbill, C. L. (Ohio St. U. Coll. Med., Columbus) and K. T. Song. *Arch Surg* 100(6):673-676, 1970.

5967 ACUTE PANCREATITIS FOLLOWING EXTRACORPOREAL CIRCULATION. *(E.)* Panebianco, A. C. (VA Hosp., Oteen, N.C.), S. M. Scott, C. H. Dart, Jr. T. Takaro and H. M. Echegaray. *Ann Thor Surg* 9(6): 562-568, 1970.

5968 JEJUNAL INFARCTION AS A COMPLICATION OF PANCREATITIS. *(E.)* Griffiths, R. W. (Mayo Clin., Rochester, Minn.) and P. W. Brown, Jr. *Gastroenterology* 58(5):709-712, 1970.

5969 THE SPHINCTER OF ODDI AND PANCREATITIS. *(E.)* Davis, A. E. (Prince Henry Hosp., Little Bay, Australia) and R. C. Pirola. *Amer J Dig Dis* 15(6):583-587, 1970.

5970 SERUM CREATINE PHOSPHOKINASE IN ACUTE PANCREATITIS. *(E.)* Rinderknecht, H. (U. Southern California, Sch. Med., Los Angeles), P. Silverman, B. J. Haverback and M. C. Geokas. *Clin Biochem* 3(2):165-170, 1970.

5971 EFFECT OF ENZYME ACTIVATION ON THE PATHOGENESIS OF PANCREATITIS. *(Dut.)* Schmidt, H. (Med. U. Clin. Gottingen, Germany) and W. Creutzfeldt. *T Gastroent* 12(6):491-512, 1969.

5972 SYMPTOMS OF SOLAR PLEXUS GANGLIA INVOLVEMENT IN ACUTE PANCREATITIS. *(Rus.)* Serebriantsev, V. K. (Mikhailovsk Central Hosp., Riazan City, USSR) and B. I. Glukhovets. *Vrach Delo* (5):47-49, 1970.

5973 THE LIVER IN ACUTE CHOLECYSTOPANCREATITIS. *(Rus.)* Shabanov, A. N. (I.M. Setchenov Med. Inst., Moscow, USSR) and R. I. Titov. *Klin Med* 48(4):75-79, 1970.

5974 HYPOTHERMIA TREATMENT IN ACUTE PANCREATITIS. *(Rus.)* Romanov, A. I. (Leningrad Med. Inst., USSR). *Vestn Khir* 104(3):43-45, 1970.

5975 RESULTS OF TREATMENT OF ACUTE PANCREATITIS *(Rus.)* Dorogan, D. A. (Dniepropetrovsk, USSR) and I. T. Kobyliatsky. *Vrach Delo* (3):37-39, 1970.

5976 HEMORRHAGIC PSEUDOCYST WITH PANCREATITIS IN A TEN-YEAR-OLD BOY. *(E.)* Eisenbaum, S (San Francisco, Calif.), R. N. Grant and A. Cohen. *Amer Surg* 36(6):387-388, 1970.

5977 PANCREATITIS IN DOGS LOSING PANCREATIC JUICE: PANCREATIC JUICE CONSTITUENTS AND THE REGULATION OF BLOOD SERUM PROTEIN COMPOSITION. *(Rus.)* Fenina, E. P. (Inst. Exp. Med., Acad. Med. Sci., Leningrad, USSR). *Fiziol Zh SSSR Sechenov* 56(4):671-675, 1970.

5978 CLASSIFICATION OF ACUTE CHOLECYSTOPANCREATITIS. *(Rus.)* Likhachev, V. A. (Kharkov Med. Inst., USSR). *Khirurgiia* 46(2):30-34, 1970.

5979 LONG TERM DEVELOPMENT OF CHRONIC PANCREATITIS IN 113 CASES: II. STUDY OF THE DEVELOPMENT OF CHRONIC PANCREATITIS IN PATIENTS WHO HAVE UNDERGONE OPERATION. *(Fr.)* Levrat, M. (Hosp. Eduoard Herriot, Lyon, France), L. Descos, B. Moulinier and J. Pasquier. *Arch Franc Mal Appar Dig* 59(6):305-314, 1970.

o P:Motil (5522)
o Diagproc (5662)(5666)(5711)(5713)(5728)
o D:Pancreas (5956)

LIVER AND BILIARY TRACT

5980 GASTRIC IRON BINDING SUBSTANCE (GASTROFERRIN) IN A FAMILY WITH HEMOCHROMATOSIS. *(E.)* Deller, D. J. (Dept. Med. U. Adelaide, Australia), R. G. Edwards, G. Dart, C. G. Luke and P. S. Davis. *Australasian J Med* 18(1):36-42, 1969.

Elevation of serum iron level, percentage iron saturation, degree of radioiron absorption, urinary iron excretion following diethylenetriaminepentaacetic acid (D.T.P.A.) administration and gastric juice iron inding substance (gastroferrin) were studied in the relatives of a patient with hemochromatosis to obtain evidence for the implication of a gastroferrin deiciency in the disease. Six of the 31 relatives 19%) had abnormal test results indicative of iron overload (serum iron levels above the normal range of 71 to 210 μg/100 ml for men and 65 to 175 μg/100 ml for women, percentage iron saturations above the ormal 22 to 73% for men and 18 to 56% for women, and urinary excretion of iron after D.T.P.A. administration bove 0.5 mg iron over a 5 hr period). Radioiron aborption was not related to the other parameters of isturbed iron metabolism but 5 of the 6 relatives ith iron overload showed reduced levels of gastroerrin and the 1 with a normal level had a liver with atty infiltration and extensive fibrosis similar to hat of the patient. Data support the hypothesis that emochromatosis may be the result of an inborn error f metabolism in which there is failure to produce astroferrin (thus inhibiting iron absorption).

981 ANGIOGRAPHIC STUDY OF THE COLLATERAL CIRCULATION TO THE LIVER AFTER LIGATION OF HE HEPATIC ARTERY IN MAN. *(E.)* Bengmark, S. (Dept. Surg., U. Gotegorg, Sweden) and K. Rosengren. *Amer Surg* 119(6):620-624, 1970.

he development of collateral hepatic circulation ollowing ligation of the hepatic artery at different levels (7 cases) or total dearterialization of he liver (3 cases) was studied in 10 patients who ere subjected to aortographies and selective angioraphies (Urografin as contrast medium) before and fter (from 15 to 240 days) the surgical procedure. ine patients had malignant hepatic tumors originaing from primary tumors in various locations, and he tenth had a hematoma in the lesser omentum. In 2 patients the left hepatic artery was not ligated, and angiographies for both cases, performed 120 days and 15 days after the ligation, were similar in appearance and collateral vessels from the left hepatic artery filled the branches of the right hepatic artery. In six cases both the right and the left hepatic arteries were filled with the contrast medium via the collaterals. The most rapidly developing manifestations of collateral circulation were networks of vessels from the pancreaticoduodenal arteries from the proximal part of the main hepatic artery, and from the intercostal arteries. Filling of the arterial hepatic tree was observed by aortography at 4 days after hepatic artery ligation. Complete dearterialization of the liver was attempted in one subject 60 days after ligation of the hepatic arteries. Arteriograms taken 15, 90 and 180 days after this procedure were similar and showed only slight filling of the hepatic arteries via much fewer collateral vessels.

5982 INCREASED IRON ABSORPTION IN HEMOCHROMATOSIS BEFORE AND AFTER PHLEBOTOMY THERAPY. *(E.)* Sargent, T. W. (Donner Lab., Lawrence Radiat. Lab., U. California, Berkeley), H. Saito and H. S. Winchell. *Lawrence Radiat Lab Semiann Rep Biol Med* [UCRL 19420]:30-39, 1969.

Serial iron absorption studies in 8 patients with endogenous hemochromatosis were performed before, during, and after phlebotomy therapy, the results of which were related to the state of erythropoiesis and iron stores at the time of each study. In normal subjects (26), the fraction of iron absorbed from a normally administered dose varies directly with the reticulocyte count (correlation coefficient: 0.77). In iron deficiency anemia (plasma iron concentration > 70 μg %), absorption of iron was increased disproportionate to the reticulocyte count; when 2 such patients received sufficient iron (i.v.) to abnormally elevate the serum iron concentration, iron absorption was decreased disproportionately to the reticulocyte count despite only a mild change in the degree of anemia. In the 8 hemochromatotic subjects, when the plasma iron concentration was elevated (> 170 μg %) and the absorption test was given prior to phlebotomy, iron absorption was within the normal range with regard to reticulocyte count in 6 of 8 cases; in the other 2, one case was above and one below this range. When iron stores had been depleted and the plasma iron concentration was below normal (but in the absence of significant anemia), iron absorption was always above the normal range, as occurs in nonhemochromatotic patients with iron deficiency. When depleted patients were tested 2 months or more after their last phlebotomy, at a time when they were normochromic and normocytic and the plasma iron concentration was within normal limits, the iron absorption with regard to reticulocyte count was above the normal range in 8 of 8 patients. Patients with hemochromatosis appear to have a congenital defect which permits excessive absorption of iron from a diet containing normal amounts of this element.

5983 SUBCELLULAR LOCALIZATION OF *SALMONELLA ENTERITIDIS* ENDOTOXIN IN LIVER AND SPLEEN OF MICE AND RATS. *(E.)* Willerson, J.T. (Natl. Inst. Hlth., Bethesda, Md.), R.L. Trelstad, T. Pincus, S.B. Levy and S.M. Wolff. *Infect Immun* 1(5):440-445, 1970.

Cellular and subcellular localization of ^{14}C-labeled *Salmonella Enteritidis* endotoxin was characterized in liver and spleen fractions from Swiss mice and Sprague-Dawley rats by scintillography and autoradiography. ^{14}C-endotoxin was found predominantly in nuclear and mitochondrial subcellular fraction of both liver and spleen in both animals, 3.5 hr and 3 days after i.v. administration. The amounts of radioactivity recovered from both organs in mice and rats 3 days after endotoxin administration was 30-50% of counts in same fractions 3.5 hr after endotoxin administration. Hot phenol extracted 20-40% of labeled material from nuclear and mitochondrial fraction and of the recovered radioactivity, 10-20% was present in liver mitochondrial fraction as high molecular weight, biologically active material (apparent grossly intact endotoxin, possibly bound to protein). Material extracted by phenol from liver mitochondrial fractions of pretreated and previously untreated rats and mice showed pyrogenic activity compared to no activity from control subcellular fraction. Autoradiographic studies demonstrated nuclear and cytoplasmic labeling in the liver and spleen cells. Apparent resistance of rats (compared to mice) to experimental induction of amyloidosis does not appear to be based on difference in subcellular localization of endotoxin within reticuloendothelial system.

5984 CLINICAL TRIAL ON A NEW COMBINATION OF HEPATOPROTECTING AGENTS. *(E.)* Barlattani, M. (Dept. Med. U. Rome, Italy). *Arzneimittelforschung* 20(4):560-565, 1970.

Clinical trials on a new combination of hepatoprotecting drugs (extractive sulfonating polysaccharide, rutin, lipocaic factor, inositol, dehydrocholic acid) were performed in 25 patients suffering from liver diseases. Administration of 6 dragées daily, in 3 divided doses before meals, lasted 30 days; laboratory tests were performed at beginning of treatment and after 15 and 30 days. Laboratory tests were normal in most instances; however, total bilirubinemia (at a higher rate than 1 mg % in 76% of patients) was normalized in 24% of patients at 15 days, and in 44% of the patients after 30 days. Urobilinuria, present in 56% of patients, gradually returned to normal, decreasing to 52% after 15 days and to 20% after 30 days (20% of patients showing intense urobilinuria before treatment presented slight effects at 15 days). Cholalemia, present in 20% of patients at the start of the study, dropped 4% and 8% on days 15 and 30, resp. Glycemia, which exceeded normal values in 52% of patients at the beginning of the study showed 32% and 44% normalization after 15 and 30 days, resp. Cholesterolemia was higher than normal in 56% and lower in 16% of patients at the beginning of the study; after 15 days, values above normal showed 20% normalization, while values below normal showed a 4% elevation. Serum colloid tests demonstrated that levels were not normalized after 30 days of treatment. Lack of normalization seemingly is due to changes in other tissues or systems; the mentioned condition causes colloid alteration owing to lack of correction normally exerted by healthy liver.

5985 THE DONOR IN HUMAN LIVER TRANSPLANTATION. *(E.)* Fortner, J. G. (Mem. Hosp. Cancer Allied Dis., New York, N. Y.), M. H. Shiu, W. S. Howland and E. J. Beattie, Jr. *Surg Gynec Obstet* 130(6):988-994, 1970.

While extensive study of a donor candidate for human liver transplantation is usually not feasible, the clinical history of the donor, the gross physical appearance of the organ and the results of histologica and biochemical studies are important criteria in judging suitability. In 6 consecutive human liver homographs, the donors studied were persons who had fatal brain damage, intact livers, and sustainable blood pressure. A past medical history of encephalitis precluded the use of 2 donor candidates, as did extreme age (99 yr) and the presence or history of cancer. Roentgenologic studies and selective celiac angiography were used to evaluate liver status and to delineate the pattern of the hepatic arterial supply. Bacteriologic studies were obtained in all patients and donors prior to transplantation. In matching donor and recipient, liver size (not age, sex, or race) was the determining factor. Red blood cell compatibility between donor and recipient was of great importance and human leukocyte antigen typi was based on leukagglutinin and cytotoxicity tests. The donor was maintained in a normotensive state whi mobilization of the donor's liver was carried out. The dissection was made difficult whenever the hepat arterial pulsation ceased prematurely, and this difficulty was compounded by the location of the celiac ganglion at the base of the hepatic artery and the celiac axis. Perfusion of the liver with a modifie low molecular weight Dextran and balanced salt solution was done through the portal vein and hepatic artery, until the liver was ready to receive anastomosing blood vessel grafts from the recipient patien The transplanted livers functioned well, as indicate by lack of hemorrhagic diathesis after transplantation, prompt return of consciousness after anesthesi and continued viability of the patients.

986 TYPE III GLYCOGENOSIS: A BIOCHEMICAL AND ELECTRON MICROSCOPIC STUDY. *(E.)* Garancis,
. C. (Marquette Med. Sch., Milwaukee, Wisc.), R. R.
anares, T. A. Good and J. F. Kuzma. *Lab Invest*
2(5):468-477, 1970.

Electron microscopic and biochemical analysis of
liver, muscle, and leukocytes were performed on
iopsies from 2 infant girls (8 months and 3 yr)
ith type III glycogenosis. The basophils, neutro-
hils, and eosinophils from the peripheral blood
ontained excessive glycogen deposits; normal levels
ere found in the lymphocytes and monocytes. Ele-
ated glycogen content and a deficiency of amylo-1,
-glucosidase were found in liver, skeletal muscle
nd leukocytes. Hepatic parenchymal cells typically
ontained large pools of monoparticulate glycogen
dmixed with glycogen rosettes. Small aggregates
ere seen in the ground substance, fibrocytes, and
upffer cells and skeletal muscle contained excessive
mounts of monoparticulate glycogen between myo-
ibrils; however, there was no evidence of fiber
egeneration. In the more severely affected muscle
ibers, large aggregates of glycogen appeared just
eneath the sarcolemma. Deposits were also seen in
he ground substance,endothelium, and pericytes. The
ound to ovoid β-particle subunits of liver and muscle
lycogen measured approximately 45 to 50 and 35 to 50
, resp., and their morphological appearance was in-
istinguishable from glycogen subunits of control
pecimens.

987 HISTOCHEMICAL STUDY ON CARBOHYDRATE METABOLISM OF ASCITES HEPATOMA AH 13 AND AH 39
ELLS. *(E.)* Yano, Y. (Kumamoto U. Sch. Med., Japan).
ta Histochem Cytochem 2(4):147-163, 1969.

ifferences in the metabolic pattern between rat
scites hepatomas AH 13 and AH 39 were investigated
sing histochemical observations of enzymes in carbo-
drate metabolism in tumor cells *in vivo* and *in*
tro. An anaerobic glycolytic pathway was demon-
rated in the AH 13 cells which showed intense
stochemical reactions for glucosephosphate isom-
ase, aldolase, and lactate dehydrogenase. Glycogen
tabolism was also demonstrated with predominant
ycogenesis showing a histochemical reaction for
PG-glycogen glucosyltransferase and with a less
edominant glycogenolysis showing an intense reac-
on for phosphorylase. Phosphoglucomutase was also
monstrated in the AH 13 cells and also glycogen
posits in the tumor cell bodies. AH 39 cells exhib-
ed a similar anaerobic pathway but it was not
companied by the same glycogen metabolism. The
lls demonstrated poor glycogenesis and a moderately
ak reaction for phosphorylase and phosphoglucomutase
d there were no glycogen deposits in the cell bodies
cept in the later stage after inoculation. Long-
rm cultivation of both strains produced changes in
e enzymatic properties of the tumor cells. In the
13 cells glycogen storage was increased and accom-
nied by an increase in phosphoglucomutase activity
d decreases in glucosephosphate isomerase and phos-
orylase activities. In the AH 39 cells glycogen
orage increased in spite of increasing phosphor-
ase activity. Glycogenesis appeared to be inten-
fied by the cultivation and by the reduction of
ucosephosphate isomerase activity.

5988 CROSS TRANSFUSION OF EFFLUENT BLOOD FROM ISCHEMIC LIVER AND INTESTINES. *(E.)* Rangel, D. M. (U. California Los Angeles, Sch. Med.), A. Dinbar, G. H. Stevens, J. E. Byfield and E. W. Fonkalsrud. *Surg Gynec Obstet* 130(6):1015-1024, 1970.

Studies were made in 48 dogs of the effects of cross transfusion of venous effluent blood following 2 hr of hepatic or intestinal ischemia from one dog into a second dog. The biochemical and hemodynamic responses of the recipient dog were studied. No hypotension occurred when effluent blood from a nonischemic liver was cross-transfused into the femoral vein of the recipient dog. A decrease in blood pressure of more than 50 mm Hg occurred in 4 of the 5 dogs when effluent blood was cross-transfused from a liver subjected to 2 hr of hepatic inflow stasis. The hypotension occurred when 150-250 ml of blood had been cross-transfused and lasted for 22 to 65 min. Central venous pressure decreased to zero during severe periods of hypotension. When hepatic effluent blood (after 2 hr of hepatic ischemia) was cross-transfused through the pancreatic vein at 20 cc/min, severe hypotension occurred in one of 5 dogs, moderate hypotension developed in 3 dogs, and in one dog there was no decrease in blood pressure. Severe hypotension developed in 4 of 5 dogs receiving portal venous blood from donor dogs in which the superior mesenteric artery had been occluded for 2 hr and subsequently revascularized; there was no change in central venous or portal pressure in this group. Hypotension did not occur in any of the 5 recipient dogs receiving portal venous blood from donor dogs in which the portal vein had been occluded above the origin of the pancreatic vein for 60 min. Elevations of the levels of SGOT (from 28 ± 14 to 212 ± 41 Sigma-Frankel U), SGPT (30 ± 11 to 198 ± 81 Sigma-Frankel U), alkaline phosphatase (18 ± 8 to 26 ± 9 IU), and lactic dehydrogenase (134 ± 89 to 990 ± 381 Berger-Broida U) occurred only in the venous effluent blood from the postischemic livers. Hyperkalemia and metabolic acidosis occurred commonly in venous effluent blood after hepatic or intestinal ischemia, but neither appeared to be causative of systemic hypotension.

5989 EFFECTS OF PHENETHYL ALCOHOL ON TRANSPORT REACTIONS, NUCLEOTIDE POOLS AND MACROMOLECULAR SYNTHESIS IN NOVIKOFF RAT HEPATOMA CELLS GROWING IN SUSPENSION CULTURE. *(E.)* Plagemann, P. G. W. (Med. Sch., U. Minnesota, Minneapolis). *J Cell Physiol* 75(3):315-327, 1970.

The effects of phenethyl alcohol (PEA) on metabolic processes (transport reactions, nucleotide pools and macromolecular synthesis) were studied in Novikoff rat hepatoma cells growing in suspension culture. Incorporation of ^{3}H-amino acids or ^{3}H-thymidine into total cell and acid-insoluble material was inhibited by the different concentrations (8, 16 and 24 mM) of PEA (approximately 30%, 50% and 57% resp. for the amino acids and approximately 45%, 70% and 90% resp. for thymidine). Pulse labeling of RNA with ^{3}H-uridine in the presence of the varying concentrations of PEA indicated no effect on incorporation of uridine nucleotides although there was accelerated loss of nucleotides from the cells, but pulse labeling of DNA with ^{3}H-thymidine indicated a decrease of incorporation into the acid-insoluble material (1700 cpm/0.5 ml without PEA decreased stepwise with PEA to 400 cpm/0.5 ml at 24 mM). Sedimentation profiles of RNA revealed a steady decrease of ^{3}H-uridine incorporation into 29S and 18S rRNA with increasing PEA (35, 27 and 13% of total ^{3}H and 7, 4 and 2% of total ^{3}H in the 29S and 18S rRNA resp.) with no change in 4-5S RNA labeling indicating the PEA inhibits the processing of ribosomal precursor RNA to rRNA, while the loss of labeling in the 29S and 18S rRNA suggests a degradation of the rRNA since tRNA labeling remained constant whether PEA was added or not. All the effects of PEA may result from an interaction with cellular membranes

5990 CHEMICAL PATHOLOGY OF ACUTE AMINO ACID DEFICIENCIES: STUDIES ON HEPATIC ENZYMES IN RATS FORCE-FED A THREONINE-DEVOID DIET. *(E.)*

Sidransky, H. (U. Pittsburgh Sch. Med., Pa.), D. S. Wagle, M. Bongiorno and E. Verney, *J Nutr* 100(6):678-684, 1970.

Male and female Sprague-Dawley rats, (most of them weighing 75 - 85 g) force-fed a threonine-devoid diet for 3 days, exhibited a significant increase in glucose-6-phosphate dehydrogenase activity and significant decrease in activities of phosphorylase, urocanase and the hydroxylating enzyme compared with animals fed a complete diet. The activities of glycogen synthetase, malic enzyme, threonine dehydrase, arginase, histidase and acid phosphatase showed no significant differences between the experimental and control animals. In 3 experiments where hepatic arginase activity was determined, there was an 88% average increase in excretion of urine urea in those animals receiving the threonine-devoid diet.

5991 LIPID PEROXIDATIVE PROCESSES IN LIVER DAMAGE AND STEATOSIS. *(E.)*

Placer, Z. (Inst. Human Nutr., Prague, Czechoslovakia), M. Vidlakova and L. Kuzela. *Rev Czechoslovak Med* 16(1):29-39, 1970.

The relation between liver peroxidation and cumulation of lipids in liver tissue and whether stimuli exist for lipid peroxidation *in vivo* was studied in white mice (23-27 g), albino rats (180-240 g) and in human patients with hepatic lesions. Estimation of conjugated dienes and lipid content was made following selected physiological conditioning: starvation, liver regeneration and fat load consisting of olive oil (8 ml/kg, intragastrically) and after administration of 50% ethanol (5 ml/kg, intragastrically) and carbon tetrachloride (2 ml/kg, i.p.). Olive oil increased depot lipid from 0.60 μEq of conjugated dienes at 1 hr to 0.83 μEq at 3 hr post administration; ethanol (0.63 to 1.14 μEq) and CCl_4 (0.56 to 1.00 μEq) also increased depot lipid. Starvation and regeneration enhanced liver peroxidation with a simultaneous increase in liver lipid concentration. Following fat load, the increase of depot fat is believed to induce enhanced liver peroxidation, whereas hepatotoxic agents and pathological states impair lipid metabolism of the cell which gives rise to lipid cumulation.

5992 LIVER DAMAGE AND LIPID METABOLISM: II. BIOSYNTHESIS OF CHOLESTEROL, PHOSPHOLIPIDS AND GLYCERIDES IN THE LIVER IN EXPERIMENTAL CHOLESTASIS IN RATS. *(Ger.)*

Kattermann, R. (Med. Clin. U. Gottingen, Germany) and W. V. Reimold. *Acta Hepatosplen* 17(2): 75-84, 1970.

Biochemical (cholesterol, glyceride, phosphatide) determinations were made in the liver of Wistar rats with experimentally-induced cholestasis. The incorporation of 2-^{14}C-acetate into the lipid fractions was increased compared with the controls (radioactivity total lipids 90.6, cholesterol 25.3, glycerides 25.4, phosphatides 35.2; specific activity 2.00, 11.00, 3.65, 1.29, resp.) at all stages of the investigation (24, 48, 72, 144 hr). Cholesterol radioactivity (393.4) and specific activity (168) increase particularly at 72 hr, and parallel with the accelerated synthesis, net increase occurred in liver cholesterol concentration (2.7 to 3.5 mg). The phosphatide and glyceride concentrations decreased and remained unchanged, during cholestasis. An increase of synthetic processes seemingly occurs in the liver in experimental cholestasis.

5993 THE INFLUENCE OF ATP-Spofa ON THE FATTY INFILTRATION OF THE LIVER DUE TO CARDIOPATHOGENIC DIET. *(E.)*

Lazarova, Z. (Fac. Pharm., Komensky U. Bratislava, Czechoslovakia) and F. Inczinger. *Folia Morph* 18(1):21-24, 1970

Histological and histochemical changes in the liver parenchyma of 30 rats, (3 groups receiving (i) cardiopathogenic diet, (ii) cardiopathogenic diet and ATP (0.12 mg/200 g), (iii) normal control diet), kept on a cardiopathogenic diet in order to induce an experimental cardiomyofibrosis, were studied in order to explain the metabolic changes of the liver lipid. A marked fatty infiltration of the liver was found in the majority of cases (8 rats) in the group fed on a cardiopathogenic diet. The fat was accumulated mainly in the superficial area of the cell plasma in small droplets and deposited to the extent of 1/3 of the lobulus around the vena centralis. An ATP supplemented diet led to a histologically normal liver in 9 cases. ATP appears to have a favorable influence on the metabolism of liver cells where it inhibits the fatty infiltration of the liver.

5994 EFFECT OF BASIC CUPRIC ACETATE ON THE BIOCHEMICAL CHANGES IN THE LIVER OF THE RAT FED CARCINOGENIC AMINOAZO DYE: II. ACTIVITY AND ISOZYME PATTERN OF LACTATE DEHYDROGENASE. *(E.)*

Yamane, Y. (Fac. Pharm. Sci., U. Chiba, Japan), K. Sakai, M. Hayashi, M. Matsuzaki and A. Hanaki. *Chem Pharm Bull* 18(5):1050-1052, 1970.

Four groups of Wistar rats (40 females) were used t study changes in the activity and isozyme pattern of LDH in the liver. Group I received .09% 4-dimethylaminoazobenzene, Group II received .5% basic cupric acetate hexahydrate, Group III received the above compounds combined in a maize diet, and Group IV received a maize diet alone as control). Analysis was made by liver homogenate preparation and supernatant enzyme assay. Groups II and III maintained a fairly high (> 10 x 10^4 units) level of LDH activity during the experiment. Group I, while showing a comparable level to the control initially, dropped (6 x 10^4 units) after 6 weeks. Since LDH activity did not decrease in the group of rats fed cupric acetate with the dyes, a role of copper may be to recover LDH activity that was reduced by the administration of 4-dimethylaminoazobenzene. The main component of LDH isozyme in the rat liver was LDH$_5$ fraction. When 2% homogenate was applied to the electrophoretic separation, only LDH$_5$ component was detected; with 10% homogenate, LDH$_4$ as well as LDH$_5$ appeared. The administration of cupric acetate with and without dimethylaminoazobenzene did not change the isozyme pattern observed in the control, while dimethylaminozaobenzene alone affected the isozyme pattern. Hence, the administration of cupric acetate repressed the change of the LDH isozyme pattern in the course of carcinogenesis in the liver of the rats fed dimethylaminoazobenzene. LDH$_3$ fraction was newly found in Group I after 11 weeks from the start; its appearance may be related to the induction of hepatic carcinoma by the feeding of dimethylaminoazobenzene.

5995 VARIATIONS IN AMINO ACIDS DURING 20 ACUTE LIVER ATROPHIES. *(Fr.)* Lemonnier, F. (Hosp. St. Antoine, Paris, France), P. Hadchouel, C. Charpentier and J. Caroli. *Rev Medicochir Mal Foie* 5(1):13-22, 1970.

Changes in blood and urine amino acid levels in acute hepatitis were studied in 20 patients (6 with subacute viral hepatitis, 13 with acute viral hepatitis, with toxic hepatitis) using electrochromatography nd the Beckman 120B autoanalyzer. In 18 patients rinary amino acids were increased; in 80 to 95% of he cases glutamic acid, lysine, histidine, tyrosine, thanolamine and glutamine were increased 5 to 8 imes their normal values. Alpha-alanine, methionine, erine and glycine were increased 3 to 4 times normal n 50 to 65% of the cases, and proline, valine and eucine-isoleucine were increased in 5 to 20% of the ases. Urinary phenolic acid levels were increased n 65 to 85% of the patients. Methionine, tyrosine nd ethanolamine levels in the blood were increased n 60 to 85% of the cases.

996 NUTRITIONAL REQUIREMENTS OF INFANTS AND CHILDREN WITH LIVER DISEASE. *(E.)* ilverberg, M. (Albert Einstein Coll. Med., Bronx, . Y.) and M. Davidson. *Amer J Clin Nutr* 23(5):604-613, 970.

997 NEONATAL JAUNDICE SECONDARY TO ENDOGENOUS MATERNAL STEROIDS (BREAST MILK JAUNDICE). *(E.)* Wilburn, R. L. (U. Nebraska Coll. Med.). *Nebraska Med J* 55(6):364-368, 1970.

5998 PORTAL HYPERTENSION CAUSED BY PARTIAL NODULAR TRANSFORMATION OF THE LIVER. *(E.)* Classen, M. (Dept. Med., U. Erlangen Nuremberg, Germany), K. Elster, H. J. Pesch and L. Demling. *Gut* 11(3):245-249, 1970.

5999 ALCOHOL AND CARBOHYDRATE METABOLISM: 1. EFFECTS OF ALCOHOL, OF SUCROSE, AND OF THEIR COMBINATION ON THE HEPATIC ENZYMES OF GLYCOGENESIS AND OF GLYCOGENOLYSIS IN THE RAT AFTER PARTIAL HEPATECTOMY. *(Fr.)* Hakim, J. (Hosp. Beaujon, Clichy, France), A. Cornillot-Clement, P. Boivin and R. Fauvert. *Path Biol* 18(3-4):163-173, 1970.

6000 HEMOCHROMATOSIS: A PERLUSTRATION. *(E.)* MacDonald, R. A. (Boston U. Sch. Med., Mass.). *Amer J Clin Nutr* 23(5):592-603, 1970.

6001 CYTOLYSIS SYNDROME IN CHRONIC DISEASES OF THE LIVER IN CHILDREN. *(Rus.)* Mazurin, A. V. (N.I. Pirogov 2nd Med. Inst., Moscow, U.S.S.R.), A. M. Zaprudnov and A. R. Kolokolov. *Pediatriia* 49(4):60-65, 1970.

6002 ESSENTIAL MICRONUTRIENT ELEMENTS: BIOCHEMISTRY AND CHANGES IN LIVER DISORDERS. *(E.)* Prasad, A. S. (Wayne St. U. Sch. Med., Detroit, Mich.), D. Oberleas and G. Rajasekaran. *Amer J Clin Nutr* 23(5):581-591, 1970.

6003 SEVERE JAUNDICE IN ABO-INCOMPATIBILITY AND DISTURBANCE OF BILIRUBIN COUPLING. *(Ger.)* Stur, O. (U. Child. Clin. Vienna, Austria). *Wien Med Wschr* 120(22):400-401, 1970.

6004 ABSENCE OF THE ENHANCED SYNTHESIS OF HIPPURIC ACID IN PRIMARY HEPATOMA INDUCED BY AZO-DYE FEEDING. *(E.)* Sato, S. (Res. Inst. Tuberc. Leprosy, Cancer, Tohoku U., Sendai, Japan). *Sci Rep Inst Tohoku Univ* 16(3-4):82-90, 1969.

6005 TESTING WITH THE LIVER-GALLBLADDER THERAPEUTIC BILIFUGE "PLAN". *(Ger.)* Braun, H. (Munich, Germany). *Z Ther* 8(3):149-155, 1970.

6006 ANATOMY AND TOPOGRAPHY OF SURGICAL RESTORATION OF LIVER LYMPH OUTFLOW VESSELS AFTER ORTHOTOPIC TRANSPLANTATION IN DOGS. *(Rus.)* Kirpatovsky, I. D. (Moscow Med. Inst. Stomatology, USSR) and V. P. Volodko. *Eksp Khir Anest* 15(2):36-41, 1970.

6007 HETEROTOPIC GRAFT OF A BABOON LIVER IN A PATIENT WITH FULMINATING HEPATITIS. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), Y. Chapuis and J. P. Lenriot. *Chirurgia* 95(3):249-251, 1970.

6008 THE THERAPY OF HEPATIC COMA. *(Ger.)* Rettenmaier, G. (Med. U. Clin. Erlangen-Nuremberg, Germany). *Therapiewoche* 20(11):432-437, 1970.

6009 RESECTION OF THE RIGHT HEPATIC LOBE FOR TUMOR. *(Rus.)* Galeev, M. A. (Bashkirsk Med. Inst., USSR). *Vestn Khir* 104(1):121-122, 1970.

6010 THE LIVER AND BILE DUCTS IN SYSTEMIC SCLERODERMA. *(Rus.)* Aprosina, Z. G. (Inst. Rheumatic Dis., Acad. Med. Sci., Moscow, USSR), N. G. Guseva, M. A. Potekaev and N. N. Gritsman. *Klin Med* 48(1):119-126, 1970.

6011 CLINICAL FORMS AND MANAGEMENT OF ACUTE HEPATIC INSUFFICIENCY. *(Rus.)* Galperin, E. I. (N. V. Sklifosovski Inst., Moscow, USSR), P. A. Ivanov, E. A. Neklyudova, B. S. Ovnatanov and I. V. Yarema. *Khirurgiia* 46(2):40-48, 1970.

6012 50 HETEROTOPIC TRANSPLANATATIONS OF THE LIVER IN PIGS: ANATOMICAL AND PHYSIOLOGICAL TECHNIQUE AND RESULTS. *(Fr.)* Pouyet, M. (Red Cross Hosp., Lyon, France), P. Berard, Y. Ruckebusch, G. Badia, J. Baulieux, L. Cret, J. R. Tapissier, M. L. Grivel, N. Coffy and J. L. Lerat. *Ann Chir* 24(5-6):265-282, 1970.

6013 THE AMINOACID CONSTITUTION OF BLOOD GAMMA GLOBULIN IN PATIENTS WITH LIVER DISEASES. *(Rus.)* Bala, Yu. M. (Voronezh Med. Inst., USSR) and V. N. Nemykh. *Sovet Med* 33(3):15-18, 1970.

6014 METABOLICALLY ACTIVE LIVER METASTASES TREATED BY 5-FLUOROURACIL HEPATIC ARTERY INFUSION. *(E.)* Hoaglin, L. L., Jr. (Diag. Clin. Houston, Tex.), E. Earle and D. Butts. *Cancer* 25(5):1170-1173, 1970.

6015 CALCIFIED CAVERNOUS HEMANGIOMA OF THE LIVER: A CASE REPORT. *(E.)* Bhatt, J. (S. M. S. Med. Coll. Hosp., Jaipur, India), J. P. Udawat and M. L. Sharma. *Int Surg* 54(1):24-27, 1970.

6016 IDIOPATHIC, RECURRENT CHOLESTASIS. *(E.)* Ruymann, F. B. (Walter Reed Army Inst. Res., Washington, D.C.), A. Takeuchi and H. W. Boyce. *Pediatrics* 45(5):812-820, 1970.

6017 THE ROLE OF RADIATION THERAPY IN THE MANAGEMENT OF HEMANGIOMAS OF THE LIVER. *(E.)* Park, W. C. (New York Med. Coll., New York) and R. Phillips. *JAMA* 212(9):1496-1498, 1970.

6018 REYE'S SYNDROME TREATED BY PERITONEAL DIALYSIS. *(E.)* Pross, D. C. (Duke U. Med. Ctr., Durham, N. C.), W. D. Bradford, R. P. Krueger. *Pediatrics* 45(5):845-847, 1970.

6019 WILSON'S DISEASE. *(Fr.)* Quinton, A. (no affil) and J. Bancons. *France Med* 33(2): 79-81, 1970.

6020 RECONSTITUTION OF THE COMMON BILE-DUCT BY HEPATICO-JEJUNO-DUODENOPLASTY. *(Fr.)* Moulle, P. (no affil). *Presse Med* 78(21):975, 1970.

6021 THE PORPHYRIAS. *(Fr.)* Leclerc, M. (Hosp. Broussais, Paris, France). *Acquis Med Recent* 83-104, 1970.

6022 CLINICAL FEATURES AND DIFFERENTIAL DIAGNOSIS OF HEPATOCELLULAR FAILURE. *(Jap.)* Ichida, F. (Niigata U. Sch. Med., Japan). *Saishin Igaku* 25(2):384-393, 1970.

6023 SURGICAL TREATMENT OF HEPATIC FAILURE. *(Jap.)* Murakami, F. (Osaka U. Sch. Med., Japan), J. Okamura and T. Ooshiro. *Saishin Igaku* 25(2):393-402, 1970.

6024 ENCEPHALOPATHY AND HEPATIC INSUFFICIENCY. *(Jap.)* Harada, T. (Tokyo U. Sch. Med., Japan), T. Motoki and K. Kamishima. *Saishin Igaku* 25(2):378-383, 1970.

6025 ISOLATION OF AN HYDROXYLATED PORPHYRIN FROM URINE AND FECES OF PATIENTS WITH CUTANEOUS HEPATIC PORPHYRIA. *(E.)* Elder, G. H. (King's Coll. Hosp. Med. Sch., London, England) and J. R. Chapman. *Biochim Biophys Acta* 208(3):535-537, 1970.

6026 SOME OBSERVATIONS ON THE EFFECTS OF TREATMEN WITH LACTULOSE ON PATIENTS WITH CHRONIC HEPATIC ENCEPHALOPATHY. *(E.)* Zeegen, R. (St. Bartholomew' Hosp., London, England), J. E. Drinkwater, J. C. B. Fenton, A. Vince and A. M. Dawson. *Quart J Med* 39(154 245-263, 1970.

6027 DISEASES OF THE LIVER IN AN AFRICAN HOSPITAL *(E.)* Roberts, C. J. (Enkeldoorn, Rhodesia). *Cent Afr J Med* 16(3):63-64, 1970.

6028 SURGICAL TREATMENT OF PORTAL HYPERTENSION: REVIEW OF HENRY FORD HOSPITAL EXPERIENCE. *(E.)* Elliott, J. P., Jr. (Henry Ford Hosp., Detroit, Mich.), K. H. Wong and R. F. Smith. *Henry Ford Hosp Med J* 18(2):121-142, 1970.

6029 PATHOGENESIS OF HEPATIC ENCEPHALOPATHY: WITH SPECIAL REFERENCE TO THE ROLE OF AMMONIA. *(E.)* Schenker, S. (U. Texas Southwestern Med. Sch., Dallas) and C. O. Walker. *Amer J Clin Nutr* 23(5):619-632, 1970.

030 DERMOID CYST IN THE LIVER. *(E.)* Nam,
. H. (Dist. Hosp., Kuala Belait, Brunei). *Radio-*
raphy 36(426):148-150, 1970.

031 SURGICAL RESECTION FOR PRIMARY CARCINOMA OF THE LIVER. *(E.)* Cohen, Y. (Gen. Hosp.
ingapore) and T. N. Chuan. *Singapore Med J* 11(1):
7-19, 1970.

032 OPERATIVE MANAGEMENT OF CALCULI IN THE HEPATIC DUCTS. *(E.)* Shore, J. M. (Cedars-
inai Med. Ctr., Los Angeles, Calif.) and G. Berci.
mer J Surg 119(6):625-631, 1970.

033 ICTERUS CAUSED BY CONGENITAL MALFORMATIONS OF THE BILIARY DUCTS. *(Dut.)* Adriaenssens,
. (St. Augustin Clin., Antwerp, Netherlands).
Gastroent 12(5):463-467, 1969.

34 HEPATOTOXICITY. *(Dut.)* De Groote, J. (Acad. Hosp. St. Rafael, Louvain, Belgium).
Geneesk 26(6):304-315, 1970.

35 HEPATORENAL SYNDROME AND KIDNEY TRANSPLANT. *(Dut.)* Bosch, E. (no affil). *Nederl T*
neesk 114(9):384, 1970.

36 SELECTION OF THE METHOD AND TECHNIQUE OF RESECTION OF THE LIVER. *(Rus.)* Shapkin,
. S. (Vladivostok Med. Inst., USSR) and V. A.
uravlev. *Vestn Khir* 104(4):59-63, 1970.

37 RUPTURE OF THE LIVER IN A NEWBORN WITH A FAVORABLE OUTCOME. *(Rus.)* Fedotov, N. P.
ity Children Hosp., Krivoi Rog, USSR). *Vestn*
ir 104(4):108-109, 1970.

38 RESECTION OF THE LIVER AND REMOVAL OF A FIBROUS CAPSULE WITH THE USE OF AN OCTO-
-FORM SUTURE AND LARGE CLIPS. *(Rus.)* Telkov,
. A. (Semipalatinsk Med. Inst., USSR). *Vestn Khir*
4(4):55-59, 1970.

39 DRUG INFUSION THROUGH THE UMBILICAL VEIN IN THE TREATMENT OF HEPATIC ABSCESSES.
us.) Ostroverkhov, G. E. (Kalinin Med. Inst.,
SR), A. D. Nikolsky, I. A. Kotov and Z. M.
rasheva. *Khirurgiia* 46(4):75-79, 1970.

40 LIVER FUNCTION IN DISEASES OF THE THYROID GLAND. *(Rus.)* Klyachko, V. R. (Acad. Med.
i., Moscow, USSR) and A. Kh. Mirkhodzhaev. *Med*
diol 15(3):35-38, 1970.

41 FUNCTIONAL DISORDERS OF THE LIVER IN CHRONIC TONSILLITIS. *(Rus.)* Pliuyko, M. E.
hernigov, USSR), A. G. Nosenko and V. Kh. Edomakha.
ach Delo (3):47-49, 1970.

6042 LIVER INVOLVEMENT IN RENAL INSUFFICIENCY. *(Ger.)* Schimmelpfennig, W. (2nd Med. Clin., U. Hamburg, Germany), R. Schimmelpfennig, D. Kranz, H. W. Buder and K. Buchali. *Deutsch Gesundh* 25(16): 723-726, 1970.

6043 CORRELATIONS BETWEEN ACETYLATION RATES OF SULFATHIAZOLE AND LIVER FUNCTIONS. *(Jap.)* Mitsuno, Y. (Sch. Med., Keio U., Japan). *J Keio Med Soc* 47(2):131-142, 1970.

6044 CLINICAL TRIALS IN LIVER PATHOLOGY: A SODIUM LACKING COMBINATION OF MALIC ACID AND ARGININE. *(Fr.)* Cachin, M. (No affil). *Vie Med* 51(15):2387-2390, 1970.

6045 HEMOCHROMATOSIS. *(Fr.)* Quinton, A. (no affil) and M. Le Bras. *France Med* 33(2): 73-78, 1970.

6046 THE INFLUX OF NADH-CYTOCHROME REDUCTASE INTO THE BLOOD SERUM OF WHITE MICE WITH CARBON TETRACHLORIDE DAMAGE TO THE LIVER. *(Jap.)* Koi, M. (Wakayama Prefect. U. Med., Japan). *Folia Pharmacol Jap* 65(6):592-603, 1969.

6047 NUTRIENT DEMANDS IMPOSED BY SURGERY OF THE LIVER. *(E.)* McDermott, W. V. (Boston City Hosp., Mass.) and F. W. Ackroyd. *Amer J Clin Nutr* 23(5):652-656, 1970.

6048 PRIMARY CANCER OF THE LIVER. *(Rus.)* Makarov, F. D. (Kaliningrad, USSR), A. P. Semyonov, I. D. Maximenko and O. I. Maximenko. *Vrach Delo* (3):9-12, 1970.

6049 CLOSED LIVER TRAUMA: REPORT OF 26 SURGICAL CASES. *(It.)* Preziosi, M. (General Hosp. Rome, Italy), C. Imbesi and G. Tagliaferri. *Osp Ital Chir* 21(4):279-298, 1969.

6050 AUSTRALIA ANTIGEN IN PATIENTS WITH ACUTE AND CHRONIC LIVER DISEASE. *(Nor.)* Nielsen, P. E. (Copenhagen Commun. Hosp., Denmark), J. O. Nielsen and O. Dietrichson. *Ugeskr Laeg* 132(19):875-879, 1970.

6051 ULTRASTRUCTURAL STUDY OF THE HEPATIC PARENCHYMA IN MUCOPOLYSACCHARIDOSIS. *(Fr.)* Berard-Badier, M. (Fac. Med., Marseilles, France), L. Adechy-Benkoel, A. Chamlian, D. Dubois-Gambarelli, P. Casanova and A. Mariani. *Path Biol* 18(3-4):117-128, 1970.

6052 TWENTY OBSERVATIONS OF LIVER TRAUMA. *(Fr.)* Rohner, A. (Surg. Clin. U. Geneva, Switzerland) and J. Fiala. *Helvetia Chir Acta* 37(1-2):143-148, 1970.

6053 THE EFFECT OF DIRECTED DEEP IRRADIATION OF THE LIVER ON DETOXICATION BY THE GLUCURONIC ACID PATHWAY IN THE RABBIT. *(Ger.)* Birzle, H. (Med. Clin. U. Frieburg, Germany), K. Beck and L. Nusselt. *Strahlentherapie* 139(3):347-353, 1970.

o P:Morph (5427)(5455)(5456)(5469)(5473)
o P:Secr:Hep (5563)(5567)(5569)(5594)
o P:Gen (5629)(5630)(5634)(5644)
o Diagproc (5646)(5647)(5651)(5657)(5659)(5660)
  (5661)(5667)(5668)(5670)(5673)(5675)(5676)
  (5677)(5685)(5686)(5692)(5698)(5702)(5719)
o D:Pancreas:Pancreat (5969)
o D:Livbil:A.V.Hep (6088)(6093)
o D:Livbil:Gallb (6136)(6138)
o D:Gen (6188)(6213)(6217)(6222)
o D:Gen:Parasit (6252)(6256)(6269)(6271)(6281)

LIVER AND BILIARY TRACT

Acute Nonviral Hepatitis and Hepatic Injury

6054 ULTRASTRUCTURAL CHANGES IN HEPATIC PARENCHYMA IN SPLENOMEGALY AND HYPOPROTHROMBINEMIA. *(Ger.)* Leuschner, U. (Med. Clin., Policlin., Wesfalischen Wilhelms U., Munster, Germany), G. Manitz and H. Themann. *Z Gastroent* 8(2):96-108, 1970.

Ultrastructural changes in hepatic parenchyma of 2 patients (female) with hypoprothrombinemia, splenomegaly and a prehepatic block were studied by electron microscopy. Clinical and light microscopic examination revealed no evidence of liver damage; however, mitochondrial swelling, loss of mitochondrial matrix, vesicular transformation and reduction of the endoplasmic reticulum, and glycogen loss were all demonstrated with the electron microscope. The malformed mitochondria were smaller than normal, though with normal paracrystilline enclosure. Ribosomes in the membranes of the endoplasmic reticulum were also decreased. Liver damage was probably a consequence of an altered portal circulation, although changes in the fine tissue may also be due to toxic or allergic damage by the enlarged spleen. The hypoprothrombinemia may result from intracellular disturbance in synthesis and is an early indication of liver damage.

6055 ATTEMPT TO ESTABLISH A PROGNOSIS BASED ON HISTOLOGY IN SEVERE ACUTE HEPATITIS. *(Fr.)* Scotto, J. (Hosp. St. Antoine, Paris, France), A. Lageron and J. Caroli. *Ann Anat Path* 15(1):105-114, 1970.

The amount of steatosis in liver biopsy specimens from 12 patients with severe acute hepatitis was measured by histochemical, histoenzymological, and ultrastructural methods to assess its possible prognostic value. In all cases there was an increase in alkaline phosphatase aminopeptidases, and in the negativity of phosphorylases of canalicular adenosine-triphosphates, glutamic dehydrogenase, monoamine oxidase and dihydroorotate dehydrogenase. Normal glycogen content (9 patients), steatosis (6 patients), increased biliary stasis (4 patients), and diminution or absence of pentose pathways (7 patients), of the Krebs cycle (9 patients) and of glucose-6-phosphatase (8 patients) were found. Anerobic glycolysis was preserved (7 patients) and a hiatus between nuclear and cytoplasmic RNA was found (5 patients). In 2 patients who had 2 or 3 biopsies taken, there was considerable steatosis which led to morphological changes which were interpreted as cell regeneration and confirmed by electron microscopy. General nucleolar hypertrophy with the cytoplasm as the focus of degenerative lesions was observed. Steatosis is seemingly related to cell regeneration in the liver.

6056 DRUG METABOLISM IN ETHIONINE INDUCED FATTY LIVER. *(E.)* Ariyoshi, T. (Fac. Pharm. Sci. Nagasaki, Japan) and E. Takabatake. *Life Sci* 9(7):37 377, 1970.

The metabolic effects of ethionine on hepatic lipids, cytochrome P_{450} and b_5, and drug-metabolizing enzyme activities were compared with the effects of ethanol or phenobarbital in female Wistar rats. Ethionine in 0.9% saline (25 mg/ml) was injected i.p. into rats in three divided doses within 2 hr for a total dose of 750 mg/kg. Ethanol was given p.o. at a dose of 5.0 g/25 ml/kg 16 hr before sacrifice and phenobarbital was injected i.p. at 80 mg/2 ml/kg 24 hr before sacrifice. In combined drug treatments, ethionine was given 2 hr before administration of ethanol or phenobarbital. Animals were sacrificed at 6, 12, 24, 48, 72, and 120 hr after the last injection of ethionine, and livers from each group were pooled, homogenized with 0.25 M sucrose and 0.001 M EDTA, homogenates were centrifuged and microsomal pellets were prepare for spectroscopic analysis. In the ethionine-injecte animals, the level of liver triglycerides rose from a pre-injection level of 6.8 ± 2.8 mg/g to 12.3 ± 2. mg/g 6 hr after injection, and reached a maximum lev of 21.8 ± 4.5 mg/g 48 hr after injection. The conte of microsomal protein decreased from a baseline leve of 18.6 ± 0.4 mg/g to a minimum of 13.6 ± 0.2 mg/g 2 hr after injection and remained depressed at 16.9 ±

2 mg/g at 120 hr post-injection. Ethionine treat-
nt reduced the spectral activities (absorbence ·
$^{-3}$/mg of protein) of b_5 and P_{450} from preinjection
vels of 48.0 ± 0.7 and 33.3 ± 0.8, resp., to
2 ± 1.5 and 15.4 ± 1.3 in 24 hr. Aniline hydroxy-
e and aminopyrine demethylase activities (µmoles/
min) decreased from baseline levels of 0.34 ± 0.02
3.50 ± 0.20, resp., to 0.27 ± 0.01 and 2.92 ± 0.25
6 hr. The effect of phenobarbital or ethanol to
rease the contents of the cytochromes or to change
spectral characteristics of the drugs was com-
tely abolished in rats pretreated with ethionine.
vever, the effect of ethanol to stimulate aniline
roxylase was not affected by ethionine. The
etic analysis of the effect of ethionine pretreat-
t on ethanol or phenobarbital treatment showed that
ionine enhanced K_m values in all groups and also
$_x$ for aniline hydroxylase, but blocked the increase
V_{max} for aminopyrine demethylase by phenobarbital.

7 INFLUENCE OF AGE AND SEX ON HEPATIC LESIONS
INDUCED BY CHEMICAL CARCINOGENS: INGESTION
N-4-(4'-FLUOROBIPHENYL)ACETAMIDE BY BUFFALO STRAIN
S. *(E.)* Stromberg, K. (Natl. Cancer Inst., Beth-
a, Md.) and M. D. Reuber. *J Nat Cancer Inst*
5):1047-1054, 1970.

influence of age and sex on the development of
atic lesions was studied in Buffalo rats follow-
N-4-(4'-fluorobiphenyl)acetamide ingestion (0,04%
diet, *ad libitum*) for 36 weeks. The incidence of
cinomas decreased and the degree of differentiation
reased with age in the animals (particularly notice-
e in males). The average number of tumors/liver
average tumor diameter (cm) decreased steadily (in
es at 4 weeks 7-8 and 3.0, at 12 weeks 2-3 and 2.0,
24 weeks 1-2 and 1.5, and at 52 weeks 0-1 and 0.5,
in females at 4 weeks 0-1 and 2.0, at 12 weeks
and 2.5, at 24 weeks 0-1 and 0.5, and at 52 weeks
nd 0), indicating that for any one age group males
e more susceptible to the carcinogen than females.

8 ULTRASTRUCTURAL AND BIOCHEMICAL CHANGES
IN THE LIVER OF MONOCROTALINE INTOXICATED
KENS. *(E.)* Allen, J. R. (Dept. Path., U. Wiscon-
Madison), L. A. Carstens and D. H. Norback.
c Appl Pharmacol 16(3):800-806, 1970.

astructural morphology (gross, light and electron
oscopic observations) and biochemistry (DNA, RNA
nitrogen content) of livers were examined in
kens 10 weeks after a single dose (20 mg p.o.)
onocrotaline. The livers of the treated chickens
e small (3.1g compared to a control mean of 16.6g)
irregular with disrupted architecture, and 75%
he hepatic cells were large and pale with small
otic nuclei. Four types of hepatocytes were ap-
nt in the intoxicated livers: some were morpho-
cally similar to normal liver cells; a predominate
er were large containing glycogen granules, ves-
s, cisternae, mitochondria and lysosomes; the
rd type were slightly smaller with more abundant
plasmic organelles, less apparent matrix and
al mitochondria, lysosomes, microbodies and nu-
; and the fourth type were greatly degenerated
electron dense. Quantitatively (mg/100 mg liver)
DNA (0.011), RNA (0.33) and nitrogen (2.03) levels were reduced from normal levels (0.40, 0.70 and 3.07, resp.).

6059 HEPATOCELLULAR CHANGES ASSOCIATED WITH ALLYLISOPROPYLACETAMIDE-INDUCED HEPATIC PORPHYRIA IN RATS. *(E.)* Moses, H. L. (Vanderbilt U. Sch. Med., Nashville, Tenn.), J. A. Stein and D. P. Tschudy. *Lab Invest* 22(5):432-442, 1970.

The hepatocellular changes associated with experimental porphyria (allylisopropylacetamide-induced) a and the effects of adrenalectomy and protein synthesis inhibitors on the changes were examined biochemically (enzyme assays of δ-aminolevulinic acid synthetase, sulfobromophthalein conjugating enzyme and tyrosine transaminase) and morphologically (gross, light microscopic and electron microscopic observations) in rats. After a single dose of allylisopropylacetamide (AIA, 300 to 400 mg/kg s.c.) δ-aminolevulinic acid synthetase activity (mµmole/g liver/hr) increased (25 to 160), sulfobromophthalein conjugating enzyme activity (mg/g liver/5 min) increased (10 to 12 after 5 hr) and tyrosine transaminase activity (change in absorption/U/min) increased (1.0 to 1.8 after 4 hr); after multiple doses of AIA, the response of δ-aminolevulinic acid synthetase was much greater (25 to 265 after a second dose). Liver size (g/100g body weight) increased in the AIA group from a control level (4.11) to 4.91 after a single dose and to 6.08 after 3 daily doses (adrenalectomized animals exhibited no significant increase) and this increase could be accounted for by increased parenchymal cell size accompanied by increased nuclear and nucleolar size. Electron microscopy revealed glycogen depletion, hypertrophy of the smooth endoplasmic reticulum, and dense material in Golgi-associated vesicles in the livers of the treated group, and livers of adrenalectomized animals showed none of the hypertrophy. Administration of puromycin (100 mg/kg i.p.) or actinomycin D (1.5 mg/kg s.c.) with AIA prevented the hepatocellular changes and the overall morphologic effect was similar to that of puromycin or actinomycin D alone.

6060 INFLUENCE OF OROTIC ACID ON LIVER TUMORIGENESIS IN RATS INGESTING ETHIONINE, *N*-2-FLUORENYLACETAMIDE, AND 3'-METHYL-DIMETHYLAMINOAZOBENZENE. *(E.)* Sidransky, H. (U. Pittsburgh Sch. Med., Pa.) and E. Verney. *J Nat Cancer Inst* 44(5):1201-1215, 1970.

Diets containing orotic acid were fed to male and female Sprague-Dawley rats either before or during the feeding of diets containing ethionine, *N*-2-fluorenylacetamide (2-FAA), or 3'-methyl-4-dimethylaminoazobenzene (3'-Me-DAB). In the orotic acid and ethionine experiments, the highest incidence (74%) of liver carcinoma occurred in rats fed ethionine alone. Rats fed the diet containing orotic acid for 3 weeks and then shifted to ethionine alone or with orotic acid had a much lower incidence of liver cancer (44 and 31%, resp.). Addition of adenine sulfate to the diet containing ethionine alone led to a 63% incidence, while the addition of adenine to the ethionine plus orotic acid diet led to an incidence of 77%. No liver tumors were found in rats fed the diet containing orotic acid alone or adenine sulfate alone. In orotic acid and 2-FAA experiments, the heaviest livers were found in animals fed the 2-FAA plus adenine sulfate diet with a 95% incidence of liver cancers. An 87% incidence occurred with the 2-FAA diet alone. In rats fed orotic acid for 3 weeks and then shifted to 2-FAA alone, to 2-FAA and orotic acid, and to 2-FAA, orotic acid, and adenine sulfate, the incidence of liver cancers was 58 to 65%. In animals shifted to 2-FAA plus orotic acid, increases in hepatic lipid persisted for 2 and 5 weeks (17.7 and 16.4%, resp.) and then decreased after 9 and 13 weeks (9.1 to 9.5%). In the animals shifted to 2-FAA alone, the hepatic lipids dropped from 7.0-8.6% after 2, 5, and 9 weeks, to 4.7% after 13 weeks. In the orotic acid and 3'-Me-DAB experiments, male rats fed diets with orotic acid before or during the feeding of 3'-Me-DAB developed the same high incidence of liver cancers as rats fed 3'-Me-DAB alone (91 to 100%).

6061 INCREASED ETHANOL TOXICITY IN OLD RATS: CHANGES IN LD50, *IN VIVO* AND *IN VITRO* METABOLISM, AND LIVER ALCOHOL DEHYDROGENASE ACTIVITY. *(E.)* Wiberg, G.S. (Res. Lab., Food Drug Directorate, Ottawa, Canada), H.L. Trenholm and B.B. Coldwell. *Toxic Appl Pharmacol* 16(3):718-727, 1970.

The acute lethal dose of ethanol in young (about 100 days) and old (10-12 months old) male rats was studied to learn whether age altered acute ethanol toxicity. The acute (24 hr) LD_{50} of ethanol was determined in both groups, the value being 10.6 g/kg in young rats and 7.06 g/kg in the old rats after p.o. administration. Blood and brain decay profiles for ethanol and acetaldehyde were also investigated to compare relative rates of metabolism. The blood ethanol levels, although initially higher in young rats, also declined more rapidly. The rate of metabolism of brain ethanol was slower in the older than in young animals. Metabolism of ethanol in liver slices of young rats was 871 μg/g/hr as compared to 531 μg/g/hr in the older group. Old rats seemingly are significantly more susceptible to acute ethanol toxicity than young rats.

6062 ALTERATION OF ALCOHOL-DEHYDROGENASE ACTIVITY FOLLOWING PROTEIN DEFICIENCY AND ETHANOL. *(Ger.)* Bode, C. (Med. Clin., U. Marburg, Germany), H. Goebell and M. Stahler. *Z Ges Exp Med* 152(2): 111-124, 1970.

The effect of alcohol on liver alcohol dehydrogenase activity was studied in 300 male Wistar rats fed normal diets (24% protein) or protein-poor diets (0.5 or 5% protein), with or without ethanol (15%) in their drinking water. In control animals ADH-activity increased with age (1.83 to 3.03/mg liver wt at 1 week and 18 weeks, resp.). While ethanol administration brought about an initial increase in ADH levels in rats fed either diet, after 3 weeks animals maintained on the standard diet exhibited normal (no ethanol) enzyme levels. In animals fed the 5% protein diet, ADH-activity fell between the 1st and 12th weeks but increased in the 18th week, while those fed the 0.5% protein diet had even lower ADH activities (15% of normal after 3 weeks), which later returned to normal Comparison of alcohol concentrations in the blood of rats fed standard and protein-poor diets, revealed a maximal concentration at 2 hr of 34 mM in the former and almost twice that in the latter. This effect continued for 12 hr after feeding in the low-protein group and fell to fasting level in the normal. This decrease in ADH-activity may explain the unfavorable effect of protein deficiency in liver damage caused by alcohol.

6063 EXCHANGE TRANSFUSION IN THE TREATMENT OF PATIENTS WITH ACUTE HEPATITIS IN COMA. *(E.* Rivera, R. A. (Walter Reed Gen. Hosp., Washington, D.C.), R. L. Slaughter and H. W. Boyce, Jr. *Amer J Dig Dis* 15(6):589-602, 1970.

6064 ERYTHROID APLASIA AFTER HALOTHANE HEPATITI REPORT OF A CASE. *(E.)* Abraham, J. P. (He Ford Hosp., Detroit, Mich.), J. C. Jurgensen and W. Hardy. *Amer J Dig Dis* 15(6):577-581, 1970.

6065 AFLATOXIN-INDUCED HEPATIC INJURY IN THE AFRICAN MONKEY. *(E.)* Alpert, E. (Massachu setts Gen. Hosp., Boston), A. Serck-Hanssen and B. Rajagopolan. *Arch Environ Hlth* 20(6):723-728, 1970.

6066 FUNCTIONAL CHANGES OF THE LIVER IN MUSHRO POISONING. *(Rus.)* Grechishkin, D. K. (Voroshilovgrad Med. Inst., U.S.S.R.), G. A. Mozhay N. N. Klodchenko and A. I. Goncharov. *Vrach Delo* (5):60-62, 1970.

6067 HEPATIC COPPER CONTENT IN MAN AND EXPERIMENTAL ANIMALS SUBJECTED TO ACUTE LIVER TRAUMA. *(Rus.)* Belozerov, E. S. (Tyumen Med. Inst. U.S.S.R.) and V. A. Agarkov. *Biull Eksp Biol Med* 69(3):119-122, 1970.

6068 HEPATOTOXICITY OF CAFFEINE AND THEOPHYLLI *(Ger.)* Strubelt, O. (Med. Acad. Lubeck, Germany), F. Wegener and C. P. Siegers. *Arzneimitt forschung* 20(4):473-476, 1970.

6069 FIRST HISTOENZYMATIC INVESTIGATION OF A HETEROTOPIC LIVER GRAFT ON A HUMAN. *(Fr.* Wegmann, R. (Med. Fac., Paris, France), L. Leger, F. Monsallier, Y. Chapuis, J. Lenriot, G. Lemaigre and A. Charbonnier. *Ann Histochim* 15(1):25-32, 19

6070 AFLATOXIN-INDUCED FATAL HEPATITIS: A CA REPORT FROM UGANDA. *(E.)* Serck-Hanssen, (Ulleval Hosp., Oslo, Norway). *Arch Environ Hlth* 20(6):729-731, 1970.

6071 EFFECT OF ACUTE AND CHRONIC ADMINISTRATI OF ETHANOL AND ALCOHOLIC BEVERAGES ON TISSUE TRIGLYCERIDES. *(E.)* Di Luzio, N. R. (Tulan U. Sch. Med., New Orleans, La.). *Quart J Stud Alc hol* 5(supp. 5):26-33, 1970.

072 RIBOFLAVIN PROTECTION AGAINST AZO DYE HEPATOMA INDUCTION IN THE RAT. *(E.)* Lam-
ooy, J. P. (Sch. Med. U. Maryland, Baltimore). *Proc
oc Exp Biol Med* 134(1):192-194, 1970.

073 CIRCULATING HEPARIN-LIKE SUBSTANCE FOLLOWING LIVER INJURY. *(E.)* Little, J. M. (U.
ept. Surg., Sydney, Australia), I. Bailey, H.
ronenberg and J. P. Halliday. *Lancet* 1(7655):
055-1056, 1970.

074 DEATH DUE TO ACUTE HEPATIC NECROSIS SECONDARY TO ADMINISTRATION OF HALOTHANE ANESTHE-
IA. *(E.)* Nowill, W. K. (Arnot-Ogden Mem. Hosp.,
lmira, New York). *Anesth Analg* 49(3):355-360, 1970.

075 EFFECTS OF ETHANOL ON THE LIVER. *(Nor.)* Morland, J. (U. Pharm. Inst., Oslo, Norway).
rd Med 83(14):425-431, 1970.

076 HEPATITIS RELATIVE TO HALOTHANE ANESTHESIA IN IRRADIATION THERAPY FOR UTERINE CANCER.
or.) Nielsen, F. H. (Odense Hosp., Norway) and M.
lsgaard. *Ugeskr Laeg* 132(22):1029-1031, 1970.

077 CLASSIFICATION OF NEONATAL HEPATITIS. *(E.)* Boon, J. (Radboud Hosp., Nijmegen, Nether-
nds) and E. Schretlen. *Maandschr Kindergeneesk*
(3):77-86, 1970.

78 HEPATITIS WITH AND WITHOUT VITAMIN B_{12} FOLIC ACID THERAPY. *(Ger.)* Borner, E.
en. Hosp. St. Georg, Hamburg, Germany). *Med Welt*
(24):1107-1112, 1970.

6079 GLYCOLYSIS AND ENZYME REGULATION IN RAT LIVER HYALOPLASMA IN CASE OF LIVER CANCEROGENOUS COMPOUNDS AND MONURON ADMINISTRATION. *(Rus.)* Rubenchik, B. L. (Kiev Inst. Nutr. Hyg., USSR). *Biull Eksp Biol Med* 69(3):61-63, 1970.

6080 THE EFFECT OF SODIUM TAURINE N-CARBODITHIOATE (TDT) ON THE LIVER CELL WALL OF WHITE MICE WITH CARBON TETRACHLORIDE (CCl_4) DAMAGE. *(Jap.)* Masuda, K. (Wakayama Prefect. U. Med., Japan). *Folia Pharmacol Jap* 66(1):11-18, 1970.

6081 PENTOBARBITAL CATABOLISM IN LIVER DAMAGE. *(Ger.)* Held, H. (Med. Clin. U. Tubingen, Germany), H. F. Von Oldershausen and H. Remmer. *Klin Wschr* 48(9):565-567, 1970.

6082 THE EFFECT OF ACUTE AND SUBACUTE ALCOHOLIC INTOXICATION OF RAT LIVER: CONCERTED HISTOENZYMOLOGICAL INVESTIGATION. *(Fr.)* Ishizu, H. (Fac. Med. U. Kyushu, Japan) and R. Wegmann. *Ann Histochim* 15(1):53-86, 1970.

6083 INJURIES OF THE LIVER IN CHILDREN. *(Rus.)* Bairov, G. A. (Vladivostok Med. Inst., USSR) and A. P. Shapkina. *Vestn Khir* 104(4):102-108, 1970.

- P:Morph (5424)(5461)
- P:Secr:Hep (5571)(5600)(5603)
- Diagproc (5647)(5663)
- D:Livbil (5995)(5999)
- D:Livbil:A.V.Hep (6086)(6088)
- D:Livbil:Cirrh (6112)(6122)
- D:Gen (6185)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

84 PUNCTURE BIOPSY OF THE LIVER IN ASSESSMENT OF BOTKIN'S DISEASE IN CHILDREN. *(Rus.)*
akhgildyan, I. V. (D. I. Ivanovski Inst. Virology,
scow, USSR), S. N. Kutchak, V. I. Tsypkin and M. V.
dkina. *Pediatriia* 15(4):65-71, 1970.

85 HEPATITIS COMPLICATED BY CIRRHOSIS CAUSED BY OCCASIONAL DRUG ABUSE. *(Nor.)* Jensen,
AE. (Copenhagen, Denmark). *Ugeskr Laeg*
(19):880-881, 1970.

6086 CLINICAL AND MORPHOLOGICAL CHANGES IN INFANT HEPATITIS. *(Ger.)* Hinkel, G. K. (Med. Acad., Carl Gustav Carus, Dresden, Germany) and G. Roschlau. *Deutsch Gesundh* 25(16):745-750, 1970.

6087 AUSTRALIA ANTIGEN IN A FAMILY. *(E.)* Hadziyannis, S. J. (Evangelismos Hosp., Athens, Greece) and G. E. Merikas. *Lancet* 1(7655):1057-1058, 1970.

6088 FULMINANT HEPATITIS IN A JUVENILE-ONSET DIABETIC: COURSE AFTER RECOVERY FROM HEPATITIS FAILURE TREATED WITH EXCHANGE TRANSFUSION. *(E.)* Goldstein, L. I. (Harbor Gen. Hosp., Torrance, Cal.), L. Lipitz, P. Niosi and C. Trey. *Amer J Gastroent* 53(4):352-359, 1970.

6089 VIRAL HEPATITIS. *(E.)* Ruggiero, D. A. (U. Toronto, Ontario, Canada). *Univ Toronto Med J* 47(4):128-130, 1970.

6090 THE SIGNIFICANCE OF THE AUSTRALIA (HEPATITIS) ANTIGEN. *(E.)* Wright, R. (Oxford Med. Sch., England). *Oxford Med Sch Gazz* 22(1):28-29, 1969.

6091 SERUM HEPATITIS. *(Rus.)* Ugriumov, B. L. (no affil). *Voennomed Zh* (1):32-33, 1970.

6092 CLINICAL COURSE OF INFECTIOUS HEPATITIS IN FAMILIAL FOCI. *(Rus.)* Ryzhnev, V. E. (Rostov On The Don Med. Inst., USSR). *Klin Med* 48(1):115-118, 1970.

6093 BOTKIN'S DISEASE AND THE DEVELOPMENT OF CHRONIC HEPATITIS AND LIVER CIRRHOSIS IN CHILDREN. *(Rus.)* Kolner, R. Yu. (Kiev Med. Inst., USSR). *Pediatriia* 15(4):71-77, 1970.

6094 CONSERVATIVE TREATMENT OF PANCREATIC FISTULAS COMPLICATING ACUTE HEPATITIS. *(Rus.)* Bukin, A. S. (Zaporozhye, USSR). *Vrach Delo* (3):34-37, 1970.

6095 BLOOD COAGULATION AND ANTICOAGULATION IN NON-ICTERIC AND EFFACED FORMS OF INFECTIOUS HEPATITIS. *(Rus.)* Fedenko, N. N. (Lugansk, USSR). *Vrach Delo* (3):151-154, 1970.

6096 COMPARATIVE ANALYSIS OF THE NUMBER OF BINUCLEAR CELLS AND MITOSES IN THE LIVER OF PATIENTS WITH INFECTIOUS MONONUCLEOSIS AND INFECTIOUS HEPATITIS. *(Rus.)* Astakhova, A. M. (Clin. Infect. Dis. Dept. Histology, Pirogov Med. Inst., Moscow), A. V. Zmyzgova and L. K. Sirina. *Arkh Pat* 32(3):48-51, 1970.

6097 INFECTIOUS HEPATITIS WITH CHOLESTASIS; JAUNDICE OF NEOPLASTIC ORGIN: CLINICAL AND LABORATORY FEATURES. *(Rus.)* Lyskovtsev, M. M. (Kharkov Med. Inst., USSR) and V. P. Bublii. *Klin Med* 51(3):46-49, 1970.

6098 HEPATITIS ASSOCIATED (AUSTRALIA/SH) ANTIGEN. *(Nor.)* Reinicke, V. (Bispebjerg Hosp., Copenhagen, Denmark). *Ugeskr Laeg* 132(19):863-867, 1970.

6099 HEPATITIS ASSOCIATED ANTIGEN IN AN EPIDEMIC OF INFECTIOUS HEPATITIS: QUALITATIVE AND QUANTITATIVE DETERMINATION. *(Nor.)* Skinhoj, P. (Bispebjerg Hosp., Copenhagen, Denmark), P. Lous and H. Olesen. *Ugeskr Laeg* 132(19):870-872, 1970.

6100 HEPATITIS ASSOCIATED ANTIGEN IN YOUNG DRUG ADDICTS WITH HEPATITIS. *(Nor.)* Jersild, T. (Fra Vestre Hosp., Copenhagen, Denmark), A. M. Prince and P. Skinhoj. *Ugeskr Laeg* 132(19):873-874, 1970.

6101 AUSTRALIA/SH ANTIGEN IN DRUG ADDICTS AND PATIENTS WITH CHRONIC LIVER DISEASE: PRELIMINARY INVESTIGATIONS ON A GROUP OF DANISH PATIENTS. *(Nor.)* Reinicke, V. (Bispebjerg Hosp., Copenhagen, Denmark) and E. Nordenfelt. *Ugeskr Laeg* 132(19):867-86 1970.

6102 URGENT PROBLEMS IN THE FOLLOW-UP OF HEPATITIS CONVALESCENTS. *(Rus.)* Shlyakhtenko, L. I. (Leningrad Med. Inst. Hygiene, USSR), M. G. Kanevskaya and M. G. Tagiev. *Sovet Med* 33(3):98-100, 1970.

6103 DISPENSARY FOLLOW-UP OF PERSONS WITH EPIDEMIC HEPATITIS IN THEIR HISTORY. *(Rus.)* Volkodaeva, A. A. (no affil). *Sovet Med* 33(3):131-133, 1970.

6104 CLINICO-EPIDEMIOLOGICAL CHARACTERISTICS OF THE SEQUELAE OF EPIDEMIC HEPATITIS: REPORT I. *(Rus.)* Shlyakhtenko, L. I. (Leningrad Med. Inst. Hygiene, USSR), M. G. Kanevskaya, T. B. Pesherstnyak and M. G. Tagiev. *Zh Mikrobiol* 47(3):55-60, 1970.

- P:Secr:Hep (5600)
- Diagproc (5663)(5695)(5699)(5700)(5723)(5726)
- D:Livbil (5995)(5996)(6013)(6027)(6050)
- D:Livbil:A.Nonv.Hep (6077)(6078)
- D:Livbil:C.Hep (6105)(6109)
- D:Livbil:Cirrh (6117)
- D:Gen (6168)

Chronic Hepatitis

5105 THE CONCENTRATION OF β-GLOBULIN-α1 IN SERUM IN ACUTE AND CHRONIC PATHOLOGIC STATES IN
:IDNEY, LIVER AND RHEUMATIC DISORDERS. *(Ger.)* Pogg-
itsch, H. (Med. U. Clin. Graz, Austria), W. Giessauf,
. Feldner and G. Stockl. *Wein Med Wschr* 120(21):
81-385, 1970.

106 THE HISTOLOGY OF FOLLICULAR HEPATITIS AND THE OCCURRENCE OF AUTOIMMUNIZATION IN THE
IVER. *(Jap.)* Ota, Y. (Okayama U. Sch. Med., Japan),
. Kobayashi and T. Tsuji. *Jap J Clin Med* 28(2):
38-247, 1970.

107 IMMUNOLOGICAL STUDIES IN PATIENTS WITH CHRONIC HEPATITIS. *(E.)* Gioannini, P. (Dept.
ntern. Med., U. Siena, Italy), R. Marcolongo, Jr. and
. Scalise. *Boll Ist Sieroter Milan* 48(6):617-628,
969.

108 HEMODYNAMIC PARAMETERS IN PATIENTS WITH CHRONIC HEPATITIS AND CIRRHOSIS OF THE
IVER. *(Rus.)* Loginov, A. S. (All-Union Sci. Res.
nst. Gastroenterology, U.S.S.R.) and V. S. Belyaeva.
lin Med 48(4):70-75, 1970.

6109 LUPOID HEPATITIS. *(Dut.)* Spiessens, H. (St. Augustinus Clin., Antwerp, Netherlands). *T Gastroent* 12(5):468-470, 1969.

6110 SUBCLINICAL HEPATITIS IN CONNECTIVE-TISSUE DISEASES. *(E.)* (anon) *Lancet* 1(7656): 1095-1096, 1970.

6111 AMYLOLYTIC FUNCTION OF THE PANCREAS IN PATIENTS WITH CHRONIC HEPATITIS AND LIVER CIRRHOSIS. *(Rus.)* Valenkevich, L. N. (Leningrad Med. Inst. Hygiene, USSR). *Sovet Med* 33(3):101-104, 1970.

o Diagproc (5647)(5669)
o D:Livbil (6001)(6026)(6050)
o D:Livbil:A.Nonv.Hep (6078)
o D:Livbil:A.V.Hep (6093)
o D:Livbil:C.Hep (6106)
o D:Livbil:Cirrh (6112)(6114)(6119)
o D:Gen:Parasit (6256)

LIVER AND BILIARY TRACT

Cirrhosis

112 GASTROENTERIC CLEARANCE OF ALBUMIN IN LIVER CIRRHOSIS: RELATIVE PROTEIN-LOSING
ASTROENTEROPATHY. *(E.)* Takada, A. (Sch. Med.,
anazawa U., Japan), K. Kobayashi and J. Takeuchi.
igestion 3(3):154-164, 1970.

urn-over changes and gastroenteric clearance of
.bumin was studied in 23 patients with liver dis-
ises (4 acute hepatitis, 5 chronic hepatitis, 14
.ver cirrhosis). To explore the role of gastro-
iteric degradation as an extrahepatic factor re-
ited to hypoalbuminemia development. Albumin
isses into stools (g/day) were 2.02 ± 0.14 in con-
rols, 2.03 ± 0.46 in acute hepatitis, 2.14 ± 0.33
chronic hepatitis, and 2.44 ± 1.26 in liver
rrhosis, resp.; differences were not statistically
gnificant. Serum loss into stools was significantly
creased in liver cirrhosis compared with those in
ntrols (65.7 ± 14.4 ml vs 39.0 ± 4.8 ml, $p<0.01$).
rcentages of albumin degradation in gastrointesti-
l tract to total catabolism (degradation ratio)
re significantly higher in liver cirrhosis com-
red with controls (32.4 ± 10.4 vs 16.9 ± 3.0,
0.01). Changes in loss of serum and fractions of
bumin catabolism in acute and chronic hepatitis
re not statistically significant from control
lues. In cirrhotic patients, all values concerning
stroenteric clearance were significantly higher in
tients with signs of portal hypertension, than in
ose without these signs ($p<0.05$ albumin loss, $p<0.01$ in serum loss and degradation ratio). Significant correlations between portal pressure and albumin excretion into stools and between serum albumin levels and serum loss into stool or gastroenteric ratio were also observed. Albumin loss into stool seemingly was relatively increased in liver cirrhosis; this was caused by the impairment of the control mechanism of albumin degradation in the gastrointestinal tract.

6113 ENDOSCOPIC STUDY OF THE CIRRHOTIC PATIENT BEFORE AND FOLLOWING PORTACAVAL SHUNT FOR BLEEDING VARICES. *(E.)* Dagradi, A. E. (U. California Los Angeles Sch. Med.), S. J. Stempien and D. T. D. Tan. *Amer J Gastroent* 53(5):425-436, 1970.

Endoscopic findings were evaluated in 50 cirrhotic patients before and following portacaval shunt for bleeding varices (32 esophageal and 18 gastric fundal). When surgical portal decompression was adequate (40 patients), varices still exist, but were small in caliber and extent. A similar but less pronounced improvement in endoscopic appearance of varices was observed when shunt was patent (6 patients) but less than adequate (compromised stoma) while a marked increase in extent and size of large varices was observed when shunt was occluded (4 patients). These categories conform well with findings established by splenic manometry and splenoportal venography. Following postcaval shunt, varices increased to some degree in caliber and extent (did not assume preshunt conditions) and when the shunt became occluded, portal venous pressure increased and large varices resulted. The mortality rate was 100%, survival rate was 8-10 days following surgery, and re-bleeding from ruptured varices was the primary cause of death. Re-bleeding from varices did not result in patients having a less-than-adequate shunt. Bleeding from peptic ulcer disease tripled in frequency while bleeding from hemorrhagic erosive gastritis quadrupled (from one to four patients) in frequency in postshunt patients. The protective value of successful portacaval shunt against re-bleeding from esophageal varices is apparent, but the procedure does not insure patients against future episodes of upper gastrointestinal bleeding from other sources.

6114 IRON ABSORPTION AFTER PORTCAVAL SHUNT OPERATIONS.

(E.) Chernelch, M. J. (Donnor Lab., Lawrence Radiat. Lab., U. California, Berkeley), H. S. Winchell, T. W. Sargent, M. Pollycove and C. J. Shkurkin. *Lawrence Radiat Lab Semiann Rep Biol Med* (UCRL 19420):25-29, 1970.

Intestinal iron absorption was studied in 15 cirrhotic patients, 7 of whom had undergone end-to-side portacaval shunting for portal hypertension, 5 weeks to 5.5 yr prior to the absorption studies. In 2 patients, studies were performed both before and after the operation. In addition, iron absorption was studied in 4 dogs both before and 6 weeks and 4 months after end-to-side portacaval shunting. Intestinal iron absorption was subnormal for both groups of patients. There was no increase in intestinal iron absorption following portacaval shunting in the cirrhotic patients. Intestinal iron absorption decreased following the shunting operation in the 2 patients studied before and after surgery. In the 4 dogs, iron absorption increased following the shunting operation, and it continued to increase during the 6-week to 4-month interval. At the 4-month interval, serum iron concentrations and plasma radioiron clearance rates had returned to approximately normal preoperative levels; 2 dogs had hematocrit values comparable to preoperative levels, and the other 2 had diminished venous hematocrit levels. End-to-side portacaval shunting in the dogs seemingly results in increased portal venous pressure, whereas in the cirrhotic patients, portal venous pressure was decreased which may have had an effect on the decreased iron absorption.

6115 SERUM IMMUNOGLOBULIN STUDIES IN CHRONIC HEPATITIS AND CIRRHOSIS.

(Fr.) Pirotte, J. (Med. Dept., U. Liege, Belgium), L. Ruyters and J. Salmon. *Acta Gastroent Belg* 33(1):9-18, 1970.

Serum immunoglobin (IgA, IgM, IgG) levels were measured in 100 normal, 40 cirrhotic and 30 patients with chronic hepatitis (12 active, 18 persistent) using antibody-agar plates. Normal controls had IgA, IgG, and IgM levels (in mg%) of 320.30, 104.09, and 957.02, resp. Cirrhotic patients (whether alcoholic or post-hepatic) exhibited elevated IgA levels, with the increase depending on the severity of the disease (423.85 to 610.56). Patients with active chronic hepatitis showed a marked increase in IgG (2313.75) and in IgM (435.42) while patients with chronic persistent hepatitis had levels of 1441 and 124.06, resp. The use of immunoglobin pattern does not appear to be indicated as a diagnostic tool for cirrhosis.

6116 HISTOMETRICAL ANALYSIS OF HEPATIC PARENCHYMA IN NORMAL AND CIRRHOTIC LIVERS.

(E.) Kaneda, M. (Tohoku U. Sch. Med., Japan) and T. Takahashi. *Tohoku J Exp Med* 100(3):201-225, 1970.

Quantitative analysis of the intranodular structure in liver cirrhosis was studied in 194 biopsy specimens wit histometrical methods. Capillarization per unit volume of liver cells in cirrhosis was much reduced in comparison with the normal liver and this was attributed to enormous thickening or hypertrophy of liver cell plates. Hypertrophy of cell plates in cirrhosis apparently was due either to swelling of individual cells or to cell multiplication. A perverted hyperplasia was evident and was assumed in behavior of liver cells in liver cirrhosis, which was found neither in normal liver nor in any stage of hepatitis. Nodule formation in liver cirrhosis appears to be based on a process which is different from simple regeneration of liver cells. Histometrical results were also of diagnostic value in discrimination of liver cirrhosis from other liver conditions particularly on small biopsy specimens, where cirrhotic nodules could not be always identified.

6117 SEROTONIN METABOLISM IN LIVER CIRRHOSIS.

(Rus.) Geller, L. I. (Khabarovsk Med. Inst., USSR), Z. P. Kozlova and N. G. Kontseva. *Sovet Med* 33(3):19-21, 1970.

6118 BILIARY CIRRHOSIS.

(Fr.) Quinton, A. (no affil). *France Med* 33(2):53-64, 1970.

6119 POST-HEPATITIS CIRRHOSIS.

(Fr.) Bancons, J. (no affil), A. Quinton and J. P. Labat. *France Med* 33(2):83-86, 1970.

6120 NUTRITIONAL COMPLICATIONS OF BILIARY CIRRHOSIS: CHRONIC CHOLESTASIS.

(E.) Sherlock, S. (Roy. Free Hosp. Sch. Med., U. London, England). *Amer J Clin Nutr* 23(5):640-644, 1970.

6121 CIRRHOSIS AND DIABETES: IV. EFFECT OF POTASSIUM CHLORIDE ADMINISTRATION ON GLUCOSE AND INSULIN METABOLISM.

(E.) Conn, H. O. (VA Hosp., New Haven, Conn.). *Amer J Med Sci* 259(6):394-404, 1970.

6122 ALCOHOL AND THE LIVER.

(E.) Ebers, G. (U. Toronto, Ontario, Canada). *Univ Toronto Med J* 47(4):125-127, 1970.

123 COMPARTMENTILIZATION OF ASCITES AND EDEMA IN PATIENTS WITH HEPATIC CIRRHOSIS. *(E.)* hear, L. (Temple U. Hlth. Sci. Ctr., Philadelphia, a.), S. Ching and G. J. Gabuzda. *New Eng J Med* 82(25):1391-1396, 1970.

124 LIVER ENZYMES IN HYPERTENSION. *(E.)* Loyke, H. F. (St. Vincent Char. Hosp., Cleveland, hio). *Amer J Gastroent* 53(4):339-351, 1970.

125 IMPAIRED LYMPHOCYTE RESPONSE IN PRIMARY BILIARY CIRRHOSIS. *(E.)* Fox, R. A. (Roy. ree Hosp., London, England), D. G. James, P. G. cheuer, O. Sharma and S. Sherlock. *Proc Roy Soc ed* 63(4):357-358, 1970.

126 RENAL FUNCTION, RENIN ACTIVITY AND ENDOGENOUS VASOACTIVE SUBSTANCES IN CIRRHOSIS. *.)* Baldus, W. P. (Mayo Clin., Rochester, Minn.), E. Barnardo, W. H. J. Summerskill and C. G. Strong. *ter J Dig Dis* 15(5):419-425, 1970.

6127 RENAL FUNCTION CHANGES IN CIRRHOSIS OF THE LIVER: A PROSPECTIVE STUDY. *(E.)* Klingler, E. L., Jr. (U. New Mexico Coll. Med., Albuquerque), C. A. Vaamonde, L. S. Vaamonde, R. G. Lancestremere, H. J. Morosi, E. Frisch and S. Papper. *Arch Intern Med* 125(6):1010-1015, 1970.

6128 PORTASYSTEMIC SHUNTING PROCEDURES FOR PORTAL HYPERTENSION: TWENTY-SIX YEAR EXPERIENCE IN ADULTS WITH CIRRHOSIS OF THE LIVER. *(E.)* Voorhees, A. B., Jr. (Coll. Physicians Surgeons, Columbia U., New York, N. Y.), J. B. Price, Jr. and R. C. Britton. *Amer J Surg* 119(5):501-505, 1970.

o Diagproc (5646)(5647)(5672)(5688)
o D:S.Intest:Malabs (5898)
o D:Livbil (5996)(6002)(6011)(6013)(6026)(6027)(6045)(6050)
o D:Livbil:A.V.Hep (6085)(6089)(6093)
o D:Livbil:C.Hep (6108)(6111)
o D:livbil:Gallb (6130)(6131)
o D:Gen (6168)

LIVER AND BILIARY TRACT

Gallbladder and Biliary Tract Diseases

29 SYNTHESIS AND SECRETION OF BILIARY PHOSPHOLIPIDS IN MAN: AN EXPERIMENTAL STUDY TH SPECIAL REFERENCE TO THE RELEVANCE OF GALLSTONE RMATION. *(E.)* Nilsson, S. (Sahlgrenska Hosp., U. teborg, Sweden). *Acta Chir Scand* (supp 405):1-38, 70.

30 REVERSIBLE REPRODUCTION OF THE ABNORMAL ESTRADIOL METABOLISM OF BILIARY OBSTRUCTION ADMINISTRATION OF NORETHANDROLONE. *(E.)* Zumoff, (Montefiore Hosp. Med. Ctr., New York, N.Y.), J. shman, J. Levin, T. F. Gallagher and L. Hellman. *lin Endocr Metab* 30(5):598-601, 1970.

31 CONGENITAL MALFORMATIONS OF THE BILE-DUCTS. *(Fr.)* Hoeffel, J. C. (no affil). *Gazz Med nce* 77(12):2675-2695, 1970.

32 THE PATHOLOGICAL PHYSIOLOGY OF GALLBLADDER AFFLICTION AND ITS PHARMACOTHERAPY. *(Jap.)* aeda, H. (Tokyo U. Sch. Med., Japan). *J Jap Med* 63(2):295-317, 1970.

33 COMPLETE TRANSECTION OF THE COMMON BILE DUCT DUE TO BLUNT ABDOMINAL TRAUMA. *(E.)* Rydell, B., Jr. (Southern Nevada Mem. Hosp., Las Vegas). *h Surg* 100(6):724-728, 1970.

6134 ACUTE NONCALCULOUS CHOLECYSTITIS ASSOCIATED WITH SEVERE INJURY. *(E.)* Weeder, R. S. (Hunterdon Med. Ctr., Flemington, N. J.), G. H. Bashand and R. W. Muir. *Amer J Surg* 119(6):729-732, 1970.

6135 28,621 CHOLECYSTECTOMIES IN OHIO: RESULTS OF A SURVEY IN OHIO BY THE GALLBLADDER SURVEY COMMITTEE, OHIO CHAPTER, AMERICAN COLLEGE OF SURGEONS. *(E.)* Arnold, D. J. (Dept. Surg., Ohio St. U., Columbus). *Amer J Surg* 119(6):714-717, 1970.

6136 DILATATION OF THE INTRAHEPATIC BILIARY DUCTS IN A PATIENT WITH A CHOLEDOCHAL CYST. *(E.)* Gots, R. E. (Johns Hopkins U. Sch. Med., Baltimore, Md.) and G. D. Zuidema. *Amer J Surg* 119(6):726-728, 1970.

6137 CONCREMENTS RESULTING FROM SUTURE MATERIAL IN THE BILIARY TRACT: A CLINICAL AND EXPERIMENTAL STUDY. *(E.)* Silvennoinen, E. (Helsinki U. Central Hosp., Finland). *Ann Chir Gynaec Fenn* 59(supp 169):1-59, 1970.

6138 CARCINOMA OF THE DISTAL EXTRAHEPATIC BILE DUCTS: CASE REPORT. *(E.)* Thomas, D. (Melbourne, Australia). *Aust New Zeal J Surg* 39(4):393-395, 1970.

6139 MINOR AND ASYMPTOMATIC CHOLELITHIASIS. *(Dut.)* De Tollenaere, G. (Acad. Hosp. Ghent, Belgium). *T Geneesk* 26(8):418-420, 1970.

6140 DRAINAGE OF THE CHOLEDOCHUS VIA THE CYSTIC DUCT AFTER GALLBLADDER REMOVAL. *(Rus.)* Smirnov, E. V. (Leningrad, U.S.S.R.). *Vestn Khir* 104(4):35-40, 1970.

6141 ACUTE CHOLECYSTITIS: SURGERY. *(Rus)* Masumov, S. A. (Tashkent Med. Inst., U.S.S.R.). *Khirurgiia* 46(4):71-74, 1970.

6142 TREATMENT OF ACUTE CHOLECYSTITIS. *(Rus.)* Petrov, B. A. (N. V. Sklifosovski Inst., Moscow, U.S.S.R.), E. I. Galperin and N. N. Ivanova. *Khirurgiia* 46(4):65-71, 1970.

6143 CHOLEDOCHODUODENOSTOMY. *(Rus.)* Vinogradov, V. V. (P. Lumumba Univ. People's Friendship, Dept. Surg., Moscow, U.S.S.R.) and V. A. Vishnevsky. *Khirurgiia* 46(4):79-85, 1970.

6144 THE CONTENT OF SIALIC ACID IN THE BLOOD SERUM OF PATIENTS WITH ACUTE CHOLECYSTITIS. *(Rus.)* Khokhlov, N. F. (Tselinograd Med. Inst., U.S.S.R.), G. N. Neikov and L. T. Kaparulina. *Klin Med* 48(4):79-82, 1970.

6145 REDUCING POSTOPERATIVE MORTALITY IN PATIENTS WITH OBSTRUCTIVE JAUNDICE. *(Rus.)* Samoilova, M. A. (I. I. Dzhanelidze Sci. Res. Inst., U.S.S.R.), A. N. Sadkovskaya and V. V. Rumyantseva. *Vestn Khir* 104(3):103-105, 1970.

6146 PATHOGENESIS OF FUNCTIONAL DISTURBANCES OF THE PANCREAS IN PATIENTS WITH CHOLELITHIASIS. *(Rus.)* Kotiger, Ya. S. (Belts Republican Hosp., U.S.S.R.). *Vestn Khir* 104(3):39-43, 1970.

6147 CHOLECYSTOPATHY WITHOUT LITHIASIS OF THE VOLVULUS OF THE GALLBLADDER. *(Fr.)* Pecout, C. (Hosp. Ctr. Limoges, France), M. Faure, P. Cubertafond and R. Nuret. *Rev Med Toulouse* 6(4):307-310, 1970.

6148 TWO CASES OF SPONTANEOUS PERFORATION OF BILE DUCTS IN NEONATES. *(Fr.)* Prevot, J. (no affil), P. Vert and J. M. Babut. *Rev Pediat* 6(3):159-164, 1970.

6149 COMMON DUCT DYNAMICS IN MAN: THE INFLUENCE OF SYMPATHETIC BLOCK. *(E.)* Schein, C. J. (Montefiore Hosp., Bronx, N.Y.), V. El Tawil, H. Dardik and T. C. Beneventano. *Amer J Surg* 119(3):261-263, 1970.

6150 DIFFICULT PROBLEMS ENCOUNTERED IN THE MANAGEMENT OF BILIARY OBSTRUCTION DUE TO STONES AND OTHER BENIGN CONDITIONS. *(E.)* Longmire, W. P., Jr. (U. California Los Angeles, Med. Sch.) and D. M. Rangel. *Advance Surg* 4:105-158, 1970.

6151 DISCONNECTION OF THE PAPILLA OF VATER. *(E.)* Danese, C. A. (Mt. Sinai Sch. Med., City U. New York, New York), R. Margolese, D. A. Dreiling and A. E. Kark. *Amer J Gastroent* 53(5):446-459, 1970.

6152 SURGERY IN COMMON BILE DUCT LITHIASIS. *(E.)* Stefanini, P. (Dept. Surg. Path., U. Rome, Italy) and M. Ermini. *J Abdom Surg* 12(6):97-102, 1970.

6153 INFLUENCE OF INSULIN DEFICIENCY ON THE EXCRETION OF BILIRUBIN IN BILE. *(Ger.)* Muller-Oerlinghausen, B. (Pharmacol Inst. U. Gottingen Germany) and G. Schinke. *Naunyn Schmiedeberg Arch Pharmakol* 266(1):3-17, 1970.

6154 ELECTROPHORETIC INVESTIGATION OF LIVER PROTEINS IN ACUTE CHOLECYSTITIS. *(Rus.)* Zhidovinov, G. E. (Volgograd Med. Inst., USSR) and V. A. Khramov. *Khirurgiia* 46(2):37-40, 1970.

6155 ON THE BILIARY-JEJUNAL BYPASS AND ITS PLACE IN BILIARY SURGERY: 19 CASES. *(Fr.)* Da Silveira, M. J. X. (Hosp. Paris, France) and J. Perrotin. *Ann Chir* 24(3-4):185-195, 1970.

o Diagproc (5676)(5689)(5690)(5691)(5693)(5697)
(5706)(5707)(5708)(5715)(5727)(5730)
o D:Stomduo (5796)(5813)
o D:S.Intest (5857)
o D:Pancreas:Pancreat (5962)(5973)(5978)
o D:Livbil (5992)(5996)(6005)(6047)
o D:Livbil:Cirrh (6118)(6120)
o D:Gen (6168)(6216)
o D:Gen:Parasit (6282)

56 BIOASSAY EVIDENCE OF ABNORMAL SECRETIN-
LIKE ACTIVITY IN TUMOR AND BLOOD IN CASES
"CHOLERAIC DIARRHEA." *(E.)* Cleator, I.G.M.
estern Gen. Hosp., Edinburgh, Scotland), C.G.
mson, W. Sircus and M. Coombes. *Gut* 11(3):206-
, 1970.

-assay of tumor extracts and plasma from patients
h choleraic diarrhea are described, in addition
the influence of tumor extracts upon water and
transport across intestinal mucosa of the dog
cat. The first patient showed choleretic and
retin-like activity in extract of pancreatic
et cell tumor and gastrin-like activity in plasma,
le a second patient was found to have both secretin
gastrin-like activity in plasma, as well as
leretic activity. Extracts of tumor from the
st case of choleraic diarrhea caused a secretion
juice from otherwise unstimulated pancreas in
cat but not in the dog. Since the volume of
ce provoked from the unstimulated pancreas of
h animals by tumor extract was small, the pancreas
primed with an infusion of secretin (9.1 units
ts secretin/kg body weight/hr for the cat and
units/kg body weight/hr for the dog). Extract
tumor from the first case then caused augmentation
pancreatic output with secretin-like characteristics
both dog and cat. Response was rapid in onset and
short duration. Plasma from a second patient pro-
ed a rise in volume of pancreatic secretion in the
, while plasma from the same patient had no effect
pancreatic secretion in the cat until after
ming with secretin. During priming infusion
secretin in the dog, injection of extract of
or from the first patient and plasma from the
ond patient, there was an increased bilirubin
centration without change in volume of secreted
e. I.V. injection of various extracts did not
ect transport of water, sodium, chloride, or
assium through mucosa of Thiry-Vella intestinal
ps in perfusion experiments. Part of the pro-
e, watery electrolytic diarrhea of 'pancreatic
lera' syndrome associated with peptide-secreting
noma of pancreas seemingly is a reflection of
essive secretin production, as well as gastrin,
possibly also of a choleretic agent.

7 ANTITOXIC IMMUNITY IN EXPERIMENTAL CHOLERA:
OBSERVATIONS WITH PURIFIED ANTIGENS AND THE
TED ILEAL LOOP MODEL. *(E.)* Finkelstein, R. A.
Texas Southwestern Med. Sch., Dallas). *Infect*
n 1(5):464-467, 1970.

antitoxic immunity from purified choleragen
lera exo-enterotoxin) and choleragenoid (natural
id) in experimental cholera in rabbits was tested
ntraintestinal (ligated ileal loops) challenge
a variety of strains of living *cholera vibrios*
oximately 10^6 viable cells/challenge of SP35,
, NIH35, 26-3 or choleragen). Overall, the im-
zed rabbits resisted all the challenges without
gnificant antibacterial antibody response and the
gens were ineffective in protecting mice against
ng vibrios in mucin, although the immunized rab-
did develop high titers of circulating hemaglu-
ting antibody against chicken erythrocytes sensi-
d with choleragen and choleragenoid. Fluid outpouring (ml/cm ileal loop) decreased after challenge with SP35 (0.73 to 0.33), 569 (1.36 to 0.54), NIH41 (1.22 to 0.13), NIH35 (1.36 to 0.20), 26-3, (1.30 to 0.36) and choleragen (2.15 to 1.43), and the existence of only 1 serological type of cholera exo-enterotoxin is suggested.

6158 REVERSAL OF CHOLERA EXOTOXIN-INDUCED JEJUNAL SECRETION BY CYCLOHEXIMIDE. *(E.)* Harper, D. T., Jr. (Johns Hopkins Sch. Med., Baltimore, Md.), J. H. Yardley and T. R. Hendrix. *Johns Hopkins Med J* 126(5):258-266, 1970.

Thirteen male New Zealand white rabbits with Thiry-Vella intestinal loops injected with cholera exotoxin were used to determine if cycloheximide would reverse jejunal secretions induced by exotoxin. Cycloheximide (20 mg/kg i.v.) was given to 6 of these rabbits 2 hr after the exotoxin, nutrient broth was instilled instead of exotoxin in 5 control rabbits, broth was followed 2 hr later by cycloheximide in 5 others, and cycloheximide was given 1 hr before broth in 6 other rabbits. All loops were perfused following instillation for 9 hr with recirculating Ringer's lactate containing 0.3 mM phenol red. The perfusate was absorbed in all control loops at 0.25 cc/cm loop length. Both loops in animals receiving cycloheximide absorbed greater amounts (0.40 and 0.66 cc/cm) with more rapid concentration of phenol red during 4 1/2 hr after cycloheximide administrations. Loops stimulated with cholera exotoxin progressively diluted the phenol red with a final secretion of 2.27 cc/cm. Serial biopsies showed an absence of mitosis and crypt epithelial cell cytoplasmic vacuolization. Cycloheximide seemingly reverses established cholera exotoxin-induced fluid production in rabbit jejunal loops and increases net absorption from control loops and both effects may be attributed to the inhibition of blood to lumen flux.

6159 BACTERIA ELIMINATION IN SALMONELLA INFECTIONS DURING A SALMONELLA EPIDEMIC CAUSED BY GREEN SALAD. *(Ger.)* Bohlck, I. (Hyg. Inst. U. Kiel, Germany). *Oeff Gesundheitswesen* 32(1):18-22, 1970.

6160 GASTROENTERITIS IN BREAST-FED AND OTHER NEONATES: A NEW LOW-LACTOSE COW'S MILK PRODUCT. *(It.)* Centa, A. (St. Philip Pediat. Hosp., U. Genoa, Italy). *Minerva Pediat* 22(1):529-532, 1970.

6161 PANCREATIC FUNCTION IN HIGH FREQUENCY ELECTROTHERAPY. *(Rus.)* Korepanov, A. M. (Izhevsk Med. Inst., USSR). *Vrach Delo* (5):41-44, 1970.

6162 THE USE OF PORCINE AHG (ANTIHEMOPHILIC GLOBULIN) IN GASTRIC RESECTION FOR SEVERE HEMOPHILIA A. *(Ger.)* Kostering, H. (Med. Clin., U. Gottingen, Germany), H. K. Wellmer, K. Fuchs and P. Volker. *Chirurg* 41(6):266-270, 1970.

6163 GASTROINTESTINAL ALLERGY AND FOOD ALLERGY. *(Nor.)* Hexeberg, A. (Haukeland Hosp., Norway). *T Norsk Laegeforen* 90(6):581-585, 1970.

6164 CLASSIFICATION OF ANTIBIOTIC RESISTANT *E. coli*: STRAINS FOR EPIDEMIOLOGICAL PURPOSES IN ENTERITIS. *(Ger.)* Kruger, W. (Hyg. Inst. Berlin, Germany) and I. Pfeifer. *Deutsch Gesundh* 25(16):737-740, 1970.

6165 COMPLICATIONS OF PERITONEAL DIALYSIS. *(Ger.)* Traut, G. (1st Med. Clin. U. Hamburg, Germany). *Therapiewoche* 20(22):1020-1023, 1970.

6166 COMMENTS ON SHIGELLOSIS OBSERVED IN THE PEDIATRIC SERVICES IN LYONS FROM 1967 TO 1969: INCIDENCE, EPIDEMIOLOGY, UNUSUAL NEUROLOGICAL TYPES. *(Fr.)* Fleurette, J. (Hosp. Eduoard Herriot, Lyon, France), S. Chassignol, P. Monnet, P. Moreau, E. Hartemann, M. F. Cotte and M. David. *Pediatrie* 25(3):282-290, 1970.

6167 THE APPLICATION OF A BISMUTH-SORBITOL COMBINATION IN GASTROENTEROLOGY. *(Fr.)* Rumeau, P. (no affil). *Gazz Med France* 77(12):2748-2750, 1970.

6168 USE OF LC9066 IN THE TREATMENT OF CERTAIN FUNCTIONAL GASTROINTESTINAL DISORDERS. *(Fr.)* Ribet, A. (Hosp. Purpan, Toulouse, France) and M. Duffant. *Rev Med Toulouse* 6(supp 5):695-700, 1970.

6169 RECENT CASES OF DYSENTERY IN INFANTS. *(Jap.)* Tanaka, F. (Shidehara Metro. Hosp., Toho, Japan), T. Kato and S. Nakazawa. *J Showa Med Ass* 29(11):14-18, 1970.

6170 EFFECT OF MESENTERIC ARTERY OCCLUSION ON PERISTALSIS IN THE DOG. *(Jap.)* Yamamoto, M. (Tohoku U. Sch. Med., Sendai, Japan). *Folia Pharmacol Jap* 65(6):586-591, 1969.

6171 DISORDERS OF THE MYENTERIC PLEXUS. *(E.)* Smith, B. (no affil). *Gut* 11(3):271-274, 1970.

6172 GASTROENTERITIS OF INFANTS IN TWO CANADIAN COMMUNITIES. *(E.)* McLean, D. M. (Dept. Med. Microbiol., U. British Columbia, Vancouver, Canada), K. Chatiyanonda, S. R. Ladyman and J. E. Brownlee. *Canad Med Ass J* 102(12):1247-1251, 1970.

6173 SPONTANEOUS EVISCERATION THROUGH A SUTURE SINUS. *(E.)* Fisher, W. J. (Albert Einstein Coll. Med., Bronx, N. Y.) and S. Tolins. *Amer J Surg* 119(6):749-751, 1970.

6174 SALMONELLOSIS IN SOUTH WALES. *(E.)* Harvey R. W. S. (Publ. Hlth. Lab., Cardiff, Wales and T. H. Price. *Publ Hlth* 84(4):183-190, 1970.

6175 ANTITOXIC IMMUNITY IN EXPERIMENTAL CHOLERA OBSERVATIONS WITH PURIFIED ANTIGENS AND THE RAT FOOT EDEMA MODEL. *(E.)* Finkelstein, R. A. (U. Texas Southwestern Med. Sch., Dallas) and R. C. Hollingsworth. *Infect Immun* 1(5):468-473, 1970.

6176 ENTEROVIRUSES IN RURAL FAMILIES AND THEIR DOMESTIC ANIMALS. *(E.)* Grew, N. (Louisian St. U., Internat. Ctr. Med. Res., San Jose, Costa Rica), R. S. Gohd, J. Arguedas and J. I. Kato. *Amer J Epidem* 91(5):518-526, 1970.

6177 MESENTERIC CYSTS. *(E.)* Hardin, W. J. (U. Mississippi Med. Ctr., Jackson) and J. D. Hardy. *Amer J Surg* 119(6):640-645, 1970.

6178 MEMBRANOUS OBSTRUCTION OF THE HEPATIC PORTION OF THE INFERIOR VENA CAVA: SURGICAL CORRECTION AND ETIOLOGICAL STUDY. *(E.)* Hirooka, M. (Kyoto U. Med. Sch., Japan) and C. Kimura. *Arch Surg* 100(6):656-663, 1970.

6179 NUTRITIONAL MARASMUS. *(E.)* Bai, K. I. (S. V. Med. Coll., Tirupati, India). *Indian Pract* 23(1):17-22, 1970.

6180 CHOLERA IN CHILDREN. *(E.)* Jaffari, S. M. H. (Osmania Med. Coll., Hyderabad, India) and S. R. Saxena. *Indian Pract* 23(1):31-35, 1970.

6181 STUDY OF *VIBRIO PARAHAEMOLYTICUS* FROM CASES OF DIARRHEA IN CALCUTTA. *(E.)* Chatterjee, B. D. (Sch. Trop. Med., Calcutta, India K. N. Neogy and S. L. Gorbach. *Indian J Med Res* 58(2):234-238, 1970.

6182 REVERSED INTESTINAL SEGMENTS IN YOUNG PUPPIES WITH MASSIVE INTESTINAL RESECTIONS. *(E.)* Priebe, C. J., Jr. (Coll. Physicians Surgeons Columbia U., New York, N. Y.). *J Pediat Surg* 5(2):215-223, 1970.

6183 SIZE DETERMINATION OF HOG CHOLERA VIRUS B MEANS OF GAMMA RAYS INACTIVATION. *(E.)* Titoli, F. (Inst. Exper. Anim. Prophylaxis, Perugia Italy), A. Begliomini, L. Gialetti and V. Torlone. *Life Sci* 9(10):597-600, 1970.

6184 ASSESSMENT AND SIGNIFICANCE OF BACTERIAL OVERGROWTH IN THE SMALL BOWEL. *(E.)* Hamilton, J. D. (St. Bartholomew's Hosp., London, England), N. H. Dyer, A. M. Dawson, F. W. O'Grady, A. Vince, J. C. B. Fenton and D. L. Mollin. *Quart J Med* 39(154):265-285, 1970.

185 RUPTURE OF THE DIAPHRAGM AFTER BLUNT TRAUMA. *(E.)* Andrus, C. H. (U. Rochester Sch. Med. ent., New York) and J. H. Morton. *Amer J Surg* 19(6):686-693, 1970.

186 GENERALIZED JUVENILE GASTROINTESTINAL POLYPOSIS: A HEREDITARY SYNDROME. *(E.)* achatello, C. R. (Roswell Park Mem. Inst., Buffalo, . Y.), J. W. Pickren and J. T. Grace, Jr. *Gastro- nterology* 58(5):699-708, 1970.

187 GASTROENTEROLOGY AND HEART DISEASE. *(Dut.)* Brys, R. (Acad. Hosp., Ghent, Belgium). *Geneesk* 26(9):452-454, 1970.

188 EXTERNAL INJURY OF THE ABDOMINAL AREA (ESPECIALLY INJURY OF THE LIVER). *(Jap.)* udo, M. (Saiseikai Kanagawa Prefect. Hosp., Japan). *Jap Med Ass* 63(3):438-448, 1970.

189 CLINICAL SIGNIFICANCE OF CONNECTIONS OF ABDOMINAL FATTY TISSUE: CELIAC ARTERY, ND SUPERIOR AND INFERIOR MESENTERIC ARTERY. *(Dut.)* atry, J. (Acad. Hosp. St. Rafael, Louvain, Belgium), . Bossaert, D. Collen and M. Verstraete. *Acta Clin elg* 24(5):299-315, 1969.

190 ALTERATION OF PEYER'S PATCHES IN RATS AFTER INTERNAL IRRADIATION WITH INCORPORATED ERIUM^{144}. *(Rus.)* Tokin, I. B. (Inst. Radiation ygiene, Leningrad, USSR) and T. V. Ponomareva. *rkh Anat* 58(4):45-53, 1970.

191 DEVELOPMENT OF DYSBACTERIOSIS IN THE INTESTINES AND OTHER ORGANS OF SUBJECTS CCUPATIONALLY EXPOSED TO ANTIBIOTICS (STREPTOMYCIN, ETRACYCLINE, PENICILLIN). *(Rus.)* Vilshanskaya, . L. (no affil) and G. B. Shteinberg. *Gig Tr Prof bol* 14(5):25-28, 1970.

192 LYMPHOGRANULOMATOSIS OF THE GASTROINTESTINAL TRACT: MORPHOLOGY. *(Rus.)* Savchenko, . D. (Moscow Radiology Inst., USSR) and T. K. itchtomova-Osipenkova. *Klin Med* 51(3):49-54, 1970.

193 ACUTE ULCERS OF THE GASTROINTESTINAL TRACT. *(Rus.)* Smolnikov, L. A. (Arkhangelsk Med. st., USSR) and V. S. Djukov. *Vestn Khir* 4(1):65-68, 1970.

194 MOTOR ACTIVITY OF THE SMALL INTESTINE IN CHRONIC ENTERITIS. *(Rus.)* Linevsky, Yu. V. onetsk, USSR). *Vrach Delo* (3):27-30, 1970.

95 TREATMENT OF PATIENTS WITH VARIOUS DISEASES OF THE GASTROINTESTINAL TRACT. *(Rus.)* ishchuk, V. F. (Berezhany, USSR), A. P. Pliskevich d V. N. Tkach. *Vrach Delo* (3):44-47, 1970.

6196 DELAYED DAMAGE INDUCED BY THOROTRAST PROCEDURES: INTESTINAL STENOSIS DUE TO SALPINGOGRAPHY. *(Ger.)* Moser, R. (Canton Hosp., Aarau, Switzerland), J. Laissue and W. Muller. *Schweiz Med Wschr* 100(22):940-943, 1970.

6197 DIVERTICULI AND DIVERTICULITIS OF THE GASTROINTESTINAL TRACT. *(Ger.)* Schriefers, K. H. (Surg. U. Clin., Bonn, Germany) and B. Mauer. *Chirurg* 41(6):241-246, 1970.

6198 THE GASTROCARDIAC SYNDROME. *(Ger.)* Schneider, K. W. (Med. U. Clin., Wurzburg, Germany). *Munchen Med Wschr* 112(17):765-776, 1970.

6199 STUDIES ON SERUM ALBUMIN DYNAMIC METABOLISM IN DIGESTIVE DISEASES. *(Jap.)* Asakura, H. (Sch. Med., Keio U., Japan) and S. Matsuzaki. *J Keio Med Soc* 47(2):143-153, 1970.

6200 TYPHOID FEVER. *(Fr.)* Woehrle, R. (no affil). *Gazz Med France* 77(12):2709-2721, 1970.

6201 PNEUMATOSIS CYSTOIDES INTESTINALIS. *(Fr.)* Seror, J. (CHU Strasbourg, France), B. Mentouri, P. Roche, H. Issaad and K. Daoud. *Arch Franc Mal Appar Dig* 59(6):335-352, 1970.

6202 CONTROLLED EXPERIMENTS WITH A NEW LOW-LACTOSE MILK PRODUCT, ZYMIL. *(It.)* Gimelli, F. (Gaslini Inst., Genoa, Italy). *Minerva Pediat* 22(11):533-555, 1970.

6203 LIPOFUSCINOSIS OF INTRAABDOMINAL LYMPH NODES. *(Sw.)* Zettergren, L. (Path. Inst., U. Goteborg, Sweden). *Nord Med* 83(22):697-699, 1970.

6204 PSYCHOSOMATIC ASPECTS OF GASTROENTEROLOGY. *(Dut.)* Pennoit, H. (Acad. Hosp., Ghent, Belgium). *T Geneesk* 26(9):455-460, 1970.

6205 SURGICAL MANAGEMENT OF GASTROSCHISIS. *(E.)* Bryant, L. R. (U. Kentucky Med. Ctr., Lexington), R. A. Beargie, R. H. Segnitz, J. K. Trinkle and W. O. Griffen, Jr. *Ann Surg* 171(5):752-763, 1970.

6206 ABDOMINAL DRAINS: THEIR ROLE AS A SOURCE OF INFECTION FOLLOWING SPLENECTOMY. *(E.)* Cerise, E. J. (Tulane U. Med. Sch., New Orleans, La.), W. A. Pierce and D. L. Diamond. *Ann Surg* 171(5):764-769, 1970.

6207 CHYLOUS ASCITES SECONDARY TO INGUINAL HERNIA IN AN INFANT. *(E.)* Santoro, E. (St. Vincent Hosp., Med. Ctr., New York, N. Y.) and A. Shaw. *Amer J Surg* 119(5):579-580, 1970.

GENERAL

6208 MANAGEMENT OF CONGENITAL ATRESIA OF THE INTESTINE. *(E.)* Santulli, T. V. (Coll. Physicians Surgeons, Columbia U., New York, N. Y.), C. C. Chen and J. N. Schullinger. *Amer J Surg* 119(5):542-547, 1970.

6209 MESENTERIC CYSTS: A REVIEW AND REPORT OF FOUR CASES. *(E.)* Sanchez, R. E. (Wadsworth Hosp., VA Ctr., Los Angeles, Calif.), H. E. Gordon and E. Passaro, Jr. *Amer Surg* 36(6):378-382, 1970.

6210 FIVE YEAR HISTORY OF SURGICALLY TREATED ABDOMINAL AORTIC ANEURYSMS. *(E.)* Gardner, R. J. (West Virginia U. Med. Ctr., Morgantown), J. R. Lancaster, T. J. Tarnay, H. E. Warden and R. A. Currie. *Surg Gynec Obstet* 130(6):981-987, 1970.

6211 INBORN ERRORS OF MUCOPOLYSACCHARIDE METABOLISM. *(E.)* Neufeld, E. F. (Natl. Inst. Arthritis Metab. Dis., Bethesda, Md.) and J. C. Fratantoni. *Science* 169(3941):141-146, 1970.

6212 RECURRENT ABDOMINAL PAIN IN CHILDHOOD. *(E.)* Stone, R. T. (Child. Hosp. Philadelphia, Pa.) and G. J. Barbera. *Pediatrics* 45(5):732-738, 1970.

6213 BUDD-CHIARI SYNDROME CAUSED BY A WEB AS A RESULT OF VISCERAL THROMBOPHLEBITIS MIGRANS: REPORT OF A CASE. *(E.)* Volpe, J. A. (Letterman Gen. Hosp., San Francisco, Calif.), J. J. Bergin and E. L. Overholt. *Amer J Dig Dis* 15(5):469-476, 1970.

6214 EFFECTS OF BROCRESINE ON ZOLLINGER-ELLISON SYNDROME: REPORT OF 2 CASES. *(E.)* Levine, R. J. (Yale U. Sch. Med., New Have, Conn.), A. B. Vaidya, D. J. C. Shearman, S. M. Levine and T. Hersh. *Amer J Dig Dis* 15(5):477-484, 1970.

6215 INCIDENCE OF PROTEIN DEFICIENCY IN RELATION TO DIFFERENT DIETS IN INDIA. *(E.)* Sukhatme, P. V. (Food Agric. Org., Rome, Italy). *Brit J Nutr* 24(2):477-487, 1970.

6216 A CASE OF ABDOMINAL SITUS INVERSUS WITH NON-ROTATION AND CHOLELITHIASIS. *(E.)* Wike, C. C. (Med. Coll. Georgia, Augusta), B. F. Caldwell and R. A. Parrish. *Amer Surg* 36(6):346-348, 1970.

6217 ASCITES. *(E.)* Friesen, J. E. (U. Toronto, Ontario, Canada). *Univ Toronto Med J* 47(4):131-134, 1970.

6218 CHYLOUS ASCITES: NEWER INSIGHTS AND MANY REMAINING ENIGMAS. *(E.)* Lesser, G. T. (Lenox Hill Hosp., New York, N. Y.), M. S. Bruno and K. Enselberg. *Arch Intern Med* 125(6):1073-1077, 1970.

6219 INTESTINAL BLEEDING IN INFANTS AND CHILDREN—SURGICAL VIEW. *(Ger.)* Popp, W. (Dist. Hosp. Karl Marx St., Germany) and G. Amelung. *Zbl Chir* 457-465, 1970.

6220 PHENOBARBITAL FOR NEONATAL JAUNDICE. *(E.)* Behrman, R. E. (U. Illinois Coll. Med., Chicago) and D. E. Fisher. *J Pediat* 76(6):945-948, 1970.

6221 IATROGENOUS ABDOMINAL ACTIVITIES. *(E.)* Cantor, M. O. (Detroit, Mich.). *J Abdom Surg* 12(6):84-91, 1970.

6222 AUTOIMMUNE DISEASES OF THE GASTROINTESTINAL TRACT AND LIVER. *(Ger.)* Warnatz, H. (U. Hosp. Erlangen-Nuremberg, Germany). *Med Welt* 21(22): 1025-1029, 1970.

6223 POSTOPERATIVE SERUM ENZYME CHANGES FOLLOWING ABDOMINAL SURGERY. *(Ger.)* Zelder, O. (Surg. U. Clin. Marburg, Germany). *Chirurg* 41(6): 278-280, 1970.

6224 FAT BALANCE STUDIES IN MARASMUS. *(E.)* Teotia, M. (K. G. Med. Coll., Lucknow, India), S. P. S. Teotia and N. L. Sharma. *Indian J Med Res* 57(12):2240-2245, 1969.

6225 COMPARISON OF THE RESULTS OF INTERNAL ILIAC AND UTERINE ARTERY LIGATION IN WERTHEIM HYSTERECTOMY AND PELVIC LYMPHADENECTOMY. *(E.)* Lash, A. F. (Stritch Med. Sch., Loyola U., Chicago, Ill.) and R. H. MacNorland. *Int Surg* 53(5):344-347, 1970.

6226 PRE- AND POSTJUNCTIONAL SUPERSENSITIVITY OF THE MESENTERIC ARTERY PREPARATION FROM NORMOTENSIVE AND HYPERTENSIVE RATS. *(E.)* Haeusler, G. (Dept. Exp. Med., Hoffman-La Roche Co., Basel, Switzerland) and W. Haefely. *Naunyn Schmiedeberg Arch Pharmakol* 266(1):18-33, 1970.

6227 MALNUTRITION IN INFANCY: CHANGES IN MUSCLE AND ADIPOSE TISSUE BEFORE AND AFTER REHABILITATION. *(E.)* Cheek, D. B. (Johns Hopkins Hosp Baltimore, Md.), D. E. Hill, A. Cordano and G. G. Graham. *Pediat Res* 4(2):135-144, 1970.

6228 THE RELATIONSHIP OF GALACTOSE-1-PHOSPHATE ACCUMULATION AND URIDYL TRANSFERASE ACTIVITY TO THE DIFFERENTIAL GALACTOSE TOXICITY IN MALE AN FEMALE CHICKS. *(E.)* Mayes, J. S. (U. Oklahoma Med. Ctr., Oklahoma City), L. R. Miller and F. K. Myers. *Biochem Biophys Res Commun* 39(4):661-665, 1970.

6229 CHILDHOOD ABDOMINAL LYMPHOMA IN ISRAEL. *(E* Hulu, N. (Tel Aviv U. Med. Sch., Israel), B. Ramot and W. Sheehan. *Isreal J Med Sci* 6(2):246-251, 1970.

230 PERSISTENCE OF AN *ESCHERICHIA COLI-SHIGELLA FLEXNERI* HYBRID IN THE INTESTINAL TRACT OF *ICACA MULATTA. (E.)* Wynne, E. S. (USAF Sch. Aero-pace Med., Brooks AFB, Texas), D. M. Henrikson and T. Daye, Jr. *App Microbiol* 19(5):731-733, 1970.

31 CHOLERA-LIKE SYNDROME AND PANCREATIC ISLET CELL TUMORS. *(E.)* Cerda, J. J. (U. ennsylvania Med. Sch., Philadelphia), E. C. affensperger and H. M. Rawnsley. *Med Clin N Amer* (3):567-575, 1970.

32 MESENTERIC ISCHEMIC DISEASE. *(E.)* Edwards, A. (St. Bartholomew's Hosp., London, gland). *St Bartholomews Hosp J* 78(5):161-167, 1970.

33 THE PROPHYLACTIC PORTACAVAL SHUNT: AN EXAMINATION OF "CLINICAL JUDGMENT." *(E.)* esnick, R. H. (Boston, Mass.). *Med Times* 98(6):93-3, 1970.

34 THE MANAGEMENT OF INTESTINAL OBSTRUCTION IN THE ADULT. *(E.)* Kirk, R. M. (Hampstead Gen. sp., England). *Ann Roy Coll Surg England* 46(3): 7-158, 1970.

35 MESENTERIC VENOUS THROMBOSIS ASSOCIATED WITH ORAL CONTRACEPTIVES. *(E.)* Civetta, J. M. SAF Med. Ctr., Keesler AFB, Miss.) and M. Kolodny. *stroenterology* 58(5):713-716, 1970.

36 MODE OF ACTION OF CEOLAT AND CEOLAT COMPOUNDS: A CLINICAL RADIOLOGICAL STUDY. *er.)* Lenhart, A. (no affil). *Z Ther* 8(3):142-148, 70.

37 SYMPTOMS OF DYSPEPSIA AND THE MANAGEMENT OF FUNCTIONAL DYSPEPSIA. *(Ger.)* Seewann, L. (Med. U. Clin. Graz, Austria) and R. Heschl. *in Med Wschr* 120(21):386-388, 1970.

38 CAUSES OF MASSIVE HEMORRHAGE OF UPPER GASTROINTESTINAL TRACT. *(Ger.)* Klems, H. eglitz Clin., Free U. Berlin, Germany) and R. ing. *Zbl Chir* 95(13):402-412, 1970.

39 PSEUDOMYXOMA PERITONEI THROUGH A BLUNT ABDOMINAL TRAUMA. *(Ger.)* Schwarz, R. ath. Anat. Inst. U. Graz, Germany). *Zbl Chir* (10):330-333, 1970.

40 THE ELIMINATION OF VARIOUS STEROID HORMONES, VANILLYLMANDELIC ACID AND LACTIC D IN NEWBORN INFANTS WITH DIABETIC MOTHERS. *(Ger.)* bylova, H. (Inst. Mother Child Care, Prague echoslovakia) and J. Herzmann. *Arch Kinderheilk* (3):282-291, 1970.

6241 PURIFIED Vi-ANTIGEN PREPARATIONS IN TYPHOID FEVER THERAPY. *(Rus.)* Shneider, V. P. (Vitebsk Med. Inst., USSR). *Sovet Med* 33(3):126-127, 1970.

6242 PROGRESS IN THERAPEUTIC GASTROENTEROLOGY-ORGANIC OR FUNCTIONAL. *(Fr.)* Geoffroy, H. (C. H. U. Reims, France), P. Coudoux, C. Maffioli, P. Chardon and C. Behar. *Maroc Med* 50(534):249-258, 1970.

6243 THE ESOPHAGUS IN SCLERODERMA. *(Fr.)* Leymarios, J. (no affil). *Vie Med* 51(15): 2261-2269, 1970.

6244 GASTROSCHISIS WITH ANTENATAL EVISCERATION: TREATMENT BY STAGED REPAIR USING REINFORCED SILICONE ELASTOMER SHEETING. *(E.)* Widmann, W. D. (U. S. Army Gen. Hosp., Frankfurt, Germany). *Amer J Dis Child* 119(6):478-480, 1970.

6245 GASTROINTESTINAL NEUROFIBROMATOSIS: A RARE CAUSE OF CHRONIC ANEMIA. *(E.)* Fitzgerald, J. F. (Indiana U. Sch. Med., Indianapolis) and P. T. Buntin. *Amer J Dis Child* 119(6):521-523, 1970.

6246 INTESTINAL ANTISEPSIS. *(E.)* Cohn, I., Jr. (Louisiana St. U. Sch. Med., New Orleans). *Surg Gynec Obstet* 130(6):1106-1014, 1970.

6247 EXPERIMENTAL DIARRHEA: SALMONELLA ENTEROCOLITIS IN THE RAT. *(E.)* Maenza, R. M. (U. Connecticut Sch. Med., Hartford), D. W. Powell, G. R. Plotkin, S. B. Formal, H. R. Jervis and H. Sprinz. *J Infect Dis* 121(5):475-485, 1970.

6248 AUTORADIOGRAPHIC AND HISTOCHEMICAL STUDIES ON THE DEVELOPMENT OF THE SO-CALLED UREMIC ENTEROCOLITIS. *(Ger.)* Castrup, H. J. (Path. Inst. U. Cologne, Germany), U. Lohrs and M. Eder. *Virchow Arch Path Anat* 349(4):357-367, 1970.

6249 EPIDEMIC SALMONELLA GASTROENTERITIS DUE TO CONTAMINATED IMITATION ICE CREAM. *(E.)* Armstrong, R. W. (Palo Alto Slanford Hosp., Palo Alto, Calif.), T. Fodor, G. T. Curlin, A. B. Cohen, G. K. Morris, W. T. Martin and J. Feldman. *Amer J Epidem* 91(3):300-307, 1970.

o P:Secr:Stom (5545)
o Diagproc (5648)(5668)(5684)(5694)(5696)(5712)(5716)(5725)(5729)
o D:Stomduo (5781)(5801)
o D:Stomduo:Peptulc (5833)
o D:S.Intest (5864)(5870)(5874)(5875)
o D:S.Intest:Regent (5883)
o D:S.Intest:Malabs (5891)(5892)(6202)
o D:L.Intest (5903)(5931)(5937)(5945)
o D:Pancreas (5958)
o D:Livbil (5981)(5983)(5988)(6003)(6008)(6014)(6041)(6042)(6051)
o D:Livbil:A.Nonv.Hep (6073)
o D:Livbil:Cirrh (6125)
o D:Livbil:Gallb (6153)

GENERAL

Parasitology

6250 PATHOGENESIS OF PERFORATING BILIARY PERITONITIS IN OPISTHORCHOSIS. *(Rus.)* Zubov, N. A. (Sverdlovsk Med. Inst., USSR). *Sovet Med* 33(3):122-125, 1970.

6251 A DESCRIPTION OF *PSEUDOPROLEPTUS LAMYI* N. SP., A NEMATODE PARASITE OF THE FISH, *NOTOPTERUS CHITALA* H. B. OF SOUTH VIETNAM. *(Fr.)* Le-Van-Hoa (Inst. Pasteur, Saigon, Vietnam) and Bui-Thi Lien-Huong. *Bull Soc Path Exot* 62(6):1106-1111, 1969.

6252 BILHARZIASIS AND THE LIVER. *(Fr.)* Beylot, J. (no affil). *France Med* 33(2):87-90, 1970.

6253 CLINICAL ASPECTS, DIAGNOSIS AND TREATMENT OF AMEBIC DYSENTRY. *(Fr.)* Auvergnat, J. C. (no affil). *Rev Med Toulouse* 6(supp 2):151-180, 1970.

6254 RESEARCH IN BLUE CYSTS OF *LAMBLIA INTESTINALIS*. *(Fr.)* Dancesco, P. (Inst. Dr. I. Cantacuzino, Bucarest, Rumania), J. Tintareanu, J. Stefanesco, P. Solomon and S. Radulesco. *Maroc Med* 50(534):247-248, 1970.

6255 ASCARIASIS: BELIEFS AND PRACTICES OF A RURAL MALAY COMMUNITY. *(E.)* Chen, P. C. Y. (Fac. Med. U. Malaya). *Med J Malaya* 24(3):176-182, 1970.

6256 *ENTAMOEBA HISTOLYTICA* AND *DIENTAMOEBA FRAGILIS* AND THE SYNDROME OF CHRONIC RECURRENT INTESTINAL AMEBIASIS IN ISRAEL. *(E.)* Steinitz, H. (Gastroent. Clin., Kupath Cholim Zemenhof, Tel-Aviv, Israel), B. Talis and B. Stein. *Digestion* 3(3):146-153, 1970.

6257 THE INCIDENCE AND CLINICAL PATTERN OF GIARDIASIS IN CHILDREN OF MADURAI. *(E.)* Krishnamurthy, K. A. (Madurai Med. Coll., India). *Indian Pract* 23(2):141-143, 1970.

6258 ACTION OF METRONIDAZOLE (FLAGYL) ON *GIARDIA INTESTINALIS*: A CYTOCHEMICAL STUDY. *(E.)* Mukherjea, A. K. (Sch. Trop. Med., Calcutta, India). *Indian Pract* 23(2):173-176, 1970.

6259 GASTROINTESTINAL PARASITES OF WILD FALLOW DEER (*DAMA DAMA* L.). *(E.)* Batty, A. F. (Epping, Essex, England) and D. I. Chapman. *J Helminth* 44(1):57-61, 1970.

6260 PERFORMANCE IN CHICKENS AND TURKEYS OF CHICKEN-ADAPTED *HETERAKIS GALLINARUM*. *(E.)* Lund, E. E. (Beltsville Parasit. Lab., Md.), A. M. Chute and S. L. Myers. *J Helminth* 44(1):97-106, 1970.

6261 A SHORT NOTE ON GIARDIASIS. *(E.)* Prakash, O. (All-India Inst. Med. Sci., New Delhi). *Indian Pract* 23(2):123-125, 1970.

6262 ADULT GIARDIASIS: INCIDENCE AND CLINICAL FEATURES. *(E.)* Antia, F. P. (B. Y. L. Nair Hosp., Bombay, India), H. G. Desai and A. V. Borkar. *Indian Pract* 23(2):127-129, 1970.

6263 GIARDIASIS IN CHILDREN: SYMPTOMATOLOGY. *(E.)* Nair, K. P. B. (Trichur, India). *Indian Pract* 23(2):145-154, 1970.

6264 GIARDIASIS IN RELATION TO DIARRHEAL DISORDERS IN CHILDREN. *(E.)* Mathai, N. M. (Med Coll. Hosp., Calicut, India). *Indian Pract* 23(2): 155-159, 1970.

6265 CHLORHYDROXYQUINOLIN (HALQUINOL) IN GIARDIASIS. *(E.)* Pimparkar, B. D. (Seth G. S. Med. Coll., Bombay, India), H. Y. Pathak, U. M. Dond
and N. T. Bhivankar. *Indian Pract* 23(2):165-170, 19

6266 GIARDIASIS—CLINICAL FEATURES AND ITS TREA
MENT WITH METRONIDAZOLE. *(E.)* Sardesal, H. V. (B. J. Med. Coll., Poona, India). *Indian Prac*
23(2):171, 1970.

6267 PNEUMATOSIS INTESTINALIS: A CASE REPORT WITH A BRIEF LITERATURE REVIEW. *(E.)* Kutty, M. K. (Inst. Med. Res., Kuala Lumpur, Malaysia), B. Nambiar and K. Bau. *Med J Malaya* 24(3): 227-230, 1970.

6268 ANTIGENIC ANALYSIS OF THE DEVELOPMENTAL STAGES OF *ASCARIS SUUM*: II. HOST COMPONENTS. *(E.)* Williams, J. F. (Office Sanit. Panamer
ca, Buenos Aires, Argentina) and E. J. L. Soulsby. *Exp Parasit* 27(3):362-367, 1970.

6269 SUPPRESSION OF THE HEPATOSPLENIC *SCHISTOSOMIASIS MANSONI* IN MICE BY NICARBAZIN, A
DRUG THAT INHIBITS EGG PRODUCTION BY SCHISTOSOMES. *(E.)* Warren, K. S. (Case Western Reserve U., Sch. Med., Cleveland, Ohio). *J Infect Dis* 121(5):514-52
1970.

6270 INTERFERENCE OF HEPATIC DRUG METABOLISM I
PLASMODIUM BERGHEI-INFECTED MICE AND ITS THERAPEUTIC MODIFICATION: A STUDY OF HEXOBARBITAL SLEEPING TIME AND PHENOBARBITAL-INDUCED LIVER STIMU
LATION. *(E.)* Einheber, A. (Walter Reed Army Inst. Res., Washington, D. C.), R. E. Wren and C. J. Klob
kowski. *Exp Parasit* 27(3):424-443, 1970.

6271 DIAGNOSTIC AND PROGNOSTIC VALUE OF CALCI
CATION IN ALVEOLAR ECHINOCOCCOSIS OF THE LIVER. *(Rus.)* Pribylovsky, S. L. (Altai Med. Inst
Barnaul, U.S.S.R.), R. Ya. Sheffer and N. P. Krylo
Vestn Rentgen Radiol 45(1):29-35, 1970.

272 AMEBIASIS IN CAPE TOWN CHILDREN. *(E.)*
Watson, C. E. (Red Cross War Mem. Child.
osp., Cape Town, South Africa), P. M. Leary and
. S. Hartley. *S Afr Med J* 44(14):419-421, 1970.

273 IMMUNOLOGICAL RESPONSE OF THE MAMMALIAN
HOST AGAINST TAPEWORM INFECTIONS: IX.
RANSFER VIA COLOSTRUM OF IMMUNITY TO *TAENIA HYDA-*
IGENA. (E.) Gemmell, M. A. (U. Otago Med. Sch.,
nedin, New Zealand), S. K. Blundell-Hassell and
N. Macnamara. *Exp Parasit* 26(1):52-57, 1970.

74 SONNE DYSENTERY IN NEW ZEALAND. *(E.)*
Markham, N. P. (U. Otago Med. Sch.,
nedin, New Zealand) and H. C. W. Schott. *New Zeal*
d J 70(446):15-20, 1970.

75 INTESTINAL ABSORPTION IN MALARIA: I. THE
ABSORPTION OF AN AMINO ACID (AIB-1-^{14}C)
ROSS THE GUT MEMBRANE IN NORMAL AND IN *PLASMODIUM*
OWLESI-INFECTED MONKEYS. *(E.)* Migasena, P.
iverpool Sch. Trop. Med., England) and B. G.
egraith. *Ann Trop Med Parasit* 63(4):439-448,
70.

76 NUTRITION AND PARASITISM AMONG RURAL PRE-
SCHOOL CHILDREN IN SOUTH CAROLINA. *(E.)*
rter, J. P. (Dept. Pediat., Vanderbilt U., Nash-
lle, Tenn.), R. Vanderzwaag, W. J. Darby, E. J.
ase, F. H. Lauter, B. W. Dudley, E. G. High, D. J.
ight and T. Murphree. *J Nat Med Ass* 62(3):181-191,
70.

77 FURTHER OBSERVATIONS ON BILHARZIA CONTROL
IN THE EASTERN TRANSVAAL. *(E.)* Pitchford,
J. (S. African Med. Res. Counc., Nelspruit, E.
ansvaal, Union of South Africa). *S Afr Med J*
(16):475-477, 1970.

6278 A NEW ANCYLOSTOMATIDAE, *ARTHROSTOMA GUILHONI* N. SP., PARASITIC NEMATODE OF CARNIVORES, *ARTICTIS BINTURONG* OF SOUTH VIETNAM. *(Fr.)* Le-Van-Hoa (Inst. Pasteur, Saigon, Vietnam). *Bull Soc Path Exot* 62(6):1101-1106, 1969.

6279 IMMUNOLOGICAL RESPONSE OF THE MAMMALIAN HOST AGAINST TAPEWORM INFECTIONS: X. IMMUNIZATION OF SHEEP AGAINST *TAENIA HYDATIGENA* AND *T. OVIS* WITH CHEMICALLY OR PHYSICALLY TREATED EMBRYOS. *(E.)* Gemmell, M. A. (U. Otago Med. Sch., Dunedin, New Zealand). *Exp Parasit* 26(1):58-66, 1969.

6280 FUNCTIONAL AND MORPHOLOGICAL STATUS OF SMALL BOWEL IN GIARDIASIS. *(E.)* Misra, R. C. (Maulana Azad Med. Coll., New Delhi, India). *Indian Pract* 23(2):160-164, 1970.

6281 PARATHYROID FUNCTION IN BILHARZIAL (SCHISTOSOMAL) HEPATIC FIBROSIS. *(E.)* Ghanem, M. H. (Fac. Med., Alexandria U., United Arab Republic), F. K. Guirgis and M. El-Sawy. *J Trop Med Hyg* 73(5): 126-131, 1970.

6282 ON *EUPARADISTOMUM PEARSONI* N.SP. (TREMATODA: DICROCOELIIDAE) FROM THE GALL BLADDER OF THE DOMESTIC CAT IN PAPUA. *(E.)* Talbot, N. (Vetr. Lab., Kila Kila, Port Moresby, Papua, New Guinea). *J Helminth* 44(1):89-96, 1970.

○ Diagproc (5675)(5703)

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE
    Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON
    Cancer, Polyps, Radiological Detection (0188)*

RECTUM
    Cancer, Polyps, Precancerous (0188)*

CANCER
    Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS
    Radiology, Cancer, Large Intestine (0188)*

umbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

BELEV, G.I.
5651*
BRAHAM, J.P.
6064
BRAMOVITZ, A.S.
5459, 5460
CKERMAN, N.B.
5798
CKROYD, F.W.
6047
DAM, J.
5641
DAMS, J.T.
5792
DECHY-BENKOEL, L.
6051
DRIAENSSENS, K.
6033
GARKOV, V.A.
6067
GEICHEV, V.A.
5842
GRANOVICH, R.M.
5721
HMAD, S.
5499
RENS, H.P.
5940
KAT, B.K.
5867
AISHI, K.
5875
ESSON, B.
5560*
AMI, T.
5738
BOT, G.
5880
EMAN-GAVOTTI, C.
5765*
EXANDER, H.C.
5956
LEN, J.R.
6058*
LRED, J.B.
5598
NOR, P.C.
5784
PEROVICH, B.I.
5703
PERT, E.
6065
BLER, J.
5789
BROISE-THOMAS, P.
5675
ELUNG, G.
6219
IN, P.H.
5965
URE, B.O.
5530*
AND, S.S.
5943
DREICHIN, M.A.
5726
DRES, M.R., JR.
5656*

ANDRUS, C.H.
6185
ANONYMOUS
5673, 5884, 5919, 6110
ANSHELEVICH, Y.V.
5546
ANTIA, F.P.
5678, 6262
ANTOKHINA, L.I.
5725
APROSINA, Z.G.
6010
ARGUEDAS, J.
6176
ARIYOSHI, T.
6056*
ARMAN, E.
5779
ARMSTRONG, R.W.
6249
ARNOLD, D.J.
6135
ARRANTS, J.E.
5746
ARRIAGA, R.
5614*
ARRIGONI, E.
5570*
ARVIDSON, G.
5560*
ASAKAWA, H.
5786
ASAKURA, H.
6199
ASATOOR, A.M.
5475*
ASQUITH, P.
5885*
ASTAKHOVA, A.M.
6096
ATHERTON, R.M.
5567*
ATKINS, C.
5564*
AUBRY, L.
5575*
AUVERGNAT, J.C.
6253
AXELROD, J.
5591*
BABICHEV, S.I.
5710
BABIOR, B.M.
5424*
BABUT, J.M.
6148
BACOLLA, D.
5719
BADIA, G.
6012
BADRE-WAGGHIRI
5738
BAGLEY, D.H., JR.
5505
BAI, K.I.
6179

BAILEY, I.
6073
BAIROV, G.A.
6083
BAKER, S.J.
5894
BAKER, W.N.W.
5950
BALA, YU.M.
6013
BALAZS, T.
5601
BALDUS, W.P.
6126
BALLARD, F.J.
5572*
BALLINGER, W.F., II
5831
BANCONS, J.
6019, 6119
BANDOH, J.K.
5475*
BANERJEE, D.
5626
BARAN, D.T.
5450
BARANOV, Y.F.
5709
BARASHKOVA, G.M.
5526
BARBERA, G.J.
6212
BARBERO, G.J.
5929
BARBIER, F.
5496*
BARIL, E.F.
5429*
BARLATTANI, M.
5984*
BARLETTA, M.A.
5501
BARNARDO, D.E.
6126
BARON, J.H.
5655*
BARR, R.
5432*
BARRERAS, R.F.
5768
BARTHE, J.
5608
BASHAND, G.H.
6134
BASQUE, G.J.
5743
BATES, H.R., JR.
5606
BATES, T.R.
5486*
BATTISTINI, V.
5563*
BATTY, A.F.
6259
BAU, K.
6267
BAUDHUIN, P.
5446

BAUER, B.G.
5763*
BAUGH, J.H.
5793
BAULIEUX, J.
6012
BAUSTAD, B.
5827*
BEARGIE, R.A.
6205
BEATTIE, A.D.
5563*
BEATTIE, E.J., JR.
5985*
BECK, A.R.
5945
BECK, K.
6053
BECK, L.T.
5790
BECKER, A.E.
5795
BECKER, J.M.
5945
BECKING, G.C.
5583*
BEGLIOMINI, A.
6183
BEHAR, C.
6242
BEHRMAN, R.E.
6220
BELGHITI, A.A.
5817
BELL, T.A.
5541
BELOZEROV, E.S.
6067
BELYAEVA, V.S.
6108
BEMAN, F.M.
5742
BENEVENTANO, T.C.
5694, 6149
BENFIELD, J.R.
5762
BENGMARK, S.
5981*
BENNETT, J.R.
5761
BENNETT, T.P.
5465
BENOIT, P.R.
5771
BENZI, G.
5570*
BERARD, P.
6012
BERARD-BADIER, M.
6051
BERCI, G.
6032
BERESNEVA, E.N.
5704
BEREZOV, YU.E.
5844
BERG, J.W.
5921
BERG, M.
5521
BERGIN, J.J.
6213
BERMAN, A.T.
5901
BERNDT, H.
5927
BERNDT, W.
5642
BERSON, S.A.
5543, 5700
BERTELSEN, S.
5748
BERTHELOT, P.
5495*
BERTHILLIER, G.
5599
BERTI, F.
5627*
BEVERIDGE, J.
5858
BEYLOT, J.
5818, 6252
BHARGAVA, U.
5626
BHATT, J.
6015
BHATTI, A.
5836
BHIVANKAR, N.T.
6265
BINGHAM, J.R.
5656*
BINSWANGER, U.
5892
BIRNBAUM, W.
5905
BIRZLE, H.
6053
BLACK, I.B.
5591*
BLUNDELL-HASSELL, S.K.
6273
BLYCKER, J.
5769
BODE, C.
6062*
BODE, O.
5487*
BOHLCK, I.
6159
BOHMIG, H.J.
5781
BOIVIN, P.
5999
BOLINE, J.E.
5743
BOMBECK, C.T.
5733*
BONDAREV, L.S.
5723
BONGIORNO, M.
5990*
BONNOD, J.
5640
BOON, J.
6077
BORIN, YA.V.
5851
BORKAR, A.V.
6262
BORNER, E.
6078
BOSCH, E.
6035
BOSMANN, H.B.
5419*
BOSSAERT, H.
6189
BOTTGER, G.
5754
BOUCHIER, I.A.D
5436*
BOYCE, H.W.
6016
BOYCE, H.W., JR
6063
BRABAND, H.
5691
BRADFORD, W.D.
6018
BRAITSEVA, N.N.
5706
BRAUN, H.
6005
BRAUN, R.A.
5744
BREAM, C.A.
5933
BREMER, J.
5421*
BREMNER, C.G.
5462
BRENDEL, W.
5615*
BRISKIN, B.S.
5710
BRITT, L.G.
5522, 554
BRITTON, R.C.
6128
BRODIE, D.A.
5763*
BROUSTET, A.
5818
BROWN, O.E.
5429*
BROWN, P.W., J
5968
BROWNLEE, J.E.
6172
BRUCKE, P.
5674
BRUCKNER, W.
5542
BRUNI-CELLI, B
5765*
BRUNO, M.S.
6218
BRUNSER, O.
5890
BRUNT, P.W.
5958
BRYANT, L.R.
6205
BRYS, R.
6187
BRZOSKO, W.J.
5454
BUBLII, V.P.
6097

RUCHALI, K.
6042
BUCHELER, E.
5676
RUCHNER, A.
5556
BUDER, H.W.
6042
BUKIN, A.S.
6094
BUNTIN, P.T.
6245
BURCHINSKY, G.I.
5713
BURNS, G.P.
5655*
RUTTERWORTH, P.H.W.
5442*
BUTTS, D.
6014
BUVANOV, V.M.
5727
UZOIANU, V.
5539
YFIELD, J.E.
5988*
YRD, B.F., JR.
5799
BYRNE, J.J.
5774
BYUN, H.H.
5659*
ACHIN, M.
6044
ALDWELL, B.F.
6216
AMILLERI, J.P.
5880
AMPANA, T.
5484*
ANTOR, M.O.
6221
APKOVA, A.
5605
ARDOZA, M.R.
5947*
AROLI, J.
5995*, 6055*
ARSTENS, L.A.
6058*
ARTER, E.A.
5580*
ARTER, J.P.
6276
ARTER, K., JR.
5658*
ASANOVA, P.
6051
ASTRUP, H.J.
6248
ATRY, J.
6189
FBULLA, R.P.
5766
ENTA, A.
6160
ERDA, J.J.
6231
ERISE, E.J.
6206
EULEMANS, G.
5870, 5944

CHAKRAVARTI, R.N.
5943
CHAMLIAN, A.
6051
CHAPMAN, D.I.
6259
CHAPMAN, J.R.
6025
CHAPMAN, N.D.
5744
CHAPUIS, G.
5740
CHAPUIS, Y.
6007, 6069
CHARBONNIER, A.
6069
CHARDON, P.
6242
CHARLESWORTH, D.
5652*
CHARPENTIER, C.
5995*
CHASSIGNOL, S.
6166
CHATIYANONDA, K.
6172
CHATTERJEE, B.D.
6181
CHAUSSY, C.
5615*
CHAWLA, R.C.
5540
CHEEK, D.B.
6227
CHEN, C.C.
6208
CHEN, P.C.Y.
6255
CHENG, F.C.Y.
5655*
CHEPULENOK, V.B.
5710
CHERNELCH, M.J.
6114*
CHERNYAVSKAYA, L.A.
5727
CHERRY, G.
5658*
CHERUBIN, C.E.
5695
CHESTERTON, C.J.
5442*
CHHUTTANI, P.N.
5867
CHIN, L.
5639
CHING, S.
6123
CHISLOVSKY, K.I.
5472
CHISTOVA, M.A.
5808
CHOWERS, I.
5926
CHRISTIE, G.S.
5568*
CHRISTOFOROV, B.
5735
CHUAN, T.N.
6031

CHUMAKOVA, N.I.
5728
CHUTE, A.M.
6260
CIARKOWSKI, J.
5691
CIVETTA, J.M.
6235
CLANCY, J.J.
5741
CLARK, H.E.
5558*
CLASSEN, H.
5998
CLATWORTHY, H.W., JR.
5864
CLEATOR, I.G.M.
6156*
CLERY, A.P.
5923
CLORE, J.N., JR.
5697
COATS, E.
5468
CODE, C.F.
5519*
COELHO, R.G.P.
5733*
COFFEY, N.
6012
COGBILL, C.L.
5966
COHEN, A.
5976
COHEN, A.B.
6249
COHEN, A.M.
5466
COHEN, D.
5734*
COHEN, Y.
6031
COHN, I., JR.
6246
COLDWELL, B.B.
6061*
COLE, J.O.Y.
5681
COLEMAN, R.
5430*
COLI, R.D.
5934
COLLEN, D.
6189
COLLINI, G.
5845
COLOMBI, A.
5660*
COMBESCOT, C.
5574*
CONDON, J.R.
5612*
CONN, H.O.
6121
CONNELL, A.M.
5681
CONRADI, T.
5752
CONSTANTIN, M.J.
5625

COOKE, A.R.
5494*, 5533*
COOKE, W.T.
5877*, 5883, 5885*
COOMBES, M.
6156*
CORDANO, A.
6227
CORNEANU, M.
5539
CORNILLOT-CLEMENT, A.
5999
COSTE, F.
5737
COTTE, M.F.
6166
COUDOUX, P.
6242
COULTAS, R.J.
5603
COURTE, M.T.
5574*
COX, A.G.
5655*
CRABTREE, J.M.
5766
CRAWFORD, A.P.
5955
CREMA, A.
5508*
CREAMER, B.
5433*
CRESPON, B.
5880
CRET, L.

6012
CREUTZFELDT, W.
5971
CRILE, G., JR.
5953
CRINBERG, A.A.
5842
CROFT, D.N.
5433*
CUBERTAFOND, P.
6147
CURLIN, G.T.
6249
CURRIE, R.A.
6210
CUSTER, M.D., JR.
5697
DAAE, L.N.W.
5421*
DAGLE, G.E.
5763*
DAGRADI, A.E.
6113*
DAHLQVIST, A.
5886*
DAIRMAN, W.
5601
DALSGAARD, M.
6076
DANCESCO, P.
6254
DANESE, C.A.
6151
DANIELSEN, A.
5698
DAOUD, K.
6201
DARBY, W.J.
6276
DARDIK, H.
6149
DART, C.H., JR.
5967
DART, G.
5980*
DA SILVEIRA, M.J.X.
6155
DAVID, M.
6166
DAVIDSON, J.R.M.
5770
DAVIDSON, M.
5996
DAVIS, A.E.
5969

DAVIS, J.E.
5918
DAVIS, P.S.
5980*
DAWSON, A.M.
5879*, 6026, 6184
DAWSON, I.
5946*
DAYE, G.T., JR.
6230
DE BERGEYCK, E.
5701
DEBRAY, C.
5554, 5663, 5665
DECARLI, L.M.
5590*
DECONNICK, P.
5933
DE FRANCHIS, R.
5604
DE GROOTE, J.
6034
DE LA TOUR, J.
5554
DE LEEUW, I.
5840
DELLER, D.J.
5980*
DEL NINNO, E.
5604
DELUCA, F.G.
5934
DEMLING, L.
5998
DENISIUK, V.G.
5851
DEODHAR, A.D.
5569*
DERIZHANOVA, I.S.
5935
DERRICK, J.R.
5791
DESAI, H.G.
5678, 6262
DESCOS, L.
5979
DE TOLLENAERE, G.
6139
DEVIVO, D.C.
5463
DE VRIES, P.M.
5548
DHATT, P.S.
5898
DHUMEAUX. D.
5495*
DIAMOND, D.L.
6206
DIETRICHSON, O.
6050
DIETSCHY, J.M.
5602, 5636
DI LUZIO, N.R.
6071
DINBAR, A.
5988*
DIOGUARDI, N.
5604
DJUKOV, V.S.
6193
DMITRIEV, A.E.
5803
DOKOV, V.K.
5589*
DONALDSON, R.M.
5648*
DONDE, U.M.
6265
DONNER, M.W.
5761
DOROGAN, D.A.
5975
DORSEY, J.A.
5442*
DOWNING, A.
5921
DREILING, D.A.
6151
DREIZINA, A.M.
5807
DRINKWATER, J.E.
6026
DUBOIS-GAMBARELLI,
6051
DUBRASQUET, M.
5455
DUDLEY, B.W.
6276
DUELLO, T.J.
5437*
DUFFANT, M.
6168
DUFFY, B.J.
5858
DUNAN, S.
5675
DUNCAN, D.
5456
DUNN, S.H.
5558*

DUPLISSE, B.R.
5639
DUPOUY, J.P.
5461
DUPREZ, A.
5677
DURAND, P.
5897
DUREMIDES, G.D.
5837

YER, N.H.
5879*, 6184
ARLE, E.
6014
BERHARDT, A.
5688
BERHARDT, G.
5873
BERS, G.
6122
CHEGARAY, H.M.
5967
DELSON, Z.C.
5745
DER, M.
6248
DOMAKHA, V.KH.
6041
DWARDS, A.
6232
DWARDS, R.G.
5980*
IDELMAN, S.
5890
INHEBER, A.
6270
ISEN, J.
5930
ISENBAUM, S.
5976
ISENBERG, M.M.
5540, 5801
LDER, G.H.
6025
LEFANT, E.
5860
LIZONDO, J.
5659*
LKONIN, B.L.
5711
LLIOTT, J.P., JR.
6028
LLIS, F.H., JR.
5462, 5756
LOVSON, J.

5560*
L-SAWY, M.
6281
LSTER, K.
5998
L TAWIL, V.
6149
NGELHARDT, H.G.
5760
NSELBERG, K.
6218
RFLE, J.D.
5582*
RLINGER, S.
5495*
RMINI, M.
6152
RMOLOV, A.S.
5844
RKONWU, C.O.
5561*
VDOKIMOV, V.N.
5704
YAL, Z.
5926
FAHIMI, H.D.
5439*
FALAIYE, J.M.
5889
FALCONER, C.W.A.
5958
FALLON, H.J.
5588*
FARRAR, J.T.
5516*
FASOLO, G.F.
5825*
FATTOVICH, G.
5671
FAURE, M.
6147
FAUVERT, R.
5495*, 5999
FEDENKO, N.N.
6095
FEDEROV, V.D.
5937
FEDOTOV, N.P.
6037
FEIGELSON, J.
5731
FELDMAN, J.
6249
FELDNER, H.
6105
FENINA, E.P.
5977
FENTON, J.C.B.
6026, 6184
FEUER, G.
5425*
FIALA, J.
6052
FIELDING, J.F.
5877*, 5883
FILIMONOV, G.P.
5729
FILIN, V.I.
5804
FILIPE, M.I.
5946*
FILIPOVIC, B.
5643
FILOGAMO, G.
5620*
FINAGIN, L.K.
5595
FINKELSTEIN, R.A.
6157*, 6175
FISCHER, H.D.
5628*
FISCHER, J.A.
5892
FISHER, D.E.
6220
FISHER, R.J.
5452
FISHER, W.J.
6173
FISHMAN, J.
6130
FITZGERALD, J.F.
6245
FITZGERALD, P.J.
5553*
FITZNER, A.B.
5593
FLEISHER, D.R.
5511*
FLESHLER, B.
5489*
FLETCHER, J.R.
5687
FLEURETTE, J.
6166
FLOCH, M.
5931
FLOWERS, R.S.
5772
FODOR, T.

6249
FOGAR, R.
5825*
FOLLEY, J.H.
5948
FONKALSRUD, E.W.
5988*
FORD, K.T., III
5490*
FORELL, M.M.
5963
FORMAL, S.B.
6247
FORNUSEK, A.H.
5915
FORTNER, J.G.
5985*
FOURNIER, P.
5887*
FOUTS, J.R.
5577*, 5581*
FOX, R.A.
6125
FRATANTONI, J.C.
6211
FREDERICKSON, D.S.
5411*
FRIESEN, J.E.
6217
FRIGO, G.M.
5506*, 5508*
FRISCH, E.
6127
FRODL, F.K.O.
5716
FUCHS, K.
6162
FUKUSHIMA, T.
5875
FUKUWARA, T.
5637
FULLMER, C.D.
5769
FUNG, W.P.
5891
GABUZDA, G.J.
6123
GABLER, H.
5784
GAGNON, D.J.
5509*
GALFEV, M.A.
6009
GALLAGHER, T.F.
6130

GALPERIN, F.I.
6011, 6142
GALY, J.C.
5818
GANICHKIN, A.M.
5702
GARANCIS, J.C.
5986*
GARBER, A.J.
5572*
GARCIA-LILIS, C.
5587*
GARDNER, R.J.
6210
GAULL, G.
5420*
GEISEL, A.
5521
GELFAND, M.
5931
GELLER, L.I.
5852, 6117
GEMMELL, M.A.
6273, 6279
GEOFFROY, H.
6242
GEOKAS, M.C.
5970
GEORGESCU, G.
5638
GEREBTZOFF, M.A.
5589*
GEYER, G.
5481*
GHANEM, M.H.
6281
GHIBAUDI, D.
5896
GIALETTI, L.
6183
GIESSAUF, W.
6105
GILES, J.P.
5699
GILLES-BAILLIEN, M.
5476*, 5498*, 5500
GILLET, M.
5614*
GIMELLI, F.
6202
GINZBURG, S.A.
5727
GIOANNINI, P.
6107
GLEESON, J.A.
5689
GLENN, J.S.
5465
GLESER, G.
5661*
GLIEDMAN, M.L.
5932
GLINSMANN, W.H.
5562*
GLUECK, H.I.
5661*
GLUKHOVETS, B.I.
5972
GO, V.L.W.
5893
GOEBELL, H.
6062*
GOHD, R.S.
6176
GOLDBERG, A.
5563*
GOLDBERG, B.B.
5696
GOLDIN, V.A.
5809
GOLDSTEIN, L.I.
6088
GOLTERMANN, N.
5878*
GOLUBKOV, V.A.
5729
GOMMI, B.W.
5564*
GONCHAROV, A.I.
6066
GONZALEZ-CRUSSI, F.
5776
GOOD, T.A.
5986*
GOODMAN, I.
5510*
GORBACH, S.L.
6181
GORDIN, F.
5757
GORDON, H.E.
6209
GORGOL, V.A.
5811
GOT, R.
5599
GOTS, R.E.
6136
GOUGH, A.D.
5681
GOYAL, R.K.
5741
GRACE, J.T., JR.
6186
GRAHAM, G.G.
6227
GRAHN, B.
5528*
GRANDA, V.
5425*
GRANOV, A.M.
5702
GRANT, R.N.
5976
GRAVES, H.A., JR.
5799
GRECHISHKIN, D.K.
6066
GREEN, A.G.
5789
GREENAWALT, J.W.
5440*
GREENBERG, S.R.
5906
GREENGARD, O.
5578*
GREENWAY, C.V.
5632*
GREGORIE, H.B., JR.
5746
GRENIER, J.F.
5614*
GREW, N.
6176
GRIFFEN, W.O., JR
5876, 6205
GRIFFITHS, R.W.
5968
GRILL, W.
5962
GRIMAUD, J.A.
5608
GRIMBEEK, J.F.
5686
GRITSMAN, N.N.
6010
GRIVEL, M.L.
6012
GROSSI, A.
5845
GROSFELD, J.L.
5864
GROZA, P.
5539
GRUBER, R.
5932
GUBERNIEV, M.A.
5592
GUDE, Z.
5812
GUIRGIS, F.K.
6281
GUNDEL, E.
5657*
GUNDMAND-HOYER,
5886*
GUNNLAUGSSON, G.
5756
GUNTHER, H.
5693
GUPTA, H.L.
5898
GURD, F.N.
5771
GUSEVA, N.G.
6010
GUSTAFSSON, F.A.
5412*
GUTMANN, R.A.
5816
GUTSCHOW, K.
5623
GUYER, P.B.
5965
HABER, S.
5564*
HADCHOUEL, P.
5995*
HADZIYANNIS, S.J
6087
HAEFELY, W.
6226
HAEUSLER, G.
6226
HAKANSON, H.
5414*
HAKIM, J.
5999
HAKKINEN, I.
5775

LBHUBER, K.J.
5481*
LBHUBER, U.
5481*
LLE, M.
5658*
LLIDAY, J.P.
6073
MANN, H.J.
5783
MILTON, J.D.
6184
MMER, R.
5641
NAKI, A.
5994*
NEFELD, M.
5628*
NNIG, K.
5426*
NSCH, C.
5468
NSEN, A.R.
5581*
NSEN, R.G.
5451
RADA, T.
6024
RDIN, W.J.
6177
RDY, J.D.
6177
RDY, W.W.
6064
RGROVE, R.L.
5695
RING, R.
6238
RPER, A.E.
5493*
RPER, D.T., JR.
6158*
RRIS, J.I.
5444
RTEL, W.
5941
RTEMANN, E.
6166
RTLEY, P.S.
6272
RVEY, R.W.S.
6174
SSLINGER-DIETHERT, I.
5783
VERBACK, B.J.
5970
WTHORNE, J.N.
5430*
YASHI, M.
5994*
BERER, G.
5914
DING, L.G.
5614*
GARTY, M.P.
5568*
IDENBLUT, A.
5813
IDRICH, H.G.
5426*
HEIMBERG, M.
5584*
HEINZE, J.E.
5538
HELD, H.
6081
HELLMAN, L.
6130
HELSINGEN, N., JR.
5753
HENDERSON, P.T.
5415*
HENDRIX, T.R.
5761, 6158*
HENLEY, K.S.
5622
HENRIKSON, D.M.
6230
HERMAN, R.H.
5427*, 5611*, 5613*,
5619*
HERMANN, G.
5773
HERMON-TAYLOR, J.
5519*
HERR, F.
5523
HERSH, T.
5931, 6214
HERZMANN, J.
6240
HESCHL, R.
6237
HEWICK, D.S.
5577*
HEWSON, J.R.
5771
HEXEBERG, A.
6163
HIATT, R.B.
5510*
HIGH, E.G.
6276
HILBE, A.
5612*
HILL, D.E.
6227
HINCHEY, E.J.
5771
HINKEL, G.K.
6086
HINTON, N.A.
5631*
HIRANO, S.
5787
HIROOKA, M.
6178
HIROSHIGE, K.
5597
HIRSCHFELD, J.
5914
HOAGLIN, L.L., JR.
6014
HOEDEMAEKER, P.J.
5826*
HOEFFEL, J.C.
6131
HOERR, S.O.
5772
HOFMANN, A.F.
5893
HOLLENDER, L.
5903
HOLLINGSWORTH, R.C.
6175
HOLLOWAY, J.B.
5876
HOLSTI, L.R.
5855*
HOLT, J.M.
5684
HOLYOKE, J.B.
5743
HOLZ, K.
5813
HONDA, T.
5547
HOOG, J.M.C.
5686
HOREYSECK, G.
5961*
HOUSSET, P.
5663, 5665
HOWE, J.M.
5558*
HOWELL, J.I.
5436*
HOWIE, J.G.R.
5928
HOWLAND, W.S.
5985*
HRENO, A.
5771
HUBENS, A.
5840
HUGON, J.S.
5413*
HUGUIER, M.
5757
HUHTANIEMI, I.
5448
HUIZENGA, K.A.
5947*
HULU, N.
6229
HUNKAPILLER, M.
5538
HUTCHINSON, C.F.
5579*
ICHIDA, F.
6022
IDEO, G.
5604
IGNATOVA, N.V.
5728
IKEDA, N.
5732*
ILLARIONOV, Y.A.
5714
IMBESI, C.
6049
INAKURA, M.
5670
INAMI, O.
5758
INAMOVA, K.B.
5544
INCZINGER, F.
5993*
IONESCU, S.
5539

ISAZA, J.
5540
ISHII, Y.
5532*
ISHIZU, H.
6082
ISSAAD, H.
6201
ISSELBACHER, K.J.
5580*, 5618*
IVANOV, P.A.
6011
IVANOV, V.A.
5809
IVANOVA, N.N.
6142
IVASHKIN, V.T.
5847
JAFFARI, S.M.H.
6180
JAMDAR, S.C.
5578*
JAMES, D.G.
6125
JAMES, P.M., JR.
5901
JAN, M.L.
5913
JANSEN, G.R.
5579*
JAQUES, W.A.
5739
JARNUM, S.
5878*, 5886*
JEAN-BLAIN, C.
5640
JEEJEEBHOY, K.N.
5499
JEFFERSON, N.C.
5521
JELEROVA, J.
5860
JENKINS, M.D.
5429*
JENKINS, R.
5521
JENSEN, H.AE.
6085
JENSEN, K.B.
5878*
JERSILD, T.
6100
JERVIS, H.R.
6247
JOCELYN, P.C.
5576*, 5586*
JOHNS, W.H.
5486*
JOHNSON, A.G.
5885*
JOHNSON, H.
5690
JOHNSON, R.B.
5687
JOHNSON, V.
5773
JONES, A.L.
5417*
JORNVALL, H.
5444
JOSHI, V.C.
5423*, 5441*
JOSS, E.
5959
JUHL, E.
5865
JURGENSEN, J.C.
6064
KABENO, H.
5547
KACHELHOFFER, J.
5614*
KAGAN, Y.L.
5727
KAISER, G.
5959
KAKEMI, K.
5477*
KAMEDA, H.
6132
KAMEI, Y.
5435*
KAMENCHIK, M.G.
5804
KAMIETH, H.
5692
KAMISHIMA, K.
6024
KANEDA, M.
6116*
KANEVSKAYA, M.G.
6102, 6104
KAPARULINA, L.T.
6144
KAPULLER, L.L.
5939
KAPUR, M.
5868
KARIYA, Y.
5954
KARK, A.E.
6151
KARNOVSKY, M.L.
5430*
KASAHARA, S.
5815
KASPER, H.
5881
KATO, J.I.
6176
KATO, R.
5559*
KATO, T.
6169
KATSUMI, M.
5954
KATTERMANN, R.
5992*
KAUFER, C.
5676
KAVIN, H.
5680
KAZARIAN, K.K.
5900
KEATS, W.L.
5913
KEDZIERSKA, L.
5512*, 5515*
KELLOGG, T.F.
5492*
KELLY, K.A.
5514*
KEMPF, P.
5916
KERSCHBAUMER, F.W.
5647*
KHO, K.M.
5891
KHOKHLOV, N.F.
6144
KHRAMOV, V.A.
6154
KIM, I.C.
5929
KIMBERG, D.V.
5431*
KIMURA, C.
6178
KIMURA, T.
5477*
KINOSHITA, J.
5787
KIPNES, R.S.
5424*
KIRK, R.M.
6234
KIRPATOVSKY, I.D.
6006
KIRSCH, W.
5633
KIRSNER, J.B.
5654*, 5780
KISELOW, M.C.
5913
KISS, J.
5750
KISSEL, P.
5677
KITAHARA, T.
5683
KLASSEN, K.P.
5742
KLEMS, H.
6238
KLINGLER, E.L., J
6127
KLIPSTEIN, F.A.
5890, 5894
KLOBUKOWSKI, C.J.
6270
KLODCHENKO, N.N.
6066
KLUNICHENKO, A.M.
5904
KLYACHKO, V.R.
6040
KNIGHT, P.L.
5492*
KNILL-JONES, R.P.
5882
KNOP, J.K.
5451
KOBAYASHI, J.
5788
KOBAYASHI, K.
6112*
KOBAYASHI, M.
5787
KOBAYASHI, S.
5654*, 5780

OBAYASHI, T.
6106
OBAYASHI, Y.
5547
OBYLCHAK, I.M.
5871
OBYLIATSKY, I.T.
5975
OHOUT, M.
5584*
OHOUTOVA, B.
5584*
I, M.
6046
LHOFF, H.
5642
LLMEIER, H.
5657*
LNER, R.YU.
6093
LODNY, M.
6735
LOKOLOV, A.R.
6001
MAROV, A.S.
5709
NDO, K.
5573*
NDO, S.
5547
NISHI, R.
5477*
NTSEVA, N.G.
6117
REPANOV, A.M.
6161
RNGUTH, P.J.
5479*
ROTKO, G.F.
5551
SONOGOV, L.F.
5724
STASH, G.A.
5710
STERING, H.
6162
STERLITZ, H.W.
5517*
STEVA, A.K.
5714
TELNIKOVA, V.I.
5524
TIGER, YA.S.
6146
TOV, I.A.
6039
VALCHUK, G.A.
5872
ZAK, G.
5499
ZHEVINOV, A.I.
5709
ZLOVA, Z.P.
5852, 6117
AG, E.
5720, 5819
ALIK, J.
5751
ANZ, D.
6042
KRASKER, J.
5665
KRASNA, I.H.
5945
KRATZER, G.L.
5936
KRAWCZYNSKI, K.
5454
KRISHNAMURTHY, K.A.
6257
KRISHNAN, P.S.
5453
KRITCHEVSKY, D.
5565*
KRIVONOGOV, J.R.
5755
KROLEVETS, I.P.
5755
KRONENBERG, H.
6073
KRUEGER, R.P.
6018
KRUGER, W.
6164
KRUGMAN, S.
5699
KRUSCHOVA, V.M.
5843
KRYLOVA, N.P.
6271
KRYZHANOVSKAYA, I.I.
5850
KUBASOV, I.G.
5712
KUGA, H.
5470
KUGLER, S.
5821
KUIJJER, P.J.
5802
KUMAR, K.S.
5453
KUNZ, B.
5693
KUNZ, W.
5428*
KUNZMAN, J.
5835
KUPFER, D.
5566*
KUSCH, N.L.
5749
KUTCHAK, S.N.
6084
KUTT, H.
5607
KUTTIG, H.
5915
KUTTY, M.K.
6267
KUZELA, L.
5991*
KUZIN, M.I.
5729
KUZMA, J.F.
5986*
KUZMINA, L.N.
5807
KWITEROVICH, P.O., JR.
5411*
KYLE, K.
5772
LAATIKAINEN, T.
5682
LABAT, J.P.
6119
LA COUR, D.
5767
LACQUET, L.K.
5701
LADYMAN, S.R.
6172
LAGERON, A.
6055*
LAHRECH, T.
5738
LAI, C.S.
5899
LAISSUE, J.
6196
LAM, K.W.
5452
LAMARCHE, P.H.
5934
LAMB, R.G.
5588*
LAMBETH, J.
5794
LAMBLING, A.
5817
LAMBOOY, J.P.
6072
LANCASTER, J.R.
6210
LANCESTREMERE, R.G.
6127
LANDIN, R.M.
5600
LANIER, V.C., JR.
5859
LANT, A.F.
5475*
LARDINOIT, P.
5944
LAREDO, J.C.
5817
LARSON, S.J.
5536
LASH, A.F.
6225
LASKEY, A.
5505
LASZLO, J.
5429*
LAUGHREY, F.G.
5622
LAUMONIER, R.
5764*
LAUTER, F.H.
6276
LAUTT, W.W.
5632*
LAW, D.H., IV
5859
LAZAROVA, Z.
5993*
LEARY, P.M.
6272
LEASE, E.J.
6276
LEBLANC, R.
5479*

LE BRAS, M.
6045
LEBREUIL, G.
5887*
LEBREUX, L.
5860
LECCHINI, S.
5506*, 5508*
LECHNER, G.
5674, 5781
LECLAIR, M.F.
5527
LECLERC, M.
6021
LEENDERS, E.L.
5777
LEGER, L.
6007, 6069
LEHMAN, J.S.
5696
LEHY, T.
5455
LEIKINA, E.M.
5592
LEMAIGRE, G.
6069
LEMONNIER, F.
5995*
LE-NA-HOA
6251
LENHART, A.
6236
LENRIOT, J.
6069
LENRIOT, J.P.
6007
LENZ, J.
5941
LEQUERLER, Y.
5736
LE QUINTREC, Y.
5817
LERAT, J.L.
6012
LESLIE, R.A.
5409*
LESSER, G.T.
6218
LEUSCHNER, U.
6054*
LE-VAN-HOA
6278
LEVIN, J.
6130
LEVIN, Y.R.
5705
LEVINE, P.H.
5467
LEVINE, R.J.
6214
LEVINE, R.R.
5479*
LEVINE, S.M.
5931, 6214
LEVITT, M.D.
5648*
LEVRAT, M.
5979
LEVY, G.
5502
LEVY, S.B.
5983*
LEYMARIOS, G.
5664
LEYMARIOS, J.
6243
LIAPIS, M.A.
5812
LIEBER, C.S.
5590*
LIEDBERG, G.
5414*, 5513*
LIEN-HUONG, BUI-THI
6251
LIESE, W.
5428*
LIKHACHEV, V.A.
5978
LINARELLI, L.G.
5562*
LINDENBRATEN, L.D.
5721
LINDER, J.H.
5908
LINDNER, A.E.
5857
LINDSTRAND, K.
5414*
LINEVSKY, YU.V.
6194
LIPITZ, L.
6088
LISBOA, B.P.
5412*
LITTLE, J.M.
6073
LITTMAN, A.
5828*
LITTMAN, M.
5828*
LOEB, J.N.
5431*
LOGINOV, A.S.
6108
LOHRS, U.
6248
LOMAKO, V.V.
5710
LONGMIRE, W.P., JR.
6150
LORINCZ, A.B.
5910
LORTAT-JACOB, J.L.
5757
LOUS, P.
6099
LOYGUE, J.
5903
LOYKE, H.F.
6124
LUCY, J.A.
5436*
LUDEWIG, R.M.
5630*
LUKASH, W.M.
5687
LUKE, C.G.
5980*
LUKES, R.J.
5921
LUND, E.E.
6260
LUTZE, G.
5428*
LUUKKAINEN, T.
5448
LYDON, R.J.
5517*
LYNGSTADAAS, S.
5846
LYSKOVTSEV, M.M.
6097
MACDONALD, R.A.
6000
MACKH-KAUFFMANN, G
5821
MACNAMARA, F.N.
6273
MACNORLAND, R.H.
6225
MADALINSKI, K.
5454
MADDEN, J.J., JR.
5630*
MADSEN, N.P.
5568*
MAEGRAITH, B.G.
6275
MAENZA, R.M.
6247
MAEVSKY, V.A.
5474
MAFFIOLI, C.
6242
MAGEE, D.F.
5535*, 5552*
MAHADEVAN, S.
5582*
MAHONEY, W.D.
5793
MAILLARD, J.N.
5757
MAINBRIDGE, J.N.
5409*
MAKAROV, F.D.
6048
MALAIYANDI, M.
5582*
MALHOTRA, S.L.
5832
MAMONT, B.
5688
MAMYKIN, S.N.
5904
MANCHON, P.
5455
MANDZIUK, B.N.
5715
MANITZ, G.
6054*
MANN, A.
5911
MAPPES, G.
5916
MARABINI, A.
5671
MARCHE, C.
5665, 5764*
MARCHISIO, P.C.
5620*

RCOLONGO, R., JR.
6107
RCUS, N.
5531*
RDASHEV, S.R.
5593
RENCO, G.
5896
RGOLESE, R.
6151
RIANI, A.
6051
RKHAM, N.P.
6274
RKOWITZ, A.M.
5917
RKUSSEN, J.
5614*
RQUAND, J.
5957
RSH, W.H.
5553*
RSHAK, R.H.
5857
RTI, M.C.
5833
RTIN, W.T.
6249
SON, H.S.
5458
SUDA, K.
6080
SUDA, M.
5863
SUMOV, S.A.
6141
TACHINER, J.T.
5437*
THAI, N.M.
6264
TSUNAGA, F.
5922
TSUSHITA, T.
5758
TSUZAKI, M.
5994*
TSUZAKI, S.

6199
THEWS, N.F.
5924
TTILA, M.J.
5855*
TVEEV, N.K.
5806
JER, B.
6197
JRI, M.M.
5719
ER, G.E.
5482*, 5483*
IMENKO, I.D.
6048
IMENKO, O.I.
6048
AT, V.S.
5937
ES, J.S.
6228
ZURIN, A.V.
6001

MCADAMS, A.J.
5661*
MCCLUSKEY, B.
5800
MCCULLOUGH, F.S.
5742
MCDERMOTT, W.V.
6047
MCDONALD, D.F.
5791
MCGEACHIN, R.L.
5567*
MCKINLEY-MCKEE, J.S.
5445
MCLEAN, D.M.
6172
MCNARY, W.F.
5479*
MCRAE, J.
5650*
MEDVEDEVA, N.T.
5710
MEIJER, D.K.F.
5485*
MEISSNER, D.
5628*
MELNIKOVA, V.P.
5804
MENDELOFF, A.I.
5587*
MENDLER, N.
5615*

MENTOURI, B.
6201
MERAVIGLIA, A.
5896
MERIKAS, G.E.
6087
MERSHEIMER, W.L.
5900
MERZ, W.
5892
MESSERSMITH, J.K.
5793
METAYER, J.
5764*
MEYER, U.
5609
MICHEL, C.
5624
MICHELL, R.H.
5430*
MIGASENA, P.
6275
MIGNON, F.
5952
MIKHAILOV, G.A.
5473
MIKHAILOV, M.M.
5724
MIKHAILOV, V.A.
5702
MIKIRTUMOV, S.M.
5803
MILLARD, F.J.C.
5612*
MILLER, L.R.
6228
MILLISER, R.V.
5906

MILLS, J.N.
5538
MILNE, M.D.
5475*
MINTS, V.YA.
5842
MIRKHODZHAEV, A.KH.
6040
MISRA, R.C.
6280
MISTRY, S.P.
5569*
MITCHENKO, I.K.
5712
MITSUNO, Y.
6043
MITZKAT, H.J.

5609
MIYOSHI, A.
5787
MOLLER, C.
5960*
MOLLIN, D.L.
6184
MONNET, P.
6166
MONSALLIER, F.
6069
MONSON, R.R.
5838, 5839
MOODY, A.J.
5614*
MOORE, J.P.
5934
MOORE, M.R.
5563*
MORALES, R.
5456
MOREAU, P.
6166
MORETTI, G.
5818
MORGAN, R.
5505
MORIGA, M.
5787
MORLAND, J.
6075
MORISAKA, K.
5503
MORIYA, M.
5875
MOROSI, H.J.
6127
MOROZ, I.M.
5871
MORRE, D.J.
5432*
MORRIS, D.L.
5445
MORRIS, G.K.
6249
MORRISSEY, S.M.
5537, 5549
MORRISON, A.B.
5583*
MORSON, B.
5882
MORTENSON, R.A.
5650*

MORTON, J.H.
6185
MOSFR, R.
6196
MOSFS, H.L.
6059*
MOTOKI, T.
6024
MOTTA, L.
5685
MOUCHET, A.
5957
MOULINIER, B.
5979
MOULE, Y.
5600
MOULLE, P.
6020
MOZHAYEV, G.A.
6066
MOZSIK, G.
5529*
MUIR, P.W.
6134
MUKHERJEA, A.K.
6258
MULLER, H.O.
5657*
MULLER, W.
6196
MULLER-OERLINGHAUSEN, B.
6153
MUNCK, B.G.
5480*
MUNN, E.A.
5434*
MUNRO, H.N.
5561*
MURAKAMI, F.
6023
MURASHEVA, Z.M.
6039
MURATA, T.
5547
MURPHREE, T.
6276
MUSAFV, A.
5551
MUSSA, G.C.
5719
MUSTARD, R.A.
5747
MUTO, T.
5785
MYERS, F.K.
6228
MYERS, M.B.

5658*
MYERS, R.T.
5836, 5908
MYERS, S.L.
6260
NAEF, A.P.
5739
NAFSTAD, I.
5827*
NAGASHIMA, H.
5669
NAGELE, E.
5881
NAGY, M.
5750
NAIR, K.P.B.
6263
NAIR, P.P.
5587*
NAITO, S.
5964
NAKAJIMA, S.
5535*, 5552*
NAKAMOTO, Y.
5503
NAKAO, Y.
5954
NAKAZATO, Y.
5518*, 5520*
NAKAZAWA, S.
5617*, 6169
NAM, Y.H.
6030
NAMBIAR, B.
6267
NASSIM, J.R.
5612*
NAVAB, F.
5475*
NECHELES, H.
5521
NEIKOV, G.N.
6144
NEIMAN, B.H.
5906
NEKLYUDOVA, E.A.
6011
NEL, W.
5457
NELSON, A.
5799
NELSON, R.A.
5489*
NELSON, R.J.
5762

NEMYKH, V.N.
6013
NENIKOVA-BOGDANOVICH, A.I.
5712
NEOGY, K.N.
6181
NESCHIS, M.
5649*
NFUFELD, E.F.
6211
NEUMAN, H.W.
5790
NEUTJFNS, F.
5944
NEWEY, H.
5491*
NEZAMIS, J.F.
5830*
NIELSEN, F.H.
6076
NIELSEN, J.O.
6050
NIELSEN, P.E.
6050
NIKAIDO, N.
5786
NIKOLAEV, N.O.
5806
NIKOLENKO, I.S.
5872
NIKOLSKY, A.D.
6039
NILSSON, A.
5616*
NILSSON, L.H.
5779
NILSSON, S.
6129
NIOSI, P.
6088
NIRMALA, L.
5868
NISHIDA, H.
5875
NITKIN, A.M.
5937
NIXON, J.E.
5442*, 5459, 54
NIXON, S.E.
5482*, 5483*
NORBACK, D.H.
6058*
NORDENFELT, E.
6101

NORDMANN, Y.

5662
NORMANN, E.
5820
NORO, M.
5758
NORTHAM, J.I.
5830*
NORUM, K.R.
5422*
NOSENKO, A.G.
6041
NOWILL, W.K.
6074
NOWOSLAWSKI, A.
5454
NURET, R.
6147
NURITDINOV, B.
5551
NUSSELT, L.
6053
NYGAARD, K.
5753
NYHUS, L.M.
5733*
NYQUIST, S.E.
5432*
OARSHENKOVA, O.I.
5807
OBERLEAS, D.
6002
OCHIAI, H.
5875
OCKNER, R.K.
5417*
O'CONOR, G.T.
5651*
ODA, T.
5668
OELSSNER, W.
5628*
OGATA, E.
5573*

ESBY, J.E.
5793
GRADY, F.W.
6184
JRA, H.
5447
GA, A.
5518*, 5520*
MEIER, J.
5504
ABE, S.
5824*, 5829*
AMURA, J.
6023
ITA, A.
5477*
ESEN, H.
6099
IVIER, CL.
5880
OLE, A.A.
5530*
ISHCHUK, V.F.
6195
DDA, K.
5559*
SHIRO, T.
6023
), M.G.
5553*
LOV, V.A.
5728
RENIUS, S.
5566*
IPOV, B.K.
5711
AN, M.Z.
5777
ROVERKHOV, G.E.
6039
, Y.
6106
F, M.
5666
ENJANN, R.
5854
RHOLT, E.L.
6213
RWEG, N.I.A.
5510*
ATANOV, B.S.
6011
LABI, T.
5469
TAUF, F.
5416*
ARES, R.R.
5986*
EBIANCO, A.C.
5967
TSYREV, J.M.
5842
ALIA, D.
5685
PPER, S.
6127
QUET, K.J.
5676
RK, W.C.
6017
PARKER, E.F.
5746
PARKER, J.
5649*
PARKER, J.G.
5694
PARKS, T.G.
5681
PARRISH, R.A.
6216
PARTURIER-ALBOT
5880
PASQUIER, J.
5979
PASSARO, E., JR.
6209
PATEL, H.C.
5797
PATEL, U.T.
5797
PATHAK, H.Y.
6265
PATHAK, I.C.
5943
PATTERSON, M.
5791
PAVLOV, V.V.
5755
PECHATNIKOVA, E.A.
5805
PECOUT, C.
6147
PEKUR, S.V.
5545
PELOUX, Y.
5887*
PENNOIT, H.
6204
PENZES, L.
5443
PERALA, A.
5502
PERCIVAL, G.S.
5558*
PEROL, C.
5737
PERREAU, G.
5663
PERROTIN, J.
6155
PERRY, G.T.
5828*
PERSSON, C.G.A.
5513*
PESCH, H.J.
5998
PESCHL, L.
5629*, 5644
PESHERSTNYAK, T.B.
6104
PESTANA, A.
5585*
PETERKOFSKY, B.
5463
PETERMANN, J.
5653*
PETERSON, B.F.
5823
PETERSON, M.J.
5557*
PETIY, S.I.
5850
PETROV, B.A.
6142
PFEIFER, I.
6164
PHILLIPS, G.T.
5442*, 5459, 5460
PHILLIPS, J.P.
5830*
PHILLIPS, R.
6017
PICCHIONI, A.L.
5639
PICKREN, J.W.
6186
PIERCE, W.A.
6206
PIMPARKAR, B.D.
6265
PINCUS, T.
5983*
PINK, I.J.
5433*
PIROLA, R.C.
5436*, 5969
PIROTTE, J.
6115*
PITCHFORD, R.J.
6277
PLACER, Z.
5991*
PLAGEMANN, P.G.W.
5989*
PLASTININA, R.A.
5888
PLATE, C.A.
5423*, 5441*
PLAYFORTH, R.H.
5876
PLISKEVICH, A.P.
6195
PLIUYKO, M.E.
6041
PLOTKIN, G.R.
6247
POGGLITSCH, H.
6105
POINTNER, H.
5629*, 5644
POLCAN, M.
5782
POLEY, J.R.
5893
POLHEIM, D.
5416*
POLLACK, S.
5484*
POLLAK, J.K.
5434*
POLLYCOVE, M.
6114*
POMERRI, G.
5825*
PONOMAREVA, T.V.
6190
POOLE, B.
5610
POPE, C.E., II
5507*

POPOV, S.D.
5474
POPOVA, Z.P.
5707
POPP, W.
6219
PORRI, A.
5782
PORTER, J.W.
5442*, 5459, 5460
POSTRELOV, N.A.
5708
POTEKAEV, M.A.
6010
POTET, F.
5817
POTTER, B.A.
5567*
POUYET, M.
6012
POWELL, D.W.
6247
PRAKASH, A.
5868
PRAKASH, O.
5868, 6261
PRASAD, A.S.
6002
PREAUX, A.M.
5495*
PRENTICE, R.S.A.
5790
PRETORIUS, H.E.
5457
PREVOT, J.
6148
PREZIOSI, M.
6049
PRIBYLOVA, H.
6240
PRIBYLOVSKY, S.L.
6271
PRICE, J.B.
5497
PRICE, J.B., JR.
6128
PRICE, T.H.
6174
PRIEBE, C.J., JR.
6182
PRINCE, A.M.
5695, 6100
PRINCIOTTO, J.V.
5505
PRIOR, P.
5877*
PROKOPIEVA, ZH.F.
5843
PROLLA, J.C.
5654*, 5780
PROSCHENKO, N.L.
5848
PROSS, D.C.
6018
PROSS, E.
5916
PULLAN, B.R.
5652*
PULVERTAFT, C.N.
5789
PYRTAKHIA, R.V.
5939
QUAADE, F.
5865
QUILICI, M.
5675
QUINTON, A.
6019, 6045, 6118,
6119
RADHAKRISHNAN, A.N.
5410*
RADULESCO, D.
5646*
RADULESCO, S.
6254
RADUSHKEVICH, V.P.
5724
RAFFENSPERGER, E.C.
6231
RAIHA, N.C.R.
5420*
RAJAGOPOLAN, B.
6065
RAJASEKARAN, G.
6002
RAMAIAH, A.
5438*
RAMCHAND, S.
5776
RAMIREZ, M.
5516*
RAMOT, B.
6229
RANGEL, D.M.
5988*, 6150
RANQUE, P.
5675
RANSOME, G.A.
5899
RAPANT, V.
5751
RASK-MADSEN, J.
5951
RAVENEL, J.M.
5746
RAVITCH, M.M.
5837
RAWNSLEY, H.M.
6231
REHFELD, J.F.
5865
REIGEL, D.H.
5536
REIMOLD, W.V.
5992*
REINICKE, V.
6098, 6101
REISMANN, B.
5760
REIZENSTEIN, P.
5779
REMINE, S.G.
5947*
REMMER, H.
6081
REPIN, Y.M.
5594
RESNICK, R.H.
6233
RETTENMAIER, G.
6008
ROHNER, A.
6052
ROLAND, C.
5756
ROMANOV, A.I.
5974
ROMANYCHEV, Y.A.
5706
ROSCH, W.
5854
ROSCHLAU, G.
6086
ROSENBAUM, K.D.
5653*
ROSENBLATT, M.S.
5745
ROSENGREN, K.
5981*
ROSENSWEIG, N.S.
5427*, 5611*, 561
5619*
ROSSER, S.B.
5920
ROSTAND, S.G.
5557*
ROTSTEIN, J.
5649*
ROUS, S.
5575*
ROZE, C.
5554
ROZENSTRAUKH, L.S.
5707
ROZOVA, E.I.
5525
RUBENCHIK, B.L.
6079
RUBIN, M.
5505
RUCKEBUSCH, Y.
6012
RUDDON, R.W.
5466
RUGGIERO, D.A.
6089
RUIZ-TORRES, A.
5504
RUKSTINAT, G.J.
5796
RULE, A.H.
5450
RUMEAU, P.
6167
RUMYANTSEVA, V.V.
6145
REUBER, M.D.
6057*
REYNARD, A.
5603
REYNOLDS, C.H.
5445
REYNOUARD, F.
5574*
RIBET, A.
6168
RICHARD, J.
5663
RICHTER, M.
5641
RICORDEAU, P.
5903

EGEL, N.
5759
GDON, R.H.
5456
NDERKNECHT, H.
5970
NECKER, H.
5615*
VERA, R.A.
6063
BERT, A.
5830*
BERTS, C.J.
6027
BERTSON, J.S.
5487*
BINSON, J.W.L.
5478*
CHE, P.
6201
DIONOVA, A.P.
5703
DKINA, M.V.
6084
EDER, W.J.
5900
EHRIG, K.L.
5598
HLING, S.
5605
THERFORD, C.
5879*
YMANN, F.B.
6016
YTERS, L.
6115*
ABSTEV, V.G.
5729
DELL, W.B., JR.
6133
VKIN, V.L.
5939
ZHNEV, V.E.
6092
CHATELLO, C.R.
6186
CHDEVA, H.S.
5943
DKOVSKAYA, A.N.
6145
EGESSER, F.
5740
GAIDAK, V.N.
5822
ITO, H.
5982*
ITO, K.
5518*, 5520*
KAI, K.
5994*
KUMA, R.
5596
LETTA, F.J.
5796
LMON, J.
6115*
LTZ, N.J.
5926
LVADOR, R.A.
5564*

SAMOILOVA, M.A.
5804, 6145
SANADI, D.R.
5452
SANCES, A., JR.
5536
SANCHEZ, R.F.
6209
SANDER, J.
5550
SANDSTEAD, H.H.
5859
SANFORD, P.A.
5491*
SANOWSKI, R.A.
5759
SANTORO, E.
6207
SANTULLI, T.V.
6208
SANUI, H.
5449
SARDESAL, H.V.
6266
SARGENT, T.W.
5982*, 6114*
SARLES, H.
5887*
SATO, S.
6004
SATO, Y.
5621*
SAUER, F.
5582*
SAUVEGRAIN, J.
5731
SAVAGE, C.R.
5464
SAVARY, M.
5739
SAVARY, P.
5625
SAVCHENKO, A.P.
5729
SAVCHENKO, E.D.
6192
SAVELIEV, V.S.
5843
SAVELJEV, V.S.
5841
SAWADA, M.
5497
SAXENA, S.R.
6180
SAZIKI, R.
5829*
SCALISE, G.
6107
SCHAFER, D.E.
5626
SCHAPIRO, H.
5522, 5541
SCHEDRUNOV, V.V.
5849
SCHEIN, C.J.
5932, 6149
SCHENK, R.K.
5892
SCHENKER, S.
6029

SCHERBATENKO, M.K.
5704
SCHEUER, P.G.
6125
SCHEUER, P.J.
5672
SCHIMMELPFENNIG, R.
6042
SCHIMMELPFENNIG, W.
6042
SCHINKE, G.
6153
SCHISTAD, G.
5820
SCHMID, A.
5623
SCHMIDT, H.
5971
SCHMIDT, R.
5641
SCHMITT, J.
5677
SCHNAITMAN, C.
5440*
SCHNEIDER, J.
5680
SCHNEIDER, K.M.
5945
SCHNEIDER, K.W.
6198
SCHOFFENIELS, E.
5488*
SCHOLCH, C.
5752
SCHOTT, H.C.W.
6274
SCHRETLEN, E.
6077
SCHRIEFERS, K.H.
6197
SCHULLINGER, J.N.
6208
SCHULTKA, R.
5641
SCHUSTER, G.
5941
SCHWARTZ, M.
5951
SCHWARZ, R.
6239
SCHWEITZER, F.A.W.
5902
SCOTT, H.W., JR.
5859
SCOTT, I.H.K.
5902
SCOTT, S.M.
5967
SCOTTO, J.
6055*
SEDGWICK, C.E.
5866
SEETHARAM, B.
5410*
SEEWANN, H.L.
6237
SEGNITZ, R.H.
6205
SEHGAL, A.K.
5867

SEIFFERT, K.E.
5643
SFITZ, H.J.
5635
SEMYONOV, A.P.
6048
SENGUPTA, S.
5626
SENTKERESTI, B.
5750
SERCK-HANSSEN, A.
6065, 6070
SEREBRIANTSEV, V.K.
5972
SEREBRO, H.A.
5790
SEREDIUK, N.N.
5810, 5851
SERGEEV, V.V.
5808
SEROR, J.
6201
SEZAKI, H.
5477*
SHABANOV, A.N.
5803, 5973
SHAKHGILDYAN, I.V.
6084
SHALIMOV, A.A.
5814
SHAPKIN, V.S.
6036
SHAPKINA, A.P.
6083
SHARMA, M.L.
6015
SHARMA, N.L.
6224
SHARMA, O.
6125
SHAW, A.
6207
SHEAR, L.
6123
SHEARMAN, D.J.C.
6214
SHEEHAN, W.
6229
SHEFFER, R.YA.
6271
SHEKHTER, I.A.
5710
SHELDON, H.
5465
SHER, M.H.
5774
SHERLOCK, S.
6120, 6125
SHERMAN, F.E.
5925
SHIMELIOVICH, L.B.
5711
SHINOHARA, R.
5596
SHISHOVA, E.K.
5471
SHIU, M.H.
5985*
SHKROB, O.S.
5807
SHKURKIN, C.J.
6114*
SHLYAKHTENKO, L.I.
6102, 6104
SHLYGIN, G.K.
5555
SHNFIDER, V.P.
6241
SHNEIVAIS, V.B.
5471
SHORE, J.M.
6032
SHORTER, R.G.
5462, 5947*
SHTEINBERG, G.B.
6191
SHTFRN, B.M.
5708
SHWACHMAN, H.
5450
SICOT, C.
5667
SIDOROV, A.I.
5709
SIDRANSKY, H.
5990*, 6060*
SIEGELMAN, S.S.
5649*
SIEGERS, C.P.
6068
SIGSTAD, H.
5853
SILVENNOINEN, E.
6137
SILVERBERG, M.
5996
SILVERMAN, P.
5970
SIMPSON, B.R.J.
5603
SIMS, P.
5571*
SINGH, H.
5898
SIRCAR, B.
5626
SIRCUS, W.
5958, 6156*
SIRINA, L.K.
6096
SITORI, C.
5627*
SKINHOJ, P.
6099, 6100
SLAUGHTER, R.L.
6063
SLAVNOV, V.N.
5730
SLOAN, H.R.
5411*
SMALL, W.P.
5958
SMIRNOV, E.V.
6140
SMITH, B.
6171
SMITH, E.R.
5912
SMITH, R.F.
6028
SMOLNIKOV, L.A.
6193
SMYTH, D.H.
5491*
SNOEKS, T.
5861
SO, Y.C.
5549
SOLOMATINA, N.F
5807
SOLOMON, P.
6254
SOLS, A.
5585*
SOLTANI, M.E.
5439*
SOMASUNDARAM, K
5794
SONG, K.T.
5966
SOUCHARD, M.
5554
SOULSBY, E.J.L.
6268
SOYKA, L.F.
5418*
SPFNCER, J.
5655*
SPENCER, R.J.
5947*
SPIESSENS, H.
6109
SPIRO, H.M.
5741, 5931
SPRINZ, H.
6247
SREFBNY, L.M.
5556
STABILE, S.
5845
STACKER, A.D.
5862
STADELMANN, O.
5717
STAHLER, M.
6062*
STAHLHEBER, H.
5666, 596
STAHN, R.
5426*
STAIB, A.H.
5628*
STAINTHORPE, E
5612*
STAPITHANONDA,
5776
STARKA, L.
5605
STAUDT, U.
5642
STEFANESCO, J.
6254
STEFANINI, P.
6152
STEFENELLI, N.
5629*, 56
STEIGMANN, F.
5659*
STEIN, B.
6256

IN, J.A.
6059*
INITZ, H.
6256
INNES, E.
5698
LZNER, F.
5942
MPIEN, S.J.
6113*
NSON, S.
5645
RESCU, N.
5638
VENS, G.H.
5988*
BENZ, H.J.
5481*
FEL, F.B.
5427*, 5611*, 5613*,
5619*
ERNVALL, L.
5960*
CK, B.H.
5581*
CKEN, L.A.
5553*
CKL, G.
6105
KKE, K.T.
5422*
NE, R.T.
6212
EICHER, H.J.
5862
OMBERG, K.
6057*
ONG, C.G.
6126
UBELT, O.
6068
UNIN, J.M.
5603
UNIN, L.
5603
KER, F.J.
5718
, O.
6003
MAN, J.A.
5420*
, M.
6188
WARA, K.
5540
ROCHANA, K.
5777
ATME, P.V.
6215
OTERINA, L.A.
5551
OVAM, J.
5605
ERSKILL, W.H.J.
5634, 5893, 6126
SOV, N.A.
5814
HARA, F.A.
5523
BY, F.
5614*
SUSTER, G.
5929
SUTTLE, G.E.
5490*
SUYAMA, T.
5787
SUZUKI, H.
5668
SVENSSON, S.E.
5528*
SWAMINATHAN, N.
5410*
TABRIZAN, M.
5740
TACHIBANA, K.
5547
TACORIAN, S.
5531*
TAGIEV, M.G.
6102, 6104
TAGLIAFERRI, G.
6049
TAKABATAKE, E.
6056*
TAKADA, A.
6112*
TAKAGI, K.
5824*, 5829*
TAKAHASHI, T.
6116*
TAKARO, T.
5967
TAKAYANAGI, M.
5559*
TAKEUCHI, A.
6016
TAKEUCHI, J.
6112*
TAKKI, S.
5855*
TALBOT, N.
6282
TALIS, B.
6256
TAMALET, J.
5887*
TAN, D.T.D.
6113*
TAN, K.K.
5891
TANABE, M.
5875
TANAKA, F.
6169
TANAKA, S.
5954
TANAKA, T.
5758
TANDON, H.D.
5868
TAPISSIER, J.R.
6012
TARNAY, T.J.
6210
TARNOWSKI, W.
5635
TASSO, F.
5887*
TASSON, J.
5496*
TATARINOV, Y.S.
5651*
TAVADIA, H.B.
5907
TEJWANI, G.A.
5438*
TELKOV, N.A.
6038
TELNOV, Y.A.
5724
TEMPLIN, R.
5653*
TEOTIA, M.
6224
TEOTIA, S.P.S.
6224
TEPPER, S.A.
5565*
TESTA, H.J.
5652*
TEWS, J.K.
5493*
THAKUR, A.K.
5626
THAYER, W., JR.
5934
THELEN, M.
5676
THEMANN, H.
6054*
THOMAS, C.G., JR.
5933
THOMAS, D.
6138
THOMPSON, J.H.
5542
THOMSON, C.G.
5958, 6156*
TINTAREANU, J.
6254
TITEICA, M.
5646*
TITOLI, F.
6183
TITOV, R.V.
5973
TKACH, V.N.
6195
TOKIN, I.B.
6190
TOLINS, S.
6173
TORI, G.
5671
TORLONE, V.
6183
TORRANCE, H.B.
5652*
TRAUT, G.
6165
TRELSTAD, R.L.
5983*
TRENHOLM, H.L.
6061*
TREY, C.
6088
TRINKLE, J.K.
6205
TROGLIA, O.M.
5622

TROITSKY, R.A.
5938
TRUEMAN, K.R.
5778
TRUONG, T.K.
5675
TRUSOV, V.V.
5888
TSCHUDY, D.P.
6059*
TSUJI, T.
6106
TSYPKIN, V.I.
6084
TULEJA, C.W.
5796
TURNBULL, R.B.
5909
UDAWAT, J.P.
6015
UGOLEV, A.M.
5498
UGRIUMOV, B.L.
6091
UMBRUMYANTS, O.A.
5841, 5843
URIEL, J.
5651*
USARDI, M.M.
5627*
USOVA, N.A.
5706
USPENSKY, V.M.
5847
USTINOV, V.N.
5524
VAAMONDE, C.A.
6127
VAAMONDE, L.S.
6127
VAIDYA, A.B.
6214
VAILLE, C.
5554
VAKALIUK, P.M.
5810
VAKILI, C.
5774
VALENCIA-PARPARCEN, J.
5765*
VALENKEVICH, L.N.
6111
VALETTE, G.
5527
VAN BADEN, M.
5870
VAN DAMME, L.
5861
VAN DER KLOOT, J.F.V.R.
5869
VANDERZWAAG, R.
6276
VAN ZWIETEN, P.A.
5534*
VASCONEZ, L.O.
5792
VASILENKO, V.K.
5806
VELICAN, C.
5531*
VELICAN, D.
5531*
VENHO, V.M.K.
5855*
VENKATACHALAM, B.
5790
VENKATACHALAM, M.A.
5439*
VEPRINSKAYA, S.I.
5723
VERDONK, G.
5895
VEREBELY, K.
5607
VERNEY, E.
5990*, 6060*
VERNON, J.K.
5866
VERSIECK, J.
5496*
VERSTRAETE, M.
6189
VERT, P.
6148
VEYRET, V.
5818
VIDLAKOVA, M.
5991*
VIGNERI, R.
5685
VIHKO, R.
5448
VILLA, F.
5659*
VILSHANSKAYA, F.L.
6191
VINCE, A.
6026, 6184
VINOGRADOV, V.V.
6143
VISHNEVSKY, V.A.
6143
VISICK, J.H.
5879*
VITCHTOMOVA-OSIPENKOVA, T.K.
6192
VLASOV, P.V.
5722
VOELKEL, H.
5856
VOGT-MOYKOPF, I.
5752
VOLKER, P.
6162
VOLKODAEVA, A.A.
6103
VOLODKO, V.P.
6006
VOLPE, J.A.
6213
VON BREHM, H.
5914
VON OLDERSHAUSEN, H.F.
6081
VOORHEES, A.B., JR.
5497, 6128
VOROBIEVA, T.V.
5555
VRIND, H.M.
5795
VYAS, B.K.
5797
WADHWA, S.N.
5868
WAGLE, D.S.
5990*
WAGNER, M.
5913
WAGNER, O.
5674
WAKIL, S.J.
5423*, 5441
WALKER, C.D.
6029
WALKER, R.J.
5958
WALKER, W.D.
5603
WALKER-SMITH, J.
5679
WALSH, J.H.
5700
WALTZ, A.
5534*
WAN, B.Y.C.
5537
WANGENSTEEN, S.I
5630*
WANKE, M.
5961*
WARD, C.O.
5501
WARDEN, H.E.
6210
WARNATZ, H.
6222
WARREN, K.S.
6269
WATANABE, M.
5787
WATANABE, N.
5786
WATERHOUSE, J.A.
5877*
WATERMAN, M.U.
5458
WATKINSON, G.
5949
WATSON, C.E.
6272
WATT, A.J.
5517*
WEEDER, R.S.
6134
WEEKE, B.
5878*
WEGENER, F.
6068
WEGMANN, R.
6069, 6087
WEILL, J.
5574*
WEINFELD, H.
5464
WEINTRAUB, L.R.
5467
WEISER, M.M.
5618*
WEITERING, J.G.
5485*

LBOURN, R.R.
5655*
LCH, R.M.
5564*
LLER, J.L.
5562*
LLMER, H.K.
6162
STERGAARD, H.
5878*
STERMANN, K.
5628*
RAY, M.S.
5490*
ERG, G.S.
6061*
MANN, W.D.
6244
DEMANN, B.
5941
E, C.C.
6216
BURN, R.L.
5997
L, R.M.
5661*
LERSON, J.T.
5983*
LIAMS, J.F.
6268
LIAMS, R.
5882
LIAMSON, J.R.
5557*
LITAL, G.H.
5874
SON, J.D.
5602, 5636
, M.S.
5936
CHELL, H.S.
5982*, 6114*
E, L.
5831
HRLE, R.
6200
F, E.
5653*
FF, S.M.
5983*
PERT, E.
5634
WONG, K.H.
6028
WONG, P.
5614*
WOODCOK, N.W.
5493*
WOODWARD, F.R.
5540, 5792
WOSTMANN, B.S.
5492*
WREN, R.E.
6270
WRIGHT, D.J.
6276
WRIGHT, R.
6090
WRUBLE, L.D.
5522, 5541
WYCHULIS, A.R.
5756
WYNNE, E.S.
6230
WYSHAK, G.
5931
YACHMENEV, A.V.
5722
YALOW, R.
5700
YALOW, R.S.
5543
YAMAGATA, K.
5834
YAMAGISHI, M.
5732*
YAMAMOTO, M.
6170
YAMANE, Y.
5994*
YANO, Y.
5987*
YARDLEY, J.H.
6158*
YAREMA, I.V.
6011
YONEMOTO, T.
5732*
YOSHIDA, K.
5758
YOUMANS, C.R., JR.
5791
YOUNGER, R.K.
5859
YU, S.F.
5891
YUNIS, E.
5925
ZAKO, Z.
5750
ZANETTI, M.E.
5579*
ZAPOLSKI, F.J.
5505
ZAPRUDNOV, A.M.
6001
ZAUNBAUER, W.
5674
ZAVERI, M.P.
5678
ZEEGEN, R.
6026
ZEIDLER, D.
5752
ZEITOUN, P.
5455
ZELDER, O.
6223
ZETTERGREN, L.
6203
ZGONNIK, T.D.
5727
ZHIDOVINOV, G.E.
6154
ZHURAVLEV, V.A.
6036
ZIMMERMANN, H.D.
5881
ZMYZGOVA, A.V.
6096
ZOTTI, E.F.
5825*
ZUBOV, N.A.
6250
ZUFAROV, K.A.
5471
ZUIDEMA, G.D.
6136
ZUMOFF, B.
6130
ZUNTER, F.
5915
ZUPPINGER, K.
5959

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- ABDOMEN
  - ACUTE, PANCREATITIS, TRANSAMINASE, CREATINE PHOSPHOKINASE, DUODENAL JUICE, STOOLS (5666)
  - AMEBIC DYSENTERY, INTESTINAL COMPLICATIONS, HEPATIC AMEBIASIS, FEVER (6253)
  - IATROGENOUS INJURY, PERFORATION, STENOSIS, JAUNDICE (6221)
  - PAIN, CONVULSIONS, SHIGELLOSIS, COPROCULTURES, ANTIBIOTICS, MENINGITIS, INFANTS (5740)
  - RADIONUCLIDE, AORTOGRAPHY, GAMMA SCINTILLATION CAMERA (5671)
  - RECURRENT PAIN, CHILDREN, IRRITABLE BOWEL SYNDROME (6212)
  - TRAUMA, PSEUDOMYXOMA PERITONEI, INTESTINAL RUPTURE, CACHEXIA, TUMOR, DIGESTIVE DIFFICULTIES (6239)
  - WHIPPLE'S DISEASE, CORYNEBACTERIA, DIFFUSE PAIN, FROTHY HISTIOCYTES, ELECTRON MICROSCOPY (5887)*
- ABSCESS
  - HEPATIC, DRUG INFUSION, UMBILICAL VEIN (6039)
- ABSORPTION
  - ASPIRIN, SULFONAMIDE, PH, IN VITRO MODEL (5487)*
  - CELL TRANSPORT, GASTROINTESTINAL TRACT (5498)
  - CHOLESTEROL, METABOLISM (5682)
  - COLON, EDTA, ULCERATIVE COLITIS (5951)
  - DIGOXIN, PERFUSION STUDY, INTESTINE, RAT (5504)
  - DRUG, INTESTINAL, MESENTERIC BLOOD FLOW (5501)
  - DRUG, INTESTINE, DAMAGE, TRIPARANOL, IRRADIATION, RAT (5855)*
  - DRUG, SMALL INTESTINE, POLYSORBATE 80, OLEIC ACID, RAT (5502)
  - FAT, MARASMUS, JEJUNUM, CHILDREN (6224)
  - GASTROINTESTINAL TRACT, KEROSENE, PNEUMONITIS (5497)
  - INTESTINAL, MOTILITY, HYPOTHERMIA, PERFUSION, O2 UTILIZATION (5615)*
  - INTESTINE, CALCIUM, PHOSPHORUS, LACTOSE TOLERANCE (5612)*
  - INTESTINAL, EVERTED GUT TECHNIQUE (5479)*
  - INTESTINAL, FREE AMINO ACIDS, PROTEIN (5483)*
  - INTESTINE, HEMOGLOBIN, IRON, RAT (5490)*
  - INTESTINE, MALARIA, AMINO ACID (6275)
  - IRON, CIRRHOSIS, PORTACAVAL SHUNT, DOGS (6114)*
  - GASTROINTESTINAL TRACT, TAURINE, GLYCINE, ASPIRIN, SMALL INTESTINE (5503)
  - PROTEIN, AMINO ACIDS, JEJUNUM, DUODENUM (5482)*
  - SMALL INTESTINE, AMINO ACID, CARNOSINE, HARTNUP DISEASE (5475)*
  - SMALL INTESTINE, DUODENUM, THIRY-VELLA LOOPS, DOG, L-ALANINE, SODIUM EFFECT (5489)*
  - SMALL INTESTINE, PEPTIC ULCER (5888)
  - STOMACH, ETHANOL, ACID OUTPUT (5494)
  - SULFAGUANIDINE, SMALL INTESTINE, BIL SALT (5477)*
- ACHALASIA
  - ESOPHAGEAL, SURGERY, PH, REFLUX (575
  - ESOPHAGUS, DYSPHAGIA, CARDIAL TUBE, CARDIOMYOTOMY, DILATATION (5760)
  - ESOPHAGUS, MANAGEMENT (5751)
- ACID
  - STOMACH, ACHLORHYDRIA, FREEZING, HEATING, ULCER TREATMENT (5828)*
- ACID-BASE
  - ACID OUTPUT, STOMACH, DISTENTION, STIMULUS, HISTAMINE, PENTAGASTRIN (5533)*
  - ACID PRODUCTION, GASTRIC CARCINOMA (5769)
  - ALPHA-KETO ACID, TYROSINE AMINOTRAN FERASE, LIVER, EMBRYO (5463)
  - GASTRIC ACID, CEREBRAL INHIBITION, SECRETION ATROPINE, INSULIN, HIST MINE, SEROTONIN (5536)
  - GASTRIC SECRETION, ULCER OPERATION, STOMACH TUBE, PH (5653)*
  - STOMACH, EROSION, ALKALI INGESTION (5793)
- ACIDITY
  - ATP, SODIUM BINDING, MAGNESIUM BIND ING, CELLULAR MEMBRANE, EDTA, LIV MICROSOME (5449)
  - STOMACH, TELEMETRIC DETERMINATION, ACID SECRETION (5548)
- ACIDITY TITRATION
  - DIAGNOSTIC PROCEDURE, STOMACH, GAST ACID, HEIDELBERG PH CAPSULE (5656
  - PHENOLPHTHALEIN, ACID OUTPUT (5532)
- ADHESION
  - NOBLE OPERATION, ILEUS, PERITONITIS APPENDICITIS, INTESTINAL TUMOR (5856)
- ADRENAL
  - CORTEX, HYDROCORTISONE ACETATE, GLUCOKINASE, LIVER, ESTRADIOL (5578)*
  - CORTEX, PEPTIC ULCER, GLUCOCORTICOI (5850)
  - FETAL, STEROID, FETAL LIVER (5448)
- ALCOHOL
  - ABSORPTION, STOMACH, EMPTYING, ACI OUTPUT (5494)*
  - ACETONE, ACETALDEHYDE, TOXICITY, METABOLISM, BLOOD LEVEL (6061)*
  - ADH, LIVER, TOXICITY, PROTEIN, RA (6062)*
  - ALCOHOLISM, ACUTE PANCREATITIS (59
  - CARBOHYDRATE METABOLISM, GLYCOGEN GLYCOGENOLYSIS, PARTIAL HEPATECT RAT (5999)
  - DEHYDROGENASE, LIVER, INACTIVATION HORSE (5445)
  - GLYCEROL, SERUM GLYCERIDE, DIET, METABOLISM (5935)
  - ACUTE INTOXICATION, SHORT-TERM, LO TERM, GLUCONEOGENESIS, KREBS CYC LIPID METABOLISM, PROTEIN METABO ISM, RAT (6082)
  - LIVER, ENZYME, METABOLISM (5444)

LIVER METABOLISM, GLUCONEOGENESIS (6075)
LIVER MICROSOME, ENZYME, UDPGT ACTIVIT (5604)
LIVER, TOXICITY, CIRRHOSIS, CHRONIC HEPATITIS (6122)
LIVER, TRIGLYCERIDE (6071)
LIVER, URIDINE, RNA, PARENCHYMA, RAT (5574)*
OXIDATION, LIVER, MICROSOMES, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)*
OXIDATION, MICROSOMAL, LIVER, RAT, HUMAN (5590)*
PHENETHYL, HEPATOMA CELL, RAT, NUCLEIC ACID (5989)*
PORTACAVAL SHUNT, PROPHYLAXIS, HEPATIC ENCEPHALOPATHY, PEPTIC ULCER (6233)

NE
HISTAMINE, CONTRACTILITY, SENSITIVITY (5515)*
HISTAMINE, GASTRIC SECRETION, GASTRIC ACID, PEPSIN, HEXAMETHONIUM (5535)*
HISTAMINE, GASTRIC SECRETION, VISUAL DEPRIVATION, DOG (5541)
NITROSAMINES, NITRITES, CARCINOGENS, STOMACH, METHEMOGLOBIN, PH (5550)
SEROTONIN, METABOLISM, CIRRHOSIS, ACUTE VIRAL HEPATITIS (6117)
SEROTONIN, SMALL INTESTINE, MOTILITY, COHERIN, BIEBL LOOPS, DOG (5510)*

NO ACID
ABSORPTION, INTESTINE (5482)*
ABSORPTION, INTESTINE, MALARIA (6275)
ABSORPTION, SMALL INTESTINE, DUODENUM, THIRY-VELLA LOOPS, SODIUM EFFECT, DOG (5489)*
ACIDIC, FREE, MOLECULAR WEIGHT (5483)*
ACUTE VIRAL HEPATITIS, CIRRHOSIS, GAMMA GLOBULIN (6013)
AMINOACIDURIA, CIRRHOSIS, DISACCHARIDE INTOLERANCE, MALTOSURIA (5898)
ARGININE, MALIC ACID, LIVER DISEASE, ACUTE VIRAL HEPATITIS, CIRRHOSIS (6044)
CARNOSINE, ABSORPTION, SMALL INTESTINE, ALANINE, HISTIDINE (5475)*
CATALASE CHEMISTRY (5470)
CYSTINE, ESSENTIAL, LIVER, FETUS, CYSTATHIONASE, TRANSSULFURATION, CYSTATHIONINE, METHIONINE (5420)*
CYSTEINE, HOMOCYSTEINE, OXIDATION, LIVER (5576)*
ENZYMATIC ACTIVITY, LIVER (5990)*
JEJUNUM, INORGANIC ION CONTENT, L-ALANINE (5476)*, (5488)*
METABOLISM, LIVER, INOSPICENE, ARGININE, NUCLEIC ACID (5568)*
METHIONINE, GERMFREE ANIMALS, DIET, MINERALS, RATS, MICE, GUINEA PIG (5640)
SMALL INTESTINE, AGING, NITROGEN, RAT (5443)
TRANSPORT, LIVER, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)*
TRANSPORT, SODIUM SENSITIVITY, INTESTINE (5478)*

ONIA
HEPATIC ENCEPHALOPATHY (6029)
TRANSPORT, METABOLISM, GASTROINTESTINAL TRACT (5634)

AMPULLA OF VATER
DISCONNECTION, GASTRIC RESECTION (6151)

ANALGESIC
ASPIRIN, ABSORPTION, PH, IN VITRO MODEL, SALICYLIC ACID (5487)*
ASPIRIN, ABSORPTION, SMALL INTESTINE, TAURINE, GLYCINE (5503)
ASPIRIN, GASTRIC LESION, 2-DEOXYGLUCOSE, HCI, VAGOTOMY, MUCOSAL EROSION, GASTRIC HEMORRHAGE (5763)*

ANASTOMOSIS
BILE-DUCT, JEJUNAL LOOP, HEPATICOJEJUNO-DUODENOPLASTY (6020)
COLON, RECTUM, CECAL FISTULA, TUMOR (5912)
ILEORECTAL, ULCERATIVE COLITIS (5950)
PORTACAVAL SHUNT, ESOPHAGUS, BLEEDING VARICES, CIRRHOSIS (6113)*
PORTACAVAL SHUNT, IRON ABSORPTION, CIRRHOSIS, DOG (6114)*
PORTACAVAL SHUNT, PORTAL HYPERTENSION, CIRRHOSIS, SURGERY (6028)
PORTACAVAL SHUNT, PROPHYLAXIS, LIVER ENCEPHALOPATHY, PEPTIC ULCER, ALCOHOLISM (6233)
SPLENOPORTAL, BILIODIGESTIVE, HETEROTOPIC TRANSPLANTATIONS, PIGS (6012)

ANEMIA
CHRONIC, MECKEL'S DIVERTICULUM (5870)
CHRONIC, NEUROFIBROMATOSIS, GASTROINTESTINAL TRACT, HEMORRHAGE (6245)
HYPOCHROMIC, GASTRIC RESECTION, WEIGHT CONTROL, PEPTIC ULCER, HEMORRHAGIC ULCER (5783)

ANESTHESIA
HALOTHANE, ACUTE NON-VIRAL HEPATITIS, ERYTHROID APLASIA (6064)
HALOTHANE, ACUTE NON-VIRAL HEPATITIS, IRRADIATION THERAPY, UTERINE CANCER (6076)
HALOTHANE, HEPATIC NECROSIS (6074)
LIVER, DOG (5603)

ANOMALY
ABDOMINAL, SITUS INVERSUS, CHOLELITHIASIS, NON-ROTATION (6216)
CONGENITAL, ANNULAR PANCREAS, DUODENAL OBSTRUCTION (5956)
CONGENITAL, BILE DUCT, ICTERUS (6033)
CONGENITAL, PYLORIC STENOSIS, PYLOROMYOTOMY (5770)
CONGENITAL, ATRESIA, SMALL INTESTINE, OBSTRUCTION, HEMANGIOMA, VOLVULUS, NEONATE (5860)
CONGENITAL, PYLORIC, STENOSIS, SURGERY (5820)
DUODENAL DUPLICATION, SURGERY, CYSTOJEJUNOSTOMY (5777)

ANTIBIOTIC
DYSBACTERIOSIS, INTESTINE, STREPTOMYCIN, TETRACYCLINE, PENICILLIN (6191)
GENTAMYCIN, STERILIZATION, SURGERY, COLONIC FLORA, ANTIBACTERIAL ACTION (5941)
INTESTINAL FLORA, TETRACYCLINE, DOXYCYCLINE, BACTERIAL CULTURE, SIDE EFFECTS (5631)*
LITHOCHOLIC ACID, BILE ACID COMPOSITION, CHOLESTEROL, BACTERIAL METABOLITES (5587)*

ANTICHOLINERGIC
  ANTISPASMODIC, PENTAPEPTIDE, METHYLSULFATE (5523)
ANTIGEN
  ACUTE VIRAL HEPATITIS, ADOLESCENT (6100)
  ACUTE VIRAL HEPATITIS, EPIDEMIC (6099)
  ASCARIS, HOST COMPONENTS, IMMUNITY (6268)
  AUSTRALIA, ACUTE LIVER DISEASE, CHRONIC LIVER DISEASE, CIRRHOSIS, HEPATITIS (6050)
  AUSTRALIA, ACUTE VIRAL HEPATITIS (6090)
  AUSTRALIA, ACUTE VIRAL HEPATITIS, IMMUNOLOGY, PARTICLES (5454)
  AUSTRALIA, ACUTE VIRAL HEPATITIS, RADIOIMMUNOASSAY (5700)
  AUSTRALIA, ACUTE VIRAL HEPATITIS, SERUM HEPATITIS (5699)
  AUSTRALIA, FAMILY, ACUTE VIRAL HEPATITIS, DIAGNOSIS, CARRIER (6087)
  AUSTRALIA-SH, ACUTE VIRAL HEPATITIS (6098)
  AUSTRALIA-SH, CHRONIC LIVER DISEASE, DRUG ADDICTS, DENMARK (6101)
  CHOLERA, IMMUNOLOGY, RAT FOOT EDEMA MODEL (6175)
  GASTRIC CANCER, BLOOD GROUPS (5775)
  SH, SERUM HEPATITIS, DRUG USERS (5695)
  VI-, TYPHOID FEVER THERAPY (6241)
ANUS
  COLLOID CARCINOMA, RECTUM, MUCUS (5907)
  GRACILIS ANOPLASTY, INCONTINENCE (5911)
  HEMORRHOID. RECTUM. PATHOGENESIS. ANATOMY (5939)
  PERIANAL PAGET'S DISEASE, RADIOGRAPHY, SURGERY (5908)
  RECTOSIGMOID RUPTURE, ILEAL EVISCERATION (5930)
  RECTUM, FISTULA, SURGERY (5731)
APPENDIX
  ACUTE APPENDICITIS, DIAGNOSIS, X-RAY (5704)
  ACUTE APPENDICITIS, MORBIDITY, MORTALITY (5900)
  ACUTE APPENDICITIS, PERITONITIS (5937)
  ADENOCARCINOMA, ACUTE APPENDICITIS (5901)
  APPENDECTOMY, APPENDICITIS, GERIATRICS (5928)
  APPENDECTOMY, CANCER RISK (5927)
  APPENDICITIS, ACUTE, CHRONIC, ILEOCECUM, CROHN'S DISEASE (5861)
ASCITES
  CHYLOUS, DIAGNOSIS, SMALL INTESTINE, LYMPHATIC, TRIGLYCERIDE, FATTY ACID (6218)
  CHYLOUS, INGUINAL HERNIA, INFANT, LYMPHATICS (6207)
  CIRRHOSIS, LIVER, EDEMA, COMPARTMENTALIZATION (6123)
  PORTAL HYPERTENSION, HEPATIC LYMPH, CIRRHOSIS, HYPOALBUMINEMIA (6217)
AUTORADIOGRAPHY
  METAL ISOTOPE, SMALL INTESTINE, PANETH CELL, COLON (5481)*
BACTERIA
  COLON RESECTION, ILEOSTOMY (5931)
  CORYNE-, WHIPPLE'S DISEASE, LYMPHANGIECTASIA, FROTHY HISTIOCYTES, PLASMODIA (5887)*
  DIARRHEA, VIBRIO/PARAHEMOLYTICUS (6181)
  DYSENTERY, DIAGNOSIS (5712)
  DYSENTERY, SALMONELLA, SHIGELLA, E.COLI, INFANT (6169)
  E. COLI, RESISTANCE TYPE, INFANTS, STOOLS (6164)
  INTESTINE, FECES (6230)
  LARGE INTESTINE, ANTIBIOTICS, CANDID SPECIES, STREPTOCOCCUS, PROTEUS, PSEUDOMONAS, KLEBSIELLA (5631)*
  SALMONELLA, ENTERITIDIS, ENDOTOXIN, LIVER, SPLEEN, RAT, MOUSE (5983)*
  SALMONELLA, ENTEROCOLITIS, DIARRHEA, RAT (6247)
  SALMONELLA, GASTROENTERITIS, EPIDEMIOLOGY (6249)
  SALMONELLA, SALMONELLOSIS, TREATMENT (6174)
  SALMONELLA, TYPHOID, PARATYPHOID, EPIDEMIC, STOOL TESTS, ELIMINATION GREEN SALAD (6159)
  SHIGELLA, SONNE DYSENTERY, EPIDEMIOLOGY, NEW ZEALAND (6274)
  SMALL INTESTINE, FECES, MALABSORPTIO (6184)
  TYPHOID FEVER, DIAGNOSIS, ETIOLOGY, TREATMENT, EPIDEMIOLOGY, SALMONELL (6200)
BACTERIAL DISEASE
  SHIGELLOSIS, CHILDREN, CONVULSIONS, COPROCULTURES, NEONATAL, SHIGELLA SONNEI, ANTIBIOTICS, MENINGITIS, SEPTICEMIA (5740)
BILE
  ACID, CHOLESTEROL METABOLISM (5636)
  ACID, EXCRETION, CONJUGATION, CONTAMINATION, EFFECT, RAT (5492)*
  ACID, LIVER, SMALL INTESTINE, CECUM, LITHOCHOLIC ACID, ANTIBIOTIC EFFEC (5587)*
  BILE-DUCT, SURGICAL TECHNIQUE, JEJUNAL LOOP, HEPATICO-JEJUNO-DUODENOPLASTY (6020)
  CIRRHOSIS, LYMPHOCYTE (6125)
  EXCRETION, CURARE COMPOUNDS, LIPID SOLUBILITY, PERFUSED LIVER, RAT (5485)*
  FLOW, MOTILITY, STOMACH, DUODENUM (5526)
  FLOW RATE, BARIUM, DICLOXACILLIN (5570)*
  GLUTETHIONIDE, HUMAN, GALLBLADDER (5606)
  LIPID CONTENT, MACROMOLECULAR ASSEMBLIES, BILE SALTS, CALCULOUS, ACALCULOUS, GALLSTONE (5436)*
  LIVER FUNCTION, THYROID, HEPATIC BLOOD FLOW (6040)
  PEPTIC ULCER, SALIVA PROTECTION, GASTRIC JUICE, DUODENUM (5832)
  SALT, ABSORPTION, SMALL INTESTINE, SULFAGUANIDINE (5477)*
  SALT, ADSORPTION, CHOLESTYRAMINE, TEMPERATURE, IN VITRO STUDIES (5486)*
  STEROIDS, GLUCURONIDE, FISTULA, GALLBLADDER (5682)
BILE DUCT
  ACTIVITY, CHOLEDOCHODUODENAL SPHINC

  - TER, DRUG EFFECTS, TERBUTALINE, ISOPRENALINE (5513)*
  - COMMON, DRAINAGE, GALLBLADDER REMOVAL, CYSTIC DUCT (6140)
  - COMMON, LITHIASIS, SURGERY (6152)
  - COMMON, OCCLUSION, GASTRIC TUMOR, JAUNDICE (5796)
  - COMMON, SYMPATHETIC BLOCK, CHOLEDOCHODUODENAL PASSAGE (6149)
  - COMMON, TRANSECTION, BLUNT TRAUMA, CHOLEDOCHODUODENOSTOMY (6133)
  - CONGENITAL MALFORMATION, CHRONIC JAUNDICE, HEPATOMEGALY, PORTAL HYPERTENSION, BILIARY CIRRHOSIS, HYPERPLASIA, PAIN (6131)
  - CONGENITAL MALFORMATION, ICTERUS (6033)
  - CYST, DILATATION, INTRAHEPATIC DUCT (6136)
  - EXTRAHEPATIC, CARCINOMA, RADIOLOGY (6138)
  - EXTRAHEPATIC, INCIDENCE, LOCATION (5474)
  - HEPATIC, CALCULI, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)
  - OBSTRUCTION, ESTRADIOL METABOLISM, STEROID (6130)
  - OBSTRUCTION, RADIOLOGY, MANOMETRY (5708)
  - PERFORATION, NEONATE, SURGERY, CHOLANGIOGRAPHY (6148)
  - RETROGRADE FILLING, CHOLANGIOGRAPHY, CATHETER, ANASTOMOSIS, DUODENUM (5676)
  - SPASM, MOTILITY (5570)*
  - STONE, CHOLANGIOGRAPHY (5690)
  - SURGERY, DUODENUM, HEMATOMA, GALLBLADDER (5813)
  - SURGERY, HEPATICO-JEJUNO-DUODENOPLASTY, TECHNIQUE, JEJUNAL LOOP (6020)
- IARY TRACT
  - BILIFUGE ''PLAN'', CLINICAL IMPROVEMENT, HEPATIC DISEASE, PROPHYLAXIS (6095)
  - CARDIAC UPPER ABDOMEN SYNDROME, LIVER, STOMACH, PANCREAS (6198)
  - CHOLANGIOGRAPHY, ERROR (5697)
  - CHOLEDOCHODUODENOSTOMY (6143)
  - CHOLESTASIS, ACUTE VIRAL HEPATITIS, JAUNDICE, DIAGNOSIS (6097)
  - CHOLESTASIS, INTRAHEPATIC, RECURRENT, IDIOPATHIC, JAUNDICE, PRURITIS (6016)
  - CHOLESTASIS, JAUNDICE, PRURITIS, XANTHOMA, PHOSPHATASE ACTIVITY, LAPAROSCOPY, RADIOGRAPHY (6118)
  - CIRRHOSIS, CHRONIC CHOLESTASIS, NUTRITION (6120)
  - FISTULA, X-RAY, DIAGNOSIS (5706)
  - HYPERTENSION, HEPATIC INSUFFICIENCY, CIRRHOSIS, TUMOR, TREATMENT (6011)
  - LITHIASIS, CHOLECYSTECTOMY, SUTURE, SURGERY (6137)
  - OBSTRUCTION, STONES, CHOLEDOCHAL CYST, STRICTURE (6150)
  - PERFORATION, PERITONITIS, OPISTHORCHOSIS (6250)
  - PHOSPHOLIPID SYNTHESIS, GALLSTONE, SECRETION (6129)
  - SCLERODERMA, LIVER (6010)
- RUBIN
  - HYPERBILIRUBINEMIA, NEONATAL JAUNDICE, PHENOBARBITAL (6220)
  - HYPERBILIRUBINEMIA, THERAPY, ENZYME INDUCTION (5469)
  - RHESUS INCOMPATIBILITY, NEWBORN INFANT, HEMOLYTIC JAUNDICE, FREE BILIRUBIN (6003)
- BLOOD VESSEL
  - CELIAC ARTERY, SUPERIOR MESENTERIC, INFERIOR MESENTERIC, FAT, ABDOMEN (6189)
  - CELIAC OCCLUSION, HEMORRHAGE, MELENA, DIAGNOSIS, ANGIOGRAPHY, PRE-OPERATIVE DIAGNOSIS (5674)
  - HEPATIC ARTERY, PORTAL VEIN, FLOW, RESISTANCE (5630)*
  - HEPATIC ARTERY, LIGATION, COLLATERAL CIRCULATION, DEARTERIALIZATION, ANGIOGRAPHY (5981)*
  - INFERIOR VENA CAVA, HEPATIC PORTION, MEMBRANOUS OBSTRUCTION, SURGERY (6178)
  - INTERNAL ILIAC ARTERY, LIGATION, HYSTERECTOMY, LYMPHADENECTOMY (6225)
  - MESENTERIC ARTERY, HYPERTENSION, NORADRENALINE, RAT (6226)
  - MESENTERIC ARTERY, OCCLUSION, PERISTALSIS, DOG (6170)
- CALCULUS
  - BILE DUCT, CHOLANGIOGRAPHY (5690)
  - BILIARY OBSTRUCTION, CHOLEDOCHAL CYST, STRICTURE (6150)
  - GALLBLADDER, BILE, LIPID CONTENT, CALCULOUS, ACALCULOUS, BILE SALTS (5436)*
  - GALLBLADDER, ILEUS, RADIOLOGY, DUODENUM, JEJUNUM (5857)
  - HEPATIC DUCT, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)
- CANCER
  - CARDIA, ESOPHAGUS, RESECTION, RADIOTHERAPY (5756)
  - CECUM, MUCOSA (5943)
  - CELLS, STOMACH, BLOOD GROUPS, ANTIGEN (5775)
  - COLON, DIAGNOSIS (5904)
  - COLON, SURVIVAL, SURGERY (5909)
  - COLORECTAL, COLON RESECTION (5932)
  - DUODENAL PAPILLA, RADICAL SURGERY (5803)
  - DUODENUM, PAPILLA, SURGERY (5814)
  - ESOPHAGUS, CYTO-DIAGNOSIS (5665)
  - GASTRIC, EARLY SURGERY, GASTRECTOMY (5816)
  - GASTRIC, RESECTION (5822)
  - GASTRIC, THIAMINE METABOLISM (5812)
  - LARGE INTESTINE, ADHESION (5938)
  - LIVER, ALPHA-FETOPROTEIN, SEROLOGICAL DIAGNOSIS (5651)*
  - LIVER, COPPER, ZINC, POTASSIUM (5698)
  - LIVER, HEPATOMEGALY, SCINTIGRAPHY, ALCOHOLIC STEATOSIS (5661)
  - LIVER, OROTIC ACID, ETHIENINE, N-2-FLUORENYLACETAMIDE, 3'-METHYL-DIMETHYLAMINEAZOBENZENE (6060)*
  - LIVER PROTHROMBIN, CIRRHOSIS, FIBRINOLYSIS (5646)*
  - METASTASIS, LIVER, METABOLISM, 5-FLUOROURACIL, PANCREATIC CARCINOMA (6014)
  - METASTASIS, LIVER SCAN, RADIOALBUMIN (5673)

- PRIMARY, LIVER, AGE, SEX (6048)
- RECTUM, LARGE BOWEL, UNDIAGNOSED, RACE DIFFERENCES (5921)
- RECTUM, RESECTION (5936)
- RECTUM, SURGERY, PERINEOABDOMINAL OPERATION (5917)
- RISK, POSTAPPENDECTOMY (5927)
- STOMACH, CELL PROLIFERATION, AUTORADIOGRAPH (5788)
- STOMACH, CELIACOGRAPHY (5710)
- STOMACH, DIAGNOSIS, GASTROSCOPE, GASTRO-CAMERA (5720)
- STOMACH, DIAGNOSIS, SURGERY (5709)
- STOMACH, LIVER, DIAGNOSIS, ANGIOGRAPHY (5729)
- STOMACH, SURGERY (5823)
- STOMACH, VAGOTOMY, RESECTION, ULCER, POLYP (5805)

CARBOHYDRATE
- ASCITES HEPATOMA, AH 13, AH 39, GLYCOGENESIS, GLYCOGENOLYSIS, ENZYME ACTIVITY (5987)*
- CIRRHOSIS, DISACCHARIDE INTOLERANCE, MALTOSURIA, AMINOACIDURIA (5898)
- DISACCHARIDE, INTESTINE, RAT, LACTASE, SUCRASE, MALTASE, MALNUTRITION (5622)
- GLUCOSE, METABOLISM, OBESITY, INSULIN, JEJUNOILEOSTOMY (5865)
- GLUCOSE, SECRETION, EXOCRINE, PANCREAS, ENZYME, GLUCAGON (5552)*
- GLUCOSE, TRANSPORT, METABOLISM, FASTING (5491)*
- GLYCOGEN, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS, CORTISOL, HEPATOCYTES (5461)
- GLUCOSE, INTESTINAL SECRETION, GLUCAGON, DOG (5614)*
- LACTOSE, INTOLERANCE, ADULT, JEJUNAL MUCOSA (5896)
- LACTOSE, INTOLERANCE, MALABSORPTION, MILK TREATMENT, ZYMIL (5897)
- LOW LACTOSE, MILK, ZYMIL, MALABSORPTION (6202)
- LACTOSE, MALABSORPTION, LACTOSE TOLERANCE, GASTROINTESTINAL SYMPTOMS (5886)*
- LACTOSE TOLERANCE, CALCIUM, PHOSPHORUS METABOLISM (5612)*
- GLUCOSE, METABOLISM, INSULIN, CIRRHOSIS, DIABETES, POTASSIUM CHLORIDE (6121)
- MARASMUS, ETIOLOGY, TREATMENT (6179)
- METABOLISM, ACUTE NON-VIRAL HEPATITIS, MUSHROOM POISONING (6066)
- METABOLISM, GLYCEROL, GLYCERIDE (5935)
- METABOLISM, LIPID METABOLISM, CHOLINOMIMETICS, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)*
- METABOLISM, LIVER, STARVATION (5635)
- METABOLISM, MUCOPOLYSACCHARIDE, INBORN ERRORS, HURLER'S SYNDROME, HUNTER SYNDROME, SANFILIPPO SYNDROME (6211)
- STARCH HYDROLYSIS, STOMACH, AMYLOLYTIC ACTIVITY (5544)
- SUCROSE, HEPATIC ENZYMES, PARTIAL HEPATECTOMY, ALCOHOL, GLYCOGENESIS, GLYCOGENOLYSIS, RAT (5999)

CARCINOGEN
- AROMATIC HYDROCARBONS, ANTHRACENE, DIHYDRODIOL, LIVER METABOLISM, RATS (5571)*
- HEPATIC LESION, SEX, AGE, RAT (6057)*
- LIVER, ENZYME REGULATION, GLYCOLYSIS (6079)
- NITRITES, METHEMOGLOBIN, NITROSAMINES PH, BASICITY, STOMACH (5550)

CARCINOMA
- ADENO-, APPENDIX, ACUTE APPENDICITIS (5901)
- ARGENTAFFIN CELL, RECTUM, SURGERY (5912)
- CARCINOGEN, LIVER, SEX FACTOR, AGE FACTOR, RAT (6057)*
- COLLOID, ANUS, RECTUM, MUCUS-SECRETIN (5907)
- DUODENAL BULB, SURGERY (5800)
- EARLY, STOMACH, GASTROCAMERA (5819)
- ESOPHAGUS, X-RAY THERAPY (5746)
- EXTRAHEPATIC BILE DUCTS, RADIOLOGY (6138)
- GASTRIC, ESOPHAGUS, MOTILITY, SPASM (5790)
- LIVER, CIRRHOSIS, HEPATITIS, AFRICA (6027)
- PANCREAS, HEAD, OBSTRUCTION, GASTREC OMY, DUODENECTOMY (5955)
- PANCREAS, PANCREATODUODENECTOMY, SURGERY, BYPASS OPERATIONS (5953)
- POLYP, STOMACH, POLYPOGENESIS, MALIGNANT DEGENERATION (5785)
- PRIMARY, LIVER, RESECTION (6031)
- PRIMARY MULTIPLE, SMALL INTESTINE (5872)
- RECTOSIGMOID, PREGNANCY (5924)
- RECTUM, RADIOTHERAPY, MEGAVOLT THERAPY, RADIO-ACTIVE COBALT (591
- STOMACH, ACID PRODUCTION (5769)
- SQUAMOUS CELL, COLON, ADENOCANTHOMA (5905)

CATECHOLAMINE
- ADRENALINE, NORADRENALINE, ISOPRENALINE, SMOOTH MUSCLE CONTRACTION, COLON, RELAXATION, ALPHA RECEPTOR BETA RECEPTORS (5509)*
- CIRRHOSIS, RENAL FUNCTION, RENIN ACTIVITY (6126)
- EPINEPHRINE, AMINO ACID TRANSPORT, LIVER SLICES (5493)*
- MOTILITY, SMALL INTESTINE, ILEUM, SMOOTH MUSCLE, ADRENALINE, NORADR ALINE, ADRENOCEPTORS (5517)*
- NORADRENALINE, HYPERTENSION, MESENT IC ARTERY, RAT (6226)
- NOREPINEPHRINE, TYROSINE TRANSAMINA RAT (5591)*

CECUM
- CANCER, MUCOSA (5943)
- SOLITARY, ULCER, SURGERY (5902)

CHOLANGITIS
- RENAL INSUFFICIENCY, LIVER INVOLVEM (6042)

CHOLECYSTITIS
- ACUTE CHOLECYSTOPANCREATITIS, LIVER FUNCTION (5973)
- ACUTE, LIVER PROTEIN, ELECTROPHORES (6154)
- ACUTE, NONCALCULOUS, POSTOPERATIVE (6134)
- ACUTE, SERUM SIALIC ACID (6140)
- ACUTE, SURGERY (6141)
- ACUTE, TREATMENT, SURGERY (6142)

- ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
- RADIOLOGY, GALLBLADDER, DIAGNOSIS (5715)

LERA
- ANTIGEN, IMMUNOLOGY, RAT FOOT EDEMA MODEL (6175)
- DIARRHEA, TREATMENT, CHILDREN (6180)
- EXOTOXIN, CYCLOHEXIMIDE, SMALL INTESTINE, JEJUNAL SECRETION (6158)*
- IMMUNITY, EXO-ENTEROTOXIN (6157)*
- PANCREAS, PEPTIDE-SECRETION (5958)
- PANCREAS, TUMOR, ISLET CELL (6231)
- SMALL INTESTINE, RABBIT (5626)
- VIRUS, GAMMA RAY INACTIVATION, HOG (6183)

CULATION
- ANTICOAGULANTS, MERCUMAR, ILEUS, HEMATOMA, HEMATURIA, BOWEL WALL (5862)
- ARTERIOMESENTERIC OCCLUSION, ULCER, PAPILLA, CHILD, DIFFERENTIAL DIAGNOSIS, RADIOLOGICAL PICTURE (5915)
- BLOOD, DUODENAL ULCER, GASTRIC ULCER, SMOOTH MUSCLE CONTRACTION (5521)
- BLOOD, FLOW, LIVER, BILE, THYROID (6040)
- BLOOD FLOW, MESENTERY, INTESTINE, DRUG ABSORPTION (5501)
- BLOOD TRANSFUSIONS, INFANTS, HEPATITIS JAUNDICE, BIOPSIES, AUTOPSIES (6086)
- BLOOD VOLUME, ISOTOPE TECHNIQUE, PLETHYSMOGRAPH, FLUID FILTRATION, CIRRHOSIS (5632)*
- CELIAC DISEASE, JEJUNAL MUCOSA, SUCTION BIOPSY, HISTOPATHOLOGY (5885)*
- COAGULATION, ACUTE VIRAL HEPATITIS (6095)
- COLON, MUCOSA, BLOOD VESSELS, LYMPHATICS (5435)*
- EMBOLIZATION, GASTRIC ULCER, MILK PRODUCTS, GASTRIC TUBE, TRAUMATIC RUPTURE, AGRANULOCYTOSIS (5833)
- EXCHANGE TRANSFUSION, ACUTE NON-VIRAL HEPATITIS, COMA, STEROID (6063)
- HEMATOMA, DUODENAL, GALLBLADDER, BILE DUCT, SURGERY (5813)
- HEMOPERFUSION, SMALL INTESTINE, HYPOTHERMIA, MOTILITY, MONOSACCHARIDE ABSORPTION (5615)*
- HEMOPHILIA A, GASTRIC RESECTION, DUODENAL ULCER, ANTIHEMOPHILIC GLOBULIN PIG (6162)
- HEMORRHOID, ANUS, RECTUM, PATHOGENESIS ANATOMY (5939)
- HEMORRHOID, DIAGNOSIS, TREATMENT (5923)
- HYPERTENSION, ENZYME, LIVER, CIRRHOSIS (6124)
- HYPERTENSION, MESENTERIC ARTERY, NORADRENALINE, RAT (6226)
- INFARCTION, INTESTINE, X-RAY (5716)
- LEUCOCYTE, ALKALINE PHOSPHATASE, ACUTE VIRAL HEPATITIS, TUMOR, OBSTRUCTIVE JAUNDICE (5723)
- LIVER, COLLATERAL CIRCULATION, HEPATIC ANGIOGRAPHY, AORTOGRAPHY (5981)*
- LIVER WEIGHT, RADIOGOLD, RADIOXENON (5638)
- LYMPHOCYTE, BILE, CIRRHOSIS (6125)
- MICRO-, LIVER, ARTERIAL PRESSURE, VENOUS PRESSURE, INTRAVITAL MICROSCOPY, FLOW ARREST, EXSANGUINATION (5629)*
- MICRO-, LIVER, EXSANGUINATION, ARTERIAL PRESSURE, VENOUS PRESSURE, DEXTRAN, RAT (5644)
- OBSTRUCTION, MEMBRANOUS, INFERIOR VENA CAVA, HEPATIC PORTION, SURGERY (6178)
- PORTAL HYPERTENSION, CIRRHOSIS, LIVER, PORTOSYSTEMIC SHUNT (6128)
- PORTAL HYPERTENSION, BILE-DUCT, ATRESIA, CONGENITAL MALFORMATION, CHRONIC JAUNDICE, HYPERPLASIA (6131)
- PORTAL HYPERTENSION, LIVER, NODULAR TRANSFORMATION (5998)
- PORTAL HYPERTENSION, SURGERY, CIRRHOSIS, PORTACAVAL SHUNT (6028)
- PORTAL HYPERTENSION, VENOUS, HEPATIC LYMPH, ASCITES, CIRRHOSIS, HYPOALBUMINEMIA (6217)
- PORTAL VEIN, MOTILITY, CYCLIC 3'5'-AMP DIBUTYRYL-3'5'-AMP, THEOPHYLLINE, ADRENERGIC RECEPTOR (5627)*
- PROTHROMBIN, FIBRINOLYSIS, LIVER DISEASE, CANCER, CIRRHOSIS (5646)*
- OCCULT BLOOD, LOSS, GASTROINTESTINAL HIATAL HERNIA, ULCERATIVE COLITIS (5684)
- THROMBOPHLEBITIS, BUDD-CHIARI SYNDROME SURGERY (6213)
- THROMBOSIS, MESENTERIC VEIN, ORAL CONTRACEPTIVE (6235)
- UREMIA, AUTORADIOGRAPHY, HISTOCHEMISTRY, EPITHELIA, ENZYMATIC ACTIVITY, MICE (6248)
- VARICES, COLON, SIGMOIDOSCOPY, RESECTION (5913)

CIRRHOSIS
- ACUTE VIRAL HEPATITIS, AMINO ACID, GAMMA GLOBULIN (6013)
- ACUTE VIRAL HEPATITIS, DRUG ADDICTION (6085)
- ALCOHOL, CHRONIC HEPATITIS (6122)
- ALCOHOL DEHYDROGENASE, LIVER, ZINC, COPPER, MANGANESE, SELENIUM, CADMIUM WILSON'S DISEASE (6002)
- ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
- ANGIOGRAPHY, DIAGNOSIS, CANCER (5729)
- ARGININE, MALIC ACID, ACUTE VIRAL HEPATITIS (6044)
- AUSTRALIA ANTIGEN, ACUTE AND CHRONIC LIVER DISEASE, HEPATITIS (6050)
- BILIARY, CHRONIC CHOLESTASIS, NUTRITION (6120)
- BILIARY, JAUNDICE, PRURITIS, XANTHOMA, HEPATOMEGALY, SPLENOMEGALY, LAPAROSCOPY, RADIOGRAPHY, EXTRAHEPATIC CHOLOSTASIS (6118)
- BILIARY, LYMPHOCYTE (6125)
- CHOLESTASIS, ASCITES, PORTAL HYPERTENSION, HEPATIC LYMPH, HYPOALBUMINEMIA (6217)
- CHRONIC HEPATITIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
- CYTOLYSIS SYNDROME, LIVER, CHILDREN, CHRONIC HEPATITIS (6001)
- DIABETES, GLUCOSE, INSULIN, METABOLISM, POTASSIUM CHLORIDE (6121)
- DISACCHARIDE INTOLERANCE, MALTOSURIA, AMINOACIDURIA (5898)
- ENDOSCOPY, PORTACAVAL SHUNT, ESOPHA-

  - GUS, BLEEDING VARICES (6113)*
  - ENZYME HYPERTENSION (6124)
  - HEMOCHROMATOSIS, IRON METABOLISM (6000)
  - HEPATIC, SERUM IMMUNOGLOBIN, IGG, IGA, IGM (5688)
  - IMMUNOGLOBULINS, DIAGNOSTIC PATTERN (6115)*
  - IRON ABSORPTION, PORTACAVAL SHUNT, DOG (6114)*
  - LIVER, ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS, BOTKIN'S DISEASE, CHILREN (6093)
  - LIVER, AFRICA, HEPATITIS, CARCINOMA (6027)
  - LIVER, ASCITES, EDEMA, COMPARTMENTALIZATION (6123)
  - LIVER, BIOPSY, DIAGNOSIS (5672)
  - LIVER, CANCER, PROTHROMBIN, FIBRINOLYSIS (5646)*
  - LIVER, CHRONIC HEPATITIS, HEMODYNAMIC PARAMETERS (6108)
  - LIVER, OBSTRUCTIVE JAUNDICE, TUMOR, TREATMENT (6011)
  - LIVER, PORTAL HYPERTENSION, PORTOSYSTEMIC SHUNT (6128)
  - PARENCHYMA CELLS, INTRANODULAR STRUCTURES, HISTOMETRICAL ANALYSIS (6116)*
  - PORTAL HYPERTENSION, SURGERY, PORTACAVAL SHUNT (6028)
  - POST-HEPATITIS, TRANSAMINASES, ALKALINE PHOSPHATASE, BSP, ELECTROPHORESIS, HYPERGAMMAGLOBULINEMIA, PERILOBULAR FIBROSIS, LOW REGENERATION (6119)
  - RENAL FUNCTION (6127)
  - RENAL FUNCTION, RENIN ACTIVITY, CATECHOLAMINES (6126)
  - SEROTONIN METABOLISM, ACUTE VIRAL HEPATITIS (6117)
  - SMALL INTESTINE, MUCOSAL CHANGE (5867)
  - VASCULAR OBSTRUCTION, ASCITES, HEPATIC VENOUS PRESSURE (5632)*

COLITIS
  - CROHN'S DISEASE, COLON (5884)
  - ENTERO-, COLONIC STENOSIS, NEONATE (5945)
  - ENTERO-, SALMONELLA, DIARRHEA, RAT (6247)
  - GRANULOMATOUS, CROHN'S DISEASE, COLECTOMY, FOLLICULAR LESIONS, SMALL INTESTINE, SARCOID APPEARANCE (5880)
  - ISCHEMIC, COLON, OCCLUSION, RADIATION THERAPY (5918)
  - ISCHEMIC, MESENTERY, OCCLUSION (6232)
  - LC 9066, GASTRIC DISORDERS, HEPATITIS, PANCREATITIS, CONSTIPATION (6168)
  - RECTO-, ULCERATIVE, TUMOR (5944)
  - ULCERATIVE, ALLERGY, GASTROINTESTINAL DISEASE (6163)
  - ULCERATIVE, COLON, ABSORPTION, EDTA (5951)
  - ULCERATIVE, DIAGNOSIS, COMPLICATIONS, TREATMENT (5949)
  - ULCERATIVE, CROHN'S DISEASE, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5446)*
  - ULCERATIVE, GRANULOMATOUS LYMPHOCYTE TOXICITY, ALLOGENIC COLONIC EPITHELIAL CELL (5947)*
  - ULCERATIVE, HIATAL HERNIA, OCCULT BLOOD LOSS (5684)
  - ULCERATIVE, ILEORECTAL ANASTOMOSIS (5950)

COLLAGEN
  - DISEASE, AUTOIMMUNE FACTORS, GASTROINTESTINAL TRACT, MUCOSA, ANTINUCLEAR ANTIBODIES (6222)
  - LIVER, COLLAGENOLYTIC ACTIVITY, RAT (5597)

COLON
  - ABSORPTION, EDTA, ULCERATIVE COLITIS (5951)
  - CANCER, DIAGNOSIS (5904)
  - CANCER, SURVIVAL, SURGERY (5909)
  - COLITIS, CROHN'S DISEASE (5884)
  - COLOSTOMY, ILEOSTOMY, DIARRHEA, CON STIPATION, DIET (5903)
  - CONGENITAL ATRESIA, JEJUNUM, ILEUM (6208)
  - CROHN'S DISEASE, PROLAPSE, FOLLICUL LESIONS, SARCOID APPEARANCE (5880
  - DIVERTICULITIS, DIVERTICULOSIS, DIFFERENTIATION, RADIOLOGY (5681)
  - DIVERTICULITIS, SURGERY, PERFORATIO FECAL MATTER, HEMORRHAGE, DRAINAG COLOSTOMY (5916)
  - DIVERTICULOSIS, BLEEDING, RESECTION CARCINOMA, CECUM, SIGMOID, ANASTO SIS (5914)
  - DIVERTICULUM, DIVERTICULITIS (5919)
  - ENDOMETRIOSIS, RECTUM (5910)
  - FISTULA, DUODENUM, DIAGNOSIS, SURGE (5709)
  - GARDNER'S SYNDROME, COLECTOMY (5934
  - ILEORECTAL ANASTOMOSIS, ULCERATIVE COLITIS (5950)
  - ISOLATED, PERISTALSIS, MECHANISM, INTRALUMINAL STIMULUS (5506)*
  - MEGA-, AGANGLIONIC, RECTAL MOTILIT NEONATE, CHILDREN (5929)
  - MUCOSA, CIRCULATION, LYMPHATICS, RABBIT (5435)*
  - OCCLUSION, RADIOLOGY, COLITIS (591
  - PATHOLOGY, PHARMACOTHERAPY (5922)
  - POLYPS, CUSHING'S SYNDROME (5926)
  - RECTOSIGMOID RUPTURE, ILEAL EVISCE TION, ANUM (5930)
  - RECTUM, ANASTOMOSIS, CECAL FISTULA, SURGERY, TUMOR (5942)
  - RESECTION, BACTERIA, ILEOSTOMY (59
  - RESECTION, COLORECTAL CANCER (593
  - SIGMOID, RECTUM, CARCINOMA, PREGNA (5924)
  - SQUAMOUS CELL CARCINOMA, ADENOCAN (5905)
  - STENOSIS, ENTEROCOLITIS, NEONATE (5945)
  - SURGERY, GENTAMYCIN, ANTIBACTERIAL ACTION, COLONIC FLORA, INTESTINA GERMS, STERILIZATION (5941)
  - TAENIA COLI, MOTILITY, AET, JEJUN DEFECATION, RABBIT (5623)
  - ULCERATIVE COLITIS, DIAGNOSIS, COM PLICATIONS, TREATMENT (5949)
  - ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, LYMPHOCYTE TOXICITY, AL GENIC COLONIC EPITHELIAL CELL (5947)*
  - ULCERATIVE RECTOCOLITIS, TUMOR (59
  - UNDIAGNOSED CANCER, RECTUM, RACE DIFFERENCES (5921)

VARICES, SIGMOIDOSCOPY, RESECTION (5913)
VILLOUS ADENOMA, RECTUM (5940)
A
ACUTE HEPATITIS, EARLY DIAGNOSIS (5660)•
HEPATIC, EXTRACORPOREAL PERFUSION, CORTICOSTEROIDS, DELIRIUM TREMENS (6008)
HYPOGLYCEMIC, ISLET CELL TUMOR, HEMIPLEGIA, CENTRAL PARALYSES, TOLBUTAMIDE TEST (5952)
NON-VIRAL HEPATITIS, EXCHANGE TRANSFUSION, STEROID (6063)
HN'S DISEASE
COLITIS, COLON (5884)
GRANULOMATOUS DISEASE, ANORECTAL, PROLAPSE, COLECTOMY, FOLLICULAR LESIONS, SMALL INTESTINE (5880)
ILEOCECUM, APPENDICITIS (5861)
LACTOSE MALABSORPTION, SYMPTOMS, DIETARY LACTOSE (5886)•
LARGE INTESTINE, ULCERATIVE COLITIS, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5946)•
PREGNANCY, STERILITY (5883)
PROTEIN LOSS, IMMUNOGLOBULIN, SERUM PROTEINS, PROTEIN CATABOLISM (5872)•
REGIONAL ENTERITIS, HEMOGLOBIN, SERUM ALBUMIN, AZATHIOPRINE TREATMENT (5881)
SMALL INTESTINE, LARGE INTESTINE, MORTALITY (5877)•
SMALL INTESTINE, RADIOGRAPHY (5879)•
OCHROME
REDOX POTENTIAL, LIVER, RABBIT (5458)
OLOGY
BRUSHING, ESOPHAGUS, STOMACH, CANCER, DIAGNOSIS (5654)•
DIAGNOSIS, ESOPHAGUS, CANCER, SPECIMEN COLLECTION, INSTRUMENT, GOOD TOLERANCE (5665)
DIAGNOSIS, STOMACH (5714)
HEPATOCYTE, WALL, CCl4 DAMAGE, TAURINE N-CARBODITHIOATE (6080)
ENERATION
MALIGNANT, STOMACH, POLYP, ADENOMA (5785)
ETES MELLITUS
CIRRHOSIS, GLUCOSE, INSULIN METABOLISM, POTASSIUM CHLORIDE (6121)
INSTANT, HEPATIC METABOLISM, MANNOHEPTULOSE, HYPERGLYCEMIA (5609)
PANCREAS, MUCOVISCIDOSIS, CARBOHYDRATE METABOLISM (5959)
STEROID HORMONES, LACTATE, PYRUVATE, METABOLITES, ENZYMATIC SYSTEM, HYPOGLYCEMIA, NEONATE (6240)
NOSIS
ACUTE APPENDICITIS, X-RAY (5704)
ACUTE PANCREATITIS, PROBLEMS (5713)
ACUTE VIRAL HEPATITIS, RING PRECIPITATION REACTION (5726)
ACUTE VIRAL HEPATITIS, SERUM GUANASE, SGPT, LIVER DISEASE (5686)
ANGIOGRAPHY, HEPATIC ARTERY LIGATION, COLLATERAL CIRCULATION, DEARTERIALIZATION (5981)•
ANGIOGRAPHY, STOMACH, CANCER (5710)
ANGIOGRAPHY, STOMACH, PANCREAS, LIVER, CIRRHOSIS, CANCER, PANCREATITIS (5729)
AUTOIMMUNE HEPATITIS, SEROLOGY (5669)
AUTORADIOGRAPHY, CANCER, STOMACH, CELL PROLIFERATION (5788)
AUTORADIOGRAPHY, SMALL INTESTINE, STENOSIS, RADIOLOGY, HISTOLOGY (6196)
BILIARY TRACT FISTULA, X-RAY (5706)
CHOLANGIOGRAPHY, ANASTOMOSIS, PAPILLECTOMY, CATHETER, DUODENUM, RETROGRADE FILLING, BILE DUCTS (5676)
CHOLANGIOGRAPHY, BILE DUCT PERFORATION NEONATE, SURGERY (6148)
CHOLANGIOGRAPHY, CHOLECYSTECTOMY, CHOLECYSTITIS (6135)
CHOLANGIOGRAPHY, INFUSION, GALLBLADDER (5727)
CHOLANGIOGRAPHY, OPERATIVE, BILE DUCT STONE (5690)
CHOLECYSTITIS, RADIOLOGY, GALLBLADDER (5715)
CHOLECYSTO-CHOLANGIOGRAPHY, CHOLEVID, DIAGNOSIS (5707)
CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOGLOBINS (6115)•
CIRRHOSIS, LIVER BIOPSY (5672)
DYSENTERY, BACTERIOLOGY (5712)
ECHINOCOCCOSIS, RHEOHEPATOGRAPHY, PARASITE (5703)
ENDOSCOPY, CARDIA, TUMORS, ESOFIBROSCOPE, BIOPSY, PSEUDO-TUMORS, MALIGNANCY (5663)
ENDOSCOPY, STOMACH, GASTRITIS, GASTROCAMERA (5815)
ENDOSCOPY, ULCER HEALING, MALIGNANCY, RADIOLOGY (5854)
ENZYME, CIRRHOSIS, OBSTRUCTIVE JAUNDICE, CHRONIC HEPATITIS, CHOLECYSTITIS (5725)
ESOPHAGOBRONCHIAL FISTULA, PULMONARY SUPPURATION (5762)
ESOPHAGOSCOPY, FUNDOPLICATION,HIATAL HERNIA, NISSEN'S TECHNIQUE, ULCERS, HEMORRHAGE (5739)
GALLBLADDER DISEASE, RADIOISOTOPE (5730)
GASTROSCOPY, CANCER DIAGNOSIS, GASTROCAMERA (5720)
GASTROSCOPY, ESOPHAGUS, STOMACH, COMPLICATION (5680)
GASTROSCOPY, GASTRIC HEMORRHAGE (5791)
GASTROCAMERA, STOMACH, EARLY CARCINOMA (5819)
GASTROSCOPY, ULCER (5717)
HEPATOCELLULAR FAILURE, CLINICAL FEATURES (6022)
HEPATOPORTOGRAPHY, OILY CONTRAST MEDIUM, INTRAHEPATIC VESSELS (5702)
LARGE INTESTINE, DOUBLE CONTRAST TECHNIQUE (5722)
LIVER, SCANNING, RADIOALBUMIN, METASTASES (5673)
LIVER BIOPSY, MENGHINI NEEDLE, MODIFIED ANGLE, SHARPENED NEEDLE (5657)•
LIVER SCAN, SPACE-OCCUPYING LESION, HEPATIC TUMOR, PERITONEOSCOPY (5659)•
LIVER SCAN, 113M INDIUM (5685)
LIVER SCAN, RESUSCITATION, RADIOISOTOPE (5724)
LIVER TUMOR, SCINTILLATION CAMERA (5670)
MANOMETRY, BILE DUCT, OBSTRUCTION,

RADIOLOGY (5708)
- MANOMETRY, ESOPHAGEAL-GASTRIC HERNIA, DIAGNOSIS, SURGERY (5718)
- MANOMETRY, ESOPHAGUS, LUNG RESECTION (5752)
- OPERATIVE CHOLANGIOGRAPHY, ERROR (5697)
- PANCREATIC SCANNING, PARATHYROID, STAINING AGENTS, DOG (5650)*
- PEDIATRIC PATHOLOGY, LIVER SCAN, SPLEEN SCAN, 99M TC, 113M IN (5719)
- PERFUSION STUDY, DIGOXIN ABSORPTION, INTESTINE, RAT (5504)
- PERITONEAL DIALYSIS, METABOLIC COMPLICATIONS, GASTROINTESTINAL DISTURBANCES, RESPIRATORY DIFFICULTIES, CARDIOVASCULAR DISTURBANCES (6165)
- PERITONEAL DIALYSIS, REYE'S SYNDROME, HEPATOMEGALY (6018)
- RADIOGRAPHY, ANUS, PERIANAL PAGET'S DISEASE, SURGERY (5908)
- RADIOGRAPHY, BARIUM, ESOPHAGRAM, FLUOROSCOPY (5649)*
- RADIOGRAPHY, CROHN'S DISEASE, SMALL INTESTINE, MALABSORPTION SYNDROME (5879)*
- RADIOLOGY, COLON, VASCULAR OCCLUSION, COLITIS (5918)
- RADIOLOGY, DIVERTICULITIS, DIVERTICULOSIS, DIFFERENTIATION, COLON (5681)
- RADIOLOGY, EXTRAHEPATIC BILE DUCT, CARCINOMA (6138)
- RADIOLOGY, GASTROINTESTINAL TRACT, DIVERTICULA, DIVERTICULITIS, DIAGNOSIS (6197)
- RADIOLOGY, HIATAL HERNIA, RADIOLOGY (5701)
- RADIOLOGY, JAUNDICE, CHOLANGIOGRAPHY, DUODENOGRAPHY (5689)
- RADIOLOGY, LIVER, DERMOID CYST (6030)
- RADIOLOGY, PANCREATIC PSEUDO-CYST, RUPTURE (5965)
- RADIOLOGY, TREATMENT, LYMPHATIC TUMOR, STOMACH UPSET (5786)
- SCANNING, PANCREAS, IMAGE SEPARATION, DATA PROCESSING, LIVER (5652)*
- SCINTIGRAPHY, LIVER, HEPATOMEGALY, ALCOHOLIC STEATOSIS, EXTRAHEPATIC TUMOR, PRIMARY CANCER (5661)
- SCINTILLOGRAPHY, GAMMA SCINTILLATION CAMERA, ABDOMEN (5671)
- SIGMOIDOSCOPY, GIARDOSIS, DIARRHEA, ADULT (6262)
- SIGMOIDOSCOPY, ULCERATIVE PROCTITIS, RECTAL MUCOSA (5948)
- SMALL INTESTINE, ILEUM, ISCHEMIA, DYE TEST (5658)*
- STOMACH, CYTOLOGY (5714)
- STOMACH, GASTRIC ACID, HEIDELBERG PH CAPSULE, ACIDITY TITRATION (5656)*
- TOLUIDINE BLUE-O, ANALOGS PARATHYROID, PANCREAS SCANNING, DOG (5650)*
- TUMOR, MULIER'S TEST, ESOPHAGUS (5721)
- ULTRASOUND, AORTA, THORACIC, ABDOMINAL, AORTOSONOGRAPHY (5696)
- X-RAY, DIAGNOSIS, PYLORIC STENOSIS, STOMACH DYSKINESIA (5705)
- X-RAY, INTESTINAL INFARCT (5716)

DIARRHEA
- AMEBIC DYSENTERY, PARASITOLOGICAL EXAMINATION, INTESTINAL COMPLICATIONS, HEPATIC AMEBIASIS (6253)
- CHOLERA, TREATMENT, CHILDREN (6180)
- GIARDIASIS, CHILDREN (6264)
- GIARDIASIS, HALQUINOL (6265)
- GIARDOSIS, SIGMOIDOSCOPY, ADULT (6262)
- ILEOSTOMY, COLOSTOMY, CONSTIPATION, PSYCHOLOGICAL PREPARATION (5903)
- SALMONELLA, ENTEROCOLITIS, RAT (6247
- STOMACH, MULTIPLE POLYPS, GASTROCTOM (5818)
- TROPICAL SPRUE (5894)
- TROPICAL SPRUE, NIGERIA, MALABSORPTI (5889)
- VIBRIO PARAHEMOLYTICUS (6181)

DIET
- BIOTIN DEFICIENCY, EGG-ALBUMIN DIET, HEPATIC ENZYMES, GLYCOLYSIS (5569)
- CARBOHYDRATE-FREE, LIVER, GLUCONEOGE ESIS, GLYCOLYSIS (5598)
- EFFECT OF, GLYCOLYTIC ENZYME, HUMAN JEJUNUM (5613)*
- FOLATE-METABOLIZING ENZYMES, JEJUNU METABOLISM (5611)*
- LACTOSE, LACTOSE MALABSORPTION (588
- METHIONINE, CHOLINE, FAT, METABOLIS WEANLING RATS (5558)*
- MINERAL REQUIREMENTS, EXPERIMENTAL ANIMALS, METHIONINE, DIET, MICE, RATS, GUINEA PIGS (5640)
- PARTICLE SIZE, FIBER CONTENT, GASTR ULCERATION, SWINE (5827)*
- PROTEIN DEFICIENCY, INDIA (6215)

DIVERTICULUM
- COLON, DIVERTICULITIS (5919)
- COLON, DIVERTICULITIS, DIFFERENTIATION, RADIOLOGY (5681)
- DIVERTICULITIS, GASTROINTESTINAL TRACT, RADIOLOGY, DIAGNOSIS (6197
- DIVERTICULITIS, SURGERY, PERFORATIO PERITONITIS, DRAINAGE, COLOSTOMY, PALPABLE TUMORS, HEMORRHAGE (5916
- DIVERTICULOSIS, COLON, CECUM, SIGMO CARCINOMA, BLEEDING, RESECTION (5914)
- DUODENUM, ESOPHAGEAL HERNIA, GASTRI TUMOR (5802)
- MECKEL'S, CHRONIC ANEMIA (5870)
- MECKEL'S, SMALL INTESTINE (5873)
- MECKEL'S, SMALL INTESTINE, PATHOLOG (5871)
- STOMACH, SMALL INTESTINE, LOCALIZAT GASTRIC MUCOSA, HEMORRHAGE, MALIG NANCY (5784)

DRUG
- AFLATOXIN, ACUTE NON-VIRAL HEPATIT LIVER, MONKEY (6065)
- AFLATOXIN, NON-VIRAL HEPATITIS, UG (6070)
- ANTISPASMODIC, PENTAPEPTIDE, METHY SULFATE, ANTICHOLINERGIC (5523)
- ATROPINE, GASTRIC SECRETORY INHIBITION, ACID PRODUCTION (5534)*
- AZATHIOPRINE, CROHN'S DISEASE, REG AL ENTERITIS, HEMOGLOBIN SERUM ALBUMIN, CHRONIC ULCERATIVE COLI (5881)
- BARBITURATE, LIVER, MICROSOME, ENZ RAT (5601)
- BARBITURATE, OROTIC ACID SYNTHESIS LIVER (5593)

  BARBITURATE, PORPHYRIN METABOLISM, LIVER METABOLISM, HEPATIC ENZYMES (5563)•
  CHOLINOMIMETICS, CARBOHYDRATE METABOLISM, FAT METABOLISM, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)•
  COMBINATION, HEPATOPROTECTIVE (5984)•
  COUMARIN, 4-METHYLCOUMARIN, ETHIONINE, THIOACETAMIDE, HEXOBARBITAL, PHENOBARBITAL, 3-METHYLCHOLANTHRENE, LIVER ENZYME, TOXICITY (5425)•
  DMSO, LIVER ENZYMES, MICROSOMAL ENZYMES, HEPATIC METABOLISM (5581)•
  EFFECT, DIPHENYLHYDANTOIN, LIVER, MICROSOME, METABOLISM, BIOTRANSFORMATION (5607)
  EFFECT, HYPERLIPOPROTEINEMIA, ENZYME, STEROIDS, LIVER (5564)•
  EFFECT, GASTRIC MOTILITY, CONTRACTION, SYMPATHETIC STIMULATION, SYMPATHOMIMETIC DRUGS, BLOCKING AGENTS (5518)•
  EFFECT, LIVER, HYDROXYLAMINE DERIVATIVE, CHOLESTEROL (5565)•
  FLUOROURACIL, LIVER METASTASES, METABOLISM, PANCREATIC CARCINOMA (6014)
  METABOLISM, LIVER, CYTOCHROME P-450, HEXOBARBITAL (5566)•
  PHENOBARBITOL, LIVER METABOLISM, MALARIA (6270)
  PHENOBARBITOL, NEONATAL JAUNDICE, HYPERBILIRUBINEMIA (6220)
  SULFAGUANIDINE, ABSORPTION, SMALL INTESTINE, BILE SALTS (5477)•
  SULFONAMIDE, ABSORPTION, PH, IN VITRO MODEL, SULFACETAMIDE, SULFADIAZINE, SULFADRIMIDINE (5487)•
  SULPIRIDE, GASTRODUODENAL ULCERS, TREATMENT, MIGRAINE, ANTI-EMETIC, ENDOSCOPY, RADIOLOGY (6242)
  THEOPHYLLINE, PORTAL VEIN, MOTILITY, ADRENERGIC RECEPTOR (5627)•
UG ADDICTION
  ACUTE VIRAL HEPATITIS, ANTIGEN ADOLESCENT (6100)
  AUSTRALIA ANTIGEN, DENMARK (6101)
  CIRRHOSIS, ACUTE VIRAL HEPATITIS (6085)
  SERUM HEPATITIS, SH ANTIGEN (5695)
ODENUM
  ACUTE ULCER, EROSION, STOMACH (5806)
  ACUTE ULCER, STOMACH, COMPLICATIONS (5804)
  BULB, CARCINOMA, SURGERY (5800)
  CHRONIC ULCER, SURGERY, CHILDREN (5837)
  DIVERTICULUM, ESOPHAGEAL HERNIA, GASTRIC TUMOR (5802)
  DUPLICATION, SURGERY, CYSTO-JEJUNOSTOMY (5522)
  EPITHELIUM, ULTRASTRUCTURE, ENZYMATIC LOCALIZATION, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)•
  FILLING DEFECT, GALLSTONE ILEUS, RADIOLOGY, JEJUNUM (5857)
  FILLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, ILEUM, GASTRIC MUCOSA (5875)
  FISTULA, COLON, DIAGNOSIS, SURGERY (5709)
  FISTULA, SURGERY, DUODENOJEJUNOSTOMY (5774)
  HEMATOMA, GALLBLADDER, BILE DUCT, SURGERY (5813)
  HETEROTOPIC GASTRIC MUCOSA, HISTOLOGY, PEPTIC ULCER (5826)•
  LIPOPROTEIN, LYMPH, ULTRASTRUCTURE, TRANSPORT (5417)•
  METABOLISM, LYSOLECITHIN (5621)•
  MOTILITY, STOMACH, BILE FLOW (5526)
  MUCOSA, JEJUNUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
  OBSTRUCTION, ANNULAR PANCREAS, CONGENITAL ANOMALY (5956)
  PAPILLA, CANCER, RADICAL SURGERY (5803)
  PAPILLA, CANCER, SURGERY (5814)
  PEPTIC ULCER, CHRONIC GASTRITIS, SURGERY (6195)
  PEPTIC ULCER, FAMILY (5838)
  PEPTIC ULCER, FAMILY, OCCUPATION, RELIGION (5839)
  PEPTIC ULCER, GASTRIC SECRETION, MINERAL WATER (5851)
  PEPTIC ULCER, GLUCOCORTICOID, STOMACH (5850)
  PEPTIC ULCER, STOMACH, PANCREATIC SECRETION (5843)
  PEPTIC ULCER, STOMACH, SURGERY (5844)
  RUPTURE, BLUNT TRAUMA, RETROPERITONEAL (5797)
  STRESS ULCER, POSTOPERATIVE HEMORRHAGE STOMACH (5772)
  STRESS ULCER, TRAUMA, DUODENUM (5771)
  ULCER, ABSORPTION, SMALL INTESTINE (5888)
  ULCER, ACID SECRETION, CALCIUM CARBONATE (5768)
  ULCER, ACID SECRETION, HISTALOG (5678)
  ULCER, GASTRIC JUICE, SALIVA, BILE (5832)
  ULCER, HEMORRHAGE, CELIAC OCCLUSION, ANGIOGRAPHY, LOCALIZATION, DIAGNOSIS (5674)
  ULCER, HEREDITY (5852)
  ULCER, HYPERPARATHYROIDISM, DIATHESIS, PARATHYROID ADENOMA (5840)
  ULCER, MUCOSA, BIOPSY, TELEMETRY (5847)
  ULCER, STENOSIS, CHILD, PAPILLA, DIFFERENTIAL DIAGNOSIS, GASTRIC JUICE, RADIOLOGY (5915)
  ULCER, STOMACH, PHARMACOTHERAPY (5834)
  ULCER, STOMACH, SMOOTH MUSCLE CONTRACTION BLOOD (5521)
  ULCER, SURGERY, GASTRIC SECRETION (5845)
  ULCER, STOMACH, VAGOTOMY (5778), (5841)
  ULCER, VAGOTOMY, PYLOROPLASTY (5842)
DYSENTERY
  AMEBIASIS, ENTAMOEBA HISTOLYTICA, INTESTINE (6272)
  DIAGNOSIS, BACTERIOLOGY (5712)
  SHIGELLA, SALMONELLA, E.COLI, INFANT (6169)
  SONNE, SHIGELLA, EPIDEMIOLOGY, NEW ZEALAND (6274)
DYSPEPSIA
  BISMUTH-SORBITOL, HIATAL HERNIA, ULCER, BILIARY DISEASE, COLITIS, CONSTIPATION (6167)
DYSPHAGIA
  ESOPHAGEAL LESION, STENOSIS, REFLUX,

- GASTRIC ASPIRATIONS, ESOPHAGEAL SPHINCTER (5735)
- ESOPHAGEAL RING, PNEUMATIC DILATION (5759)
- PEPTIC ESOPHAGITIS, STENOSIS, EDER PUESTOW, DILATATION, HIATAL HERNIA (5736)
- SALIVATION, REGURGITATION, ESOPHAGITIS, HIATAL HERNIA, GASTRIC ULCER, CHOLELITHIASIS, MALABSORPTION (6237)

ELECTROLYTE
- CALCIUM, ABSORPTION, PHOSPHORUS, INTESTINE, LACTOSE, TOLERANCE (5612)*
- CALCIUM, DEFICIENCY, GASTRECTOMY, DUMPING SYNDROME (5779)
- COPPER, HEPATIC CANCER, ZINC, POTASSIUM (5698)
- COPPER, LIVER, CARANOGEN, LACTATE DEHYDROGENASE, ISOENZYMES, MORPHOLOGY (5994)*
- COPPER, LIVER, TRAUMA, NON-VIRAL HEPATITIS (6067)
- COPPER, WILSON'S DISEASE, CERULOPLASMIN, CIRRHOSIS, LIVER, NEUROPATHY, LENTICULAR DEGENERATION (6019)
- COPPER, WILSON'S DISEASE, X-RAY, LIVER BIOPSY, BRAIN, FLUORESCENCE (5677)
- INORGANIC, BILE SALT, ADSORPTION, CHOLESTYRAMINE, TEMPERATURE, IN VITRO STUDIES (5486)*
- IRON, ABSORPTION, SMALL INTESTINE, CIRRHOSIS, PORTACAVAL SHUNT, DOG (6114)*
- IRON, ABSORPTION, SMALL INTESTINE, MUCOSA, NON-HEME IRON, HEMOGLOBIN (5484)*
- IRON, HEMOCHROMATOSIS, MALABSORPTION, PHLEBOTOMY THERAPY (5982)*
- IRON DEPOTS, HEMACHROMATOSIS, LIVER, PANCREAS, DIABETES, ENDOCRINE FACTORS (6045)
- METABOLISM, STOMACH, SURGERY (5807)
- METAL ISOTOPE, METAL ELIMINATION, SMALL INTESTINE, PANETH CELL (5481)*
- POTASSIUM, CHLORIDE, GLUCOSE, INSULIN, CIRRHOSIS, DIABETES (6121)
- RESPIRATORY, HYDROGEN, EXCRETION, CARBOHYDRATE, MALABSORPTION (5648)*
- SODIUM, SENSITIVITY, TRANSPORT, INTESTINE, AMINO ACID, SUGAR (5478)*

ELECTROPHORESIS
- ACETYLGLUCOSAMINE, PHOSPHOTRANSFERASE (5618)*
- LIVER PROTEIN, CHOLECYSTITIS (6154)

ENDOCRINE SYSTEM
- PARATHYROID, ADENOMA, DUODENAL ULCER, HYPERPARATHYROIDISM (5840)
- PARATHYROID, ADENOMA, HYPERCALCEMIA, PEPTIC ULCER (5836)
- PARATHYROID, FUNCTION, BILHARZIAL HEPATIC FIBROSIS (6281)
- THYROID, LIVER FUNCTION, BILE, HEPATIC BLOOD FLOW (6040)

ENTERITIS
- CHRONIC, MOTILITY, SMALL INTESTINE (6194)
- COLI, INFANTS, STOOLS, RESISTANCE TYPE, EPIDEMIOLOGY (6164)
- REGIONAL, CROHN'S DISEASE, CHRONIC ULCERATIVE COLITIS, HEMOGLOBIN, SERUM ALBUMIN (5881)

ENTEROCOLITIS
- INTESTINAL MUCOSA, DUODENUM, ILEUM, JEJUNUM, COLON, REGENERATION (6248)

ENZYME
- 2, 4-DINITROPHENOL-ACTIVATED ADENOSIN TRIPHOSPHATASE, MITOCHONDRIA, LIVER DEXTRON SULFATE (5573)*
- ACETYLCHOLINESTERASE, ACTIVITY, ALTER ATION, ILEAL DENERVATION, RABBIT (5620)*
- ACID PHOSPHATASE, ALKALINE PHOSPHATASE, SMALL INTESTINE, DUODENAL EPITHELIUM, ULTRASTRUCTURE (5413)*
- ALCOHOL DEHYDROGENASE, CIRRHOSIS, LIVER, ZINC, COPPER MANGANESE, SELENIUM, CADMIUM, WILSON'S DISEASE (6002)
- ALCOHOL DEHYDROGENASE, PROTEIN, ETHANOL, LIVER, TOXICITY, RATS (6062)*
- ALCOHOL DEHYDROGENASE, INACTIVATION, LIVER, HORSE (5445)
- ALKALINE PHOSPHATASE, LEUCOCYTE, CIRRHOSIS, OBSTRUCTIVE JAUNDICE, CHRONIC HEPATITIS, CHOLECYSTITIS (5725)
- ALKALINE PHOSPHATASE, LEUCOCYTE, OBSTRUCTIVE JAUNDICE, ACUTE VIRAL HEPATITIS, TUMOR (5723)
- ALKALINE PHOSPHATASE, SERUM, PARTIAL GASTRECTOMY (5789)
- AMYLASE, SYNTHESIS, INHIBITION, LIVER, CYANIDE POISONING, PROTECTI RAT (5567)*
- ATPASE, INHIBITION, AMP, HUMAN MUCOS (5479)*
- CATALASE, CHEMISTRY, AMINO ACID (547
- CATALASE, PEROXISOME, HALF-LIFE, LABELLED LEUCINE (5610)
- CHOLECYSTECTOMY, TRANSAMINASES, SORBITOL DEHYDROGENASE, GASTRIC RESECTION, IDH ACTIVITY, LIVER DISEASE (6223)
- CREATINE PHOSPHOKINASE, SERUM, ACUTE PANCREATITIS (5970)
- CYTIDINE TRIPHOSPHATE SYNTHETASE, LIVER, PURIFICATION, PROPERTIES (5464)
- ESTERASE, ISOZYME, LIVER, MOUSE (544
- FATTY ACID SYNTHETASE, BINDING SITES LIVER (5442)*, (5460)
- GLUCOAMYLASE, INTESTINE, LIVER, MORPHOLOGY, MONKEY (5410)*
- GLUCOKINASE, LIVER, HYDROCORTISONE ACETATE, GLUCOSE, ESTRADIOL (5578)
- GLUCURONYL TRANSFERASE, JAUNDICE, BILIRUBIN COUPLING, NEWBORN INFANT (6003)
- GLUTAMATE FORMIMINOTRANSFERASE, SERINE HYDROXYMETHYLTRANSFERASE, METHYLENETETRAHYDROFOLATE DEHYDROGENASE, FORMYLTETRAHYDROFOLATE SYNTHETASE, JEJUNUM, DIET, FOLATE METABOLISM (5611)*
- GLYCOLYTIC, PHOSPHOFRUCTOKINASE, PYRUVATE KINASE, FRUCTOSEDIPHOSPHA TASE, HEXOKINASE, FRUCTOSE-1, 6-DIPHOSPHATE ALDOLASE, JEJUNUM, STEROID (5427)*
- GLYCOLYTIC, PYRUVATE KINASE, PHOSPH

PHATASE JEJUNUM, DIETARY REGULATION, FOLIC ACID (5613)•
YCOLYTIC ACTIVITY, HORMONES, JEJUNUM RAT (5619)•
ANASE, SGPT, DIAGNOSIS, ACUTE VIRAL HEPATITIS, LIVER DISEASE (5686)
PATIC, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS, PARTIAL HEPATECTOMY, RAT (5999)
ACTIVATION, SERINE DEHYDRATASE, SULFUR, MERCURIALS (5585)•
DUCTION, THERAPEUTICS, HYPERBILIRUBINEMIA (5469)
O-, CLINICAL SIGNIFICANCE, LIVER (6166)
OZYME, LIVER, PROTEIN, RAT, GUANINE DEAMINASE (5453)
CTATE DEHYDROGENASE, LIVER, CARCINOGEN, COPPER, MORPHOLOGY (5994)•
CTIC DEHYDROGENASE, LIVER, PERFUSION, MITOCHONDRIA, MICROSOMES, RAT (5575)•
CTOSE, SUCROSE, MALTOSE CARBOHYDRATE, DISACCHARIDE, INTESTINE, RAT , MALNUTRITION (5622)
PASE, LIPOLYTIC PANCREATITIS, CORTISONE (5961)•
VER, ALCOHOL, METABOLISM (5444)

VER, ACTIVITY, FATTY ACID SYNTHETASE, ACETYLTRANSACYLASE, MALONYLTRANSACYLASE (5441)•
VER, ACTIVITY, UDP GLUCURONYLTRANSFERASE, ULTRASOUND (5415)•
VER, CRYSTALLIZATION, PROPERTIES, HUMAN (5451)
VER, DRUG EFFECTS, STEROID (5564)•
VER, FATTY ACID SYNTHETASE, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
VER, FETUS, TRANSULFURATION, CYSTATHIONASE, CYSTATHIONINE, METHIONINE, CYSTINE (5420)•
VER, GRAFT, HEPATITIS, HUMAN, BABOON (6069)
VER, GLYCOPROTEIN, N-ACETYLGLUCOSAMINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)
VER, HEPATOMA, DNA POLYMERASE ACTIVITY, RIBOSOME MICROSOMES (5429)•
VER, HISTOCHEMISTRY, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)•
VER, HYPERTENSION, CIRRHOSIS (6124)
VER, MICROSOME, BARBITURATE, RAT (5601)
VER, MICROSOME, ETHANOL, UDPGT ACTIVITY (5604)
VER, MITOCHONDRIA, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)•
VER, NADPH CYTOCHROME C REDUCTASE, HUMAN, RAT (5418)•
VER, PORPHYRIN METABOLISM, BARBITURATE EFFECT (5563)•
ER, REGULATION, GLYCOLYSIS, BIOTIN DEFICIENCY (5569)•
ABOLISM, LIVER, CHICK (6228)
ABOLISM, PANCREATITIS, PANCREATIC SECRETION (5971)
ROSOMAL GLUCOKINASE, LIVER, GLYCOLYSIS REGULATION, SYNTHESIS, ATP INHIBITION, AMP, RAT (5428)•
MUCOSA, SMALL INTESTINE, ABORIGINE (5858)
NEONATE, DIABETIC MOTHERS, STEROID HORMONES, METABOLITES, HYPOGLYCEMIA (6240)
PANCREAS, AMYLASE, GLYCO-AMYLASE TEST (5728)
PANCREAS, AMYLASE, LIPASE, VAGOTOMY, BICARBONATES, SECRETIN (5825)•
PANCREATIC, PANCREATITIS, ACUTE ABDOMEN, DUODENAL JUICE, STOOLS (5666)
PEPSIN, GASTRIC SECRETION, ACID, ADRENOMIMETIC (5546)
PEPSIN, SECRETION, GASTRIN, FROG, ACID (5549)
PEPSIN, STOMACH MUCOSA, HYPERACIDITY, SIALIC ACID, PROTEOLYSIS (5531)•
PEROXISOME, LIVER, CYTOLOGY, FUNCTION (5446)
PHOSPHATASE, DRUG-METABOLIZING, LIVER, TOXICITY, CARBON TETRACHLORIDE (5425)•
PHOSPHOFRUCTOKINASE, LIVER (5438)•
PLEURAL EFFUSION, PANCREATIC DISEASE, COMPLICATIONS, SURGERY (5957)
PROTEASE, ASPERGILLUS, PH (5642)
PROTEASE, SMALL INTESTINE, LYSOZYME, CHYMOTRYPSIN (5617)•
PROTEOLYTIC, ACUTE PANCREATITIS, SECRETIN STIMULATION, HEMORRHAGIC NECROSIS, EDEMA (5781)
PROTEOLYTIC, PEPSIN, GASTRICSIN, INACTIVATORS (5538)
RAT LIVER, MITOCHONDRIA, E.COLI, AEROBIC OXIDATION (5452)
REGULATION, LIVER, CARCINOGENIC COMPOUNDS, RAT (6079)
SECRETION, EXOCRINE PANCREAS, GLUCAGON, GLUCOSE (5552)•
SGOT, SGPT, ACUTE HEPATITIS, CAFFEINE, THEOPHYLLINE, HEPATOTOXICITY (5821)
STRUCTURE, ACTIVITY, X-CHYMOTRYPSIN (5468)
TRANSAMINASE, ACUTE VIRAL HEPATITIS, LIVER FUNCTION, ACETYLATION RATE (6043)
TRANSAMINASE, LACTIC DEHYDROGENASE, GLUTAMIC-OXALOACETATE, GLUTAMIC-PYRUVATE, HEART, LIVER, SKELETAL MUSCLE, KIDNEY, PANCREAS (5662)
TRYPSIN, CHYMOTRYPSIN, SECRETION, INTESTINAL GLANDULAR CELLS, ANNELID (5634)
TRYPSIN, PANCREATITIS, SERUM, PROTEIN (5977)
TRYPTOPHAN OXYGENASE, FLAVIN, LIVER, RAT (5596)
TRYPTOPHAN PYRROLASE, ACTIVITY, LIVER, NICOTINE (5466)
TYROSINE AMINOTRANSFERASE, ALPHA-KETO ACID, LIVER, EMBRYO (5463)
TYROSINE AMINOTRANSFERASE, NUCLEOTIDE, LIVER (5562)•
TYROSINE TRANSAMINASE. NOREPINEPHRINE, RAT (5591)•

EPIDEMIOLOGY
- ACUTE VIRAL HEPATITIS, ANTIGEN (6099)
- ACUTE VIRAL HEPATITIS, CHRONIC (6104)
- ACUTE VIRAL HEPATITIS, ETIOLOGY (6089)

- BILHARZIASIS, SALMONELLA, SOUTH AFRICA (6277)
- COLI ENTERITIS, INFANTS, STOOLS, RESISTANCE TYPE (6164)
- GIARDIASIS, DIAGNOSIS, TREATMENT (6261)
- SALMONELLA GASTROENTERITIS (6249)
- SHIGELLA, DYSENTERY, NEW ZEALAND (6274)
- TYPHOID, PARATYPHOID, SALMONELLA, ELIMINATION (6159)
- VIRAL HEPATITIS, CIRRHOSIS, HYPERGAMMAGLOBULINEMIA, BSP, TRANSAMINASES, MACRONODULAR LIVER (6119)
- VIRUS, RURAL FAMILIES, DOMESTIC ANIMALS (6176)

ESOPHAGUS
- ACHALASIA, DYSPHAGIA, CARDIAL TUBE, CARDIOMYOTOMY, DILATATION (5760)
- ACHALASIA, MANAGEMENT (5751)
- ACHALASIA, SURGERY, PH, REFLUX (5758)
- ATRESIA, SURGERY, NEONATE (5749)
- BENIGN TUMORS, MESODERMAL, LIOMYOMA, SURGERY (5754)
- BLEEDING VARICES, PORTACAVAL SHUNT, CIRRHOSIS (6113)*
- CANCER, CARDIA, RESECTION, RADIOTHERAPY (5756)
- CARCINOMA, X-RAY THERAPY (5746)
- CARDIA, TUMOR, ENDOSCOPY, ESOFIBROSCOPE, BIOPSY, PSEUDO-TUMORS, MALIGNANCY (5663)
- CLOSURE FORCE, MANOMETRY, INFUSED CATHETER, HUMAN (5507)*
- CYTO-DIAGNOSIS, MALIGNANCY, SPECIMEN COLLECTION (5665)
- DISORDER, LUNG RESECTION, MANOMETRY (5752)
- ESOPHAGEAL-GASTRIC HERNIA, SURGERY, MANOMETRY (5718)
- ESOPHAGITIS, GASTRIC INTUBATION, HIATAL HERNIA, PAIN, STENOSIS, DYSPHAGIA (5737)
- PEPTIC, ESOPHAGITIS, STENOSIS, DYSPHAGIA, EDER PUESTOW, DILATATION, HIATAL HERNIA (5736)
- ESOPHAGOBRONCHIAL FISTULA, PULMONARY SUPPURATION, DIAGNOSIS (5762)
- ESOPHAGO-TRACHEAL FISTULA, CONGENITAL, ADULT (5748)
- FUNDOPLICATION,HIATAL HERNIA, NISSEN'S TECHNIQUE, ULCER, PYLOROPLASTY (5739)
- GASTROSCOPY, STOMACH, COMPLICATION (5680)
- HIATAL HERNIA, INFANTS, CHILDREN, CONGENITAL MALFORMATION, ANTISPASMOTICS, SURGERY (5738)
- HIATAL HERNIA, DIAGNOSIS, TREATMENT (5753)
- HIATAL HERNIA, HILL SUTURE (5745)
- HIATAL HERNIA, PRESSURE, INFERIOR SPHINCTER (5649)*
- HIATAL HERNIA, SURGERY (5747)
- LEIOMYOMA, SURGERY (5750)
- LOWER RING, HIATAL HERNIA, SURGERY (5741)
- MALIGNANT MELANOMA, CHILD (5743)
- MALLORY-WEISS SYNDROME, GASTRIC MUCOSA, RUPTURE, COUGHING, DEFECATION, CHILD BIRTH (5740)
- MUSCULAR WALL, PHRENO-ESOPHAGEAL MEMBRANE, ANATOMY (5462)
- OBSTRUCTION, CICATRIX, CHILDREN, SURGERY (5755)
- PEPTIC ESOPHAGITIS, STENOSIS, ESOPHAGEAL SPHINCTER, CARDIA, GASTRIC ASPIRATION (5735)
- PEPTIC STENOSIS, CANCER, THORACOTOMY, CYTODIAGNOSIS, RADIOLOGY (5664)
- PNEUMATIC DILATION, DYSPHAGIA (5759)
- RECONSTRUCTION, STOMACH, TUBE (5732)*
- RECONSTRUCTIVE SURGERY, GASTRIC TUBE, CHILDREN (5734)*
- REPLACEMENT, SURGERY, MALIGNANT DISEASE (5757)
- RETENTION CYST (5742)
- SCLERODERMA, DYSPHAGIA, RADIOLOGY, GASTRIC HYPERCHLORHYDRIA, APERISTALSIS (6243)
- SPASM, DILATATION, SPHINCTER (5761)
- SPASM, MOTILITY, GASTRIC CARCINOMA (5790)
- STOMACH, BRUSHING CYTOLOGY, CANCER, DIAGNOSIS (5654)*
- STOMACH, REFLUX, PREVENTION, RESECTION, ESOPHAGUS (5733)*
- TRACHEO-ESOPHAGEAL FISTULA, CHEST TRAUMA (5744)
- TUMOR, MULIER'S TEST, DIAGNOSIS (5721)
- VARICES, HEMORRHAGE, CHILDREN, STOMACH RUPTURE, NEWBORN, LIVER CIRRHOSIS (6222)

EXCRETION
- BILE ACID, CONJUGATION, CONTAMINATION, EFFECT, RAT (5492)*
- GLUTETHIMIDE, BILE, HUMAN, GALLBLADDER (5606)

FECES
- BACTERIA, MALABSORPTION, SMALL INTESTINE (6184)
- DEFECATION, AET, JEJUNUM, TAENIA COLI, RAT, GUINEA PIG, RABBIT (5623)
- FAT, FATTY ACID, TRIGLYCERIDE, LONG CHAIN, MEDIUM CHAIN (5499)
- HEPATIC PORPHYRIA, PORPHYRIN, URINE (6025)
- INTESTINE, BACTERIA (6230)

FEVER
- PARATYPHOID, TYPHOID, ELIMINATION, GREEN SALAD, CONTAMINATED FOOD, EPIDEMIC (6159)
- TYPHOID, DIAGNOSIS, ETIOLOGY, TREATMENT, EPIDEMIOLOGY, SALMONELLA (6200)
- TYPHOID, THERAPY, VI-ANTIGEN (6241)

FISTULA
- ANORECTAL, SURGERY (5731)
- BILIARY TRACT, X-RAY, DIAGNOSIS (5706)
- DUODENUM, COLON, DIAGNOSIS, SURGERY (5709)
- ESOPHAGOBRONCHIAL, PULMONARY SUPPURATION, DIAGNOSIS (5762)
- ESOPHAGO-TRACHEAL, CONGENITAL, ADULT (5748)
- GALLBLADDER, BILE, STEROIDS (5682)
- GASTROCUTANEOUS, STOMACH, SURGERY (5799)
- LATERAL DUODENAL, SURGERY, DUODENOJEJUNOSTOMY (5774)
- PANCREAS, ACUTE VIRAL HEPATITIS (6094)
- PANCREAS, SECRETION, CASEIN HYDOLYSATE (5555)

TRACHEO-ESOPHAGEAL, CHEST TRAUMA (5744)
ALLBLADDER
ACUTE CHOLEYSTITIS, SERUM SIALIC ACID (6140)
ACUTE CHOLECYSTITIS, SURGERY (6141), (6142)
ACUTE NONCALCULOUS CHOLECYSTITIS, POSTOPERATIVE (6134)
BILE, GLUTETHIMIDE, HUMAN (5606)
BILE, STEROIDS, FISTULA (5682)
BILE DUCT, BILE FLOW, CHOLEDOCHUS (5570)•
CHOLECYSTECTOMY, CHOLANGIOGRAPHY, CHOLECYSTITIS (6135)
CHOLECYSTITIS, LIVER PROTEIN, ELECTROPHORESIS (6154)
CHOLECYSTITIS, RADIOLOGY, DIAGNOSIS (5715)
CHOLECYSTOCHOLANGIOGRAPHY, CHOLEVID, DIAGNOSIS (5707)
CHOLECYSTOPANCREATITIS, ACUTE, PRIMARY, RECURRENT (5978)
CHOLELITHIASIS, ASYMPTOMATIC (6139)
DISEASE, DIAGNOSIS, RADIOISOTOPE (5730)
DISEASE, PHARMACOTHERAPY, PATHOPHYSIOLOGY, CHOLELITHIASIS (6132)
GALLSTONE, BILIARY, OBSTRUCTION, CHOLEDOCHAL CYST, STRICTURE (6150)
GALLSTONE, PHOSPHOLIPID SYNTHESIS, SECRETION (6129)
INFUSION CHOLANGIOGRAPHY (5727)
PARASITE, CAT (6282)
REMOVAL, DRAINAGE, CHOLEDOCHUS, CYSTIC DUCT (6140)
SURGERY, DUODENUM, HEMATOMA, BILE DUCT (5813)
VOLVULUS, NON-LITHIASIC CHOLECYSTOPATHY, SURGERY (6147)
S
DISTENSION, GASTROINTESTINAL TRACT, CLINICAL TESTING, RADIOLOGY, CEOLAT (6236)
NITROGEN, SMALL INTESTINE, AMINO ACID, AGING, RAT (5443)
STROINTESTINAL TRACT
ABSORPTION, CELL TRANSPORT (5498)
ABSORPTION, KEROSENE, PNEUMONITIS (5497)
ABSORPTION, TAURINE, GLYCINE, ASPIRIN, SMALL INTESTINE (5503)
ACTIVITY, NERVE CELL, TRACT WALLS (5637)
ALLERGY, FOOD ALLERGY, ULCERATIVE COLITIS (6163)
AMMONIA METABOLISM, TRANSPORT (5634)
ATROPHIC GASTRITIS, ULCERATIVE COLITIS, REGIONAL ENTERITIS, CHRONIC AGGRESSIVE HEPATITIS, BILIARY CIRRHOSIS, AUTOIMMUNE MECHANISMS (6222)
BISMUTH-SORBITOL, HIATAL HERNIA, ULCER, DYSPEPSIA, BILIARY DISEASE, COLITIS, CONSTIPATION (6167)
DISTENSION, DIMETHYLPOLYSILOXAN, CEOLAT, CLINICAL TESTING, RADIOLOGY (6236)
DIVERTICULUM, DIVERTICULITIS, RADIOLOGY, DIAGNOSIS (6197)
GASTROENTERITIS, NEONATAL, NURSLING MALABSORPTION, LOW-LACTOSE MILK, REALIMENTATION (6160)
GASTROENTERITIS, SALMONELLA, EPIDEMIOLOGY (6249)
GASTROENTERITIS, VIRUS, NEONATE (6172)
HEART DISEASE (6187)
HEMORRHAGE, ANGIOGRAPHY, LOCALIZATION, DUODENAL ULCER, CELIAC OCCLUSION (5674)
HEMORRHAGE, ASPIRIN, 2-DEOXYGLUCOSE, MUCOSAL LESION, VAGOTOMY (5763)•
HEMORRHAGE, MALLORY-WEISS SYNDROME, PANCREATIC CARCINOMA, LYMPHOSARCOMA, SARCOMA (6238)
LYMPHOGRANULOMATOSIS (6192)
MALLORY-WEISS SYNDROME, GASTRIC MUCOSA, RUPTURE, THORACO-ABDOMINAL LESION, HEMORRHAGE, COUGHING, DEFECATION, CHILD BIRTH (5740)
MOTILITY, INFERIOR VENA CAVA (5525)
PARASITES, NEMATODE (6259)
POISON, LIVER, ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITAL (5639)
POLYPOSIS, JUVENILE, CONGENITAL, SURGERY (6186)
PSYCHOSOMATIC, SPASM, DIARRHEA (6204)
SURGERY, ADVANCES (5801)
GENITOURINARY TRACT
KIDNEY, EDTA-MED, PANCREAS, BLOOD SUGAR, LIVER (5641)
KIDNEY, FUNCTION, CIRRHOSIS, RENIN ACTIVITY, CATECHOLAMINE (6126)
KIDNEY, TRANSPLANT, HEPATORENAL SYNDROME (6035)
RENAL DISEASE, PERITONEAL DIALYSIS, TRANSPLANTATION, HEMODIALYSIS, CATHETERS, INFLAMMATION, CARDIOVASCULAR DISTURBANCES (6165)
RENAL FUNCTION, CIRRHOSIS (6127)
RENAL INSUFFICIENCY, LIVER INVOLVEMENT, CHOLANGITIS (6042)
GIARDIASIS
EPIDEMIOLOGY, DIAGNOSIS, TREATMENT (6261)
GLAND
PAROTID, EXOCRINE PANCREAS, FOOD REDUCTION, DIET (5556)
GRANULOMA
LYMPHOGRANULOMATOSIS, GASTROINTESTINAL TRACT (6192)
HEART
CARDIAC INSUFFICIENCY, LDH, MYOCARDIAL INFARCT, CREATINE PHOSPHOKINASE SGOT (5662)
DISEASE, GASTROINTESINAL TRACT (6187)
HEMOCHROMATOSIS
CIRRHOSIS, IRON METABOLISM (6000)
HEMORRHAGE
ACUTE ULCER, STOMACH, INTESTINE (6193)
GASTRIC, CYTOSCOPIC CONTROL (5791)
GASTROINTESTINAL TRACT, MALLORY-WEISS SYNDROME, PANCREATIC CARCINOMA, LYMPHOSARCOMA (6238)
GASTROINTESTINAL TRACT, CELIAC OCCLUSION, DUODENAL ULCER, ANGIOGRAPHY, LOCALIZATION, DIAGNOSIS (5674)
INTESTINAL, INFANTS, CHILDREN, ESOPHAGEAL VARICES, STOMACH RUPTURE, ANGIOPATHY, HYPOPROTHROMBINEMIA, LIVER CIRRHOSIS (6222)
PSEUDOCYST, PANCREATITIS (5976)
STERCORAL ULCER, CARDIOVASCULAR DISEASE (5906)
STRESS ULCER, POSTOPERATIVE, STOMACH,

  DUODENUM (5772)
  STRESS ULCER, VAGOTOMY, PYLOROPLASTY (5835)
  VON RECKLINGHAUSEN'S DISEASE, CHRONIC ANEMIA (6245)
HEPATITIS
  ACUTE, COMA, EARLY DIAGNOSIS (5660)*
  CHRONIC, ACUTE VIRAL, AUSTRALIA ANTIGEN (6050)
  CHRONIC, ALCOHOL, CIRRHOSIS (6122)
  CHRONIC, ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
  CHRONIC, AUTOIMMUNE, SEROLOGICAL DIAGNOSIS (5669)
  CHRONIC, BETA-LA-GLOBULIN-(C'3), SCLERODERMA, KIDNEY DISEASE, RHEUMATIC DISEASE (6105)
  CHRONIC, CIRRHOSIS, HEMODYNAMIC PARAMETERS (6108)
  CHRONIC, CIRRHOSIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
  CHRONIC, CYTOLYSIS SYNDROME, LIVER, CHILDREN, CIRRHOSIS (6001)
  CHRONIC, FOLLICULAR, HISTOLOGY, AUTOIMMUNIZATION, LIVER (5668)
  CHRONIC, GLYCOPROTEINS, ENDOSCOPY, BIOPSY, DIABETICS, PROTEIN-BOUND POLYSACCHARIDES (5647)*
  CHRONIC, IMMUNOLOGY, GAMMA GLOBULIN (6107)
  CHRONIC, IMMUNOGLOBULINS, DIAGNOSTIC PATTERN (6115)*
  CIRRHOSIS, TRANSAMINASES, ALKALINE PHOSPHATASE, BSP, HYPERGAMMAGLOBULINEMIA, PERILOBULAR FIBROSIS, MACRO-NODULAR LIVER (6119)
  FULMINATING, LIVER GRAFT, PROTEIN METABOLISM, HEPATIC ENZYMES, HUMAN, BABOON (6069)
  FUNCTIONAL, LC 9066, PANCREATITIS, CONSTIPATION, COLITIS (6168)
  INOCULATION, INFANTS, BIOPSIES, AUTOPSIES, TOXOPLASMOSIS, CYTOMEGALIA, RUBELLA SYNDROME, BLOOD TRANSFUSIONS (6086)
  LIVER FUNCTION, ONE-STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN, INFANTS (5661)*
  NEONATAL, CLASSIFICATION, PERINATAL IDIOPATHIC HEMOCHROMATOSIS (6077)
  NON-VIRAL, ACUTE, AFLATOXIN, UGANDA (6070)
  NON-VIRAL, ACUTE, CAFFEINE, THEOPHYLLINE, RAT (5821)
  NON-VIRAL, ACUTE, EXCHANGE TRANSFUSION, COMA, STEROID (6063)
  NON-VIRAL, ACUTE, HALOTHANE ANESTHESIA, IRRADIATION THERAPY, UTERINE CANCER (6076)
  NON-VIRAL, ACUTE, HALOTHANE, ERYTHROID APLASIA (6064)
  NON-VIRAL, ACUTE, LIVER, AFLATOXIN, MONKEY (6065)
  NON-VIRAL, ACUTE, LIVER, MUSHROOM POISONING, CARBOHYDRATE METABOLISM (6066)
  NON-VIRAL, ACUTE, LIVER NECROSIS, HALOTHANE ANESTHESIA (6203)
  NON-VIRAL, ACUTE, LIVER TRAUMA (6083)
  NON-VIRAL, ACUTE, LUPOID, JAUNDICE (6109)
  NON-VIRAL, ACUTE, TRAUMA (6188)
  NON-VIRAL, ACUTE, TRAUMA, LIVER, COPPER (6067)
  NON-VIRAL, CARCINOGEN, GLYCOLYSIS, ENZYME REGULATION (6079)
  TRANSPLANTATION, BABOON'S LIVER, BILIRUBINEMIA, AMMONIEMIA, TRANSAMINASE (6007)
  VIRAL, ACUTE, ALKALINE PHOSPHATASE, LEUCOCYTE, OBSTRUCTIVE JAUNDICE, TUMOR (5723)
  VIRAL, ACUTE, ANTIGEN, EPIDEMIC (6099)
  VIRAL, ACUTE, ARGININE, MALIC ACID, CIRRHOSIS (6044)
  VIRAL, ACUTE, AUSTRALIA ANTIGEN (6090)
  VIRAL, ACUTE, AUSTRALIA ANTIGEN, DIAGNOSIS, CARRIER (6087)
  VIRAL, ACUTE, AUSTRALIA ANTIGEN, RADIOIMMUNOASSAY (5700)
  VIRAL, ACUTE, AUSTRALIA ANTIGEN, SERU
    (5699)
  VIRAL, ACUTE, AUSTRALIA/SH ANTIGEN (6098)
  VIRAL, ACUTE, BLOOD COAGULATION (6095
  VIRAL, ACUTE, CHRONIC, CIRRHOSIS, BOTKIN'S DISEASE, CHILDREN (6093)
  VIRAL, ACUTE, CHRONIC, EPIDEMIOLOGY (6104)
  VIRAL, ACUTE, CIRRHOSIS, SMALL INTESTINE, MUCOSAL CHANGE (5867)
  VIRAL, ACUTE, CIRRHOSIS, AMINO ACID, GAMMA GLOBULIN (6013)
  VIRAL, ACUTE, DIAGNOSIS, RING PRECIP
    TATION REACTION (5726)
  VIRAL, ACUTE, DRUG ADDICTION (6085)
  VIRAL, ACUTE, DRUG ADDICTS, ANTIGEN, ADOLESCENT (6100)
  VIRAL, ACUTE, ENZYME, ACETYLATION RATE, LIVER FUNCTION (6043)
  VIRAL, ACUTE, ETIOLOGY, EPIDEMIOLOGY (6089)
  VIRAL, ACUTE, FAMILY (6092)
  VIRAL, ACUTE, FOLLOW-UP (6102), (610
  VIRAL, ACUTE, IMMUNOLOGY, PARTICLES (5454)
  VIRAL, ACUTE, JAUNDICE, CHOLESTASIS, DIAGNOSIS (6097)
  VIRAL, ACUTE, LIVER BIOPSY, BOTKIN'S DISEASE, CHILDREN (6084)
  VIRAL, ACUTE, LIVER, CIRRHOSIS, CARCINOMA, AFRICA (6027)
  VIRAL, ACUTE, LIVER MITOSIS (6096)
  VIRAL, ACUTE, LIVER, TOXICITY (6034
  VIRAL, ACUTE, NON-VIRAL, CHRONIC SUBCLINICAL, CONNECTIVE TISSUE, DISEASE (6110)
  VIRAL, ACUTE, PANCREATIC FISTULA (6094)
  VIRAL, ACUTE, SEROTONIN METABOLISM, CIRRHOSIS (6117)
  VIRAL, ACUTE, SERUM GUANASE, DIAGNO
    SIS, SGPT, LIVER DISEASE (5686)
  VIRAL, ACUTE, SERUM, LIVER (6091)
  VIRAL, ACUTE, SERUM, SH ANTIGEN, DR
    USERS (5695)
  VITAMIN B12, FOLIC ACID, ACUTE, BIL
    RUBIN, TRANSAMINASES, ELECTROPHOR
    SIS, ALKALINE PHOSPHATASE (6078)
HEPATOBILIARY TRACT
  BILE ACID COMPOSITION, LITHOCHOLIC ACID, ANTIBIOTIC EFFECT (5587)*

RNIA
- DIAPHRAGMATIC, BOCHDALEK, SURGERY (6210)
- ESOPHAGEAL, HIATUS, SURGERY (5747)
- ESOPHAGEAL, GASTRIC TUMOR, STENOSIS, DUODENUM, DIVERTICULUM (5802)
- ESOPHAGEAL-GASTRIC, DIAGNOSIS, SURGERY, MANOMETRY (5718)
- EVISCERATING, SUTURE SINUS (6173)
- HIATAL, ESOPHAGUS, DIAGNOSIS, TREATMENT (5753)
- HIATAL, ESOPHAGOSCOPY, FUNDOPLICATION, ENDOSCOPY, NISSEN, PYLOROPLASTY, ULCERS, HEMORRHAGE (5739)
- HIATAL, HILL SUTURE (5745)
- HIATAL, INFANTS, CHILDREN, CONGENITAL, SUB-DIAPHRAGMATIC, MALFORMATION, CARDIA, GASTRIC EVACUATION (5738)
- HIATAL, OCCULT BLOOD LOSS, ULCERATIVE COLITIS (5684)
- HIATAL, REFLUX, SPHINCTER PRESSURE (5649)•
- HIATAL, LOWER ESOPHAGEAL RING, SURGERY (5741)
- HIATUS, SURGERY, RADIOLOGY (5701)
- INGUINAL, CHYLOUS ASCITES, INFANT, LYMPHATICS (6207)
- LIVER, NEONATE (6037)
- BONE, VITAMIN D DEFICIENCY, MALABSORPTION (5892)

TOLOGY
- DUODENUM, HETEROTOPIC GASTRIC MUCOSA, PEPTIC ULCER (5826)•
- EPITHELIUM, JEJUNUM, NEUTRAL AMINO ACID (5500)
- EPITHELIUM, SMALL INTESTINE, CELL SUSPENSION (5467)
- HISTOCHEMISTRY, ASCITES HEPATOMA, AH 13, AH 39, ENZYME ACTIVITY, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS (5987)•
- HISTOCHEMISTRY, LARGE INTESTINE, MUCOSA, PEROXIDASE ACTIVITY, MUCUS-SECRETING CELLS, CRYPTS (5439)•
- HISTOCHEMISTRY, LIVER, ENZYME, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)•
- HISTOCHEMISTRY, LIVER, MITOCHONDRIA, ENZYME ACTIVITY, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)•
- HISTOCHEMISTRY, LIVER, MITOCHONDRIA, MEMBRANE, MONOAMINE OXIDASE, ENZYME MARKER (5440)•
- HISTOCHEMISTRY, SMALL INTESTINE, MUCOSA, SUBCELLULAR FRACTIONS, DIHYDROSPHINGOSIN, PALMITIC ACID (5616)•
- LIVER, FOLLICULAR HEPATITIS, AUTOIMMUNIZATION (5668)
- LIVER, HEPATIC INJURY, CARDIOPATHOGENIC DIET, ATP-SPOFA (5993)•
- RECTAL MUCOSA, MICROSCOPY, SMALL INTESTINE (5679)

MONE
- BRADYKININ, GASTRIC SECRETION (5539)
- CHOLECYSTOKININ, SMALL BOWEL PERISTALSIS, ACCELERATION, CONTRAST STUDY (5694)
- FETAL LIVER, FORMATION, IN VITRO (5605)
- GASTRIN, GASTRIC SECRETION, FROG, VAGOTOMY (5537)
- GASTRIN, MUCOSAL RECEPTORS, ANTICHOLINERGICS, ANTRECTOMY (5532)•
- GASTRIN, PLASMA, HUMAN, HEPATADECAPEPTIDE GASTRIN, SIZE, CHARGE (5547)
- GASTRIN, RELEASE, VAGOTOMY, ANTRAL DISTENTION (5540)
- GASTRIN, SECRETION, FROG, ACID, PEPSIN (5549)
- GASTRIN, PENTAGASTRIN, WATER-SOLUBLE EXTRACT, HOG ANTRAL MUCOSA, HISTAMINE CONTENT (5530)•
- GASTRIN, SECRETIN, PANCREATIC CHOLERAIC SYNDROME, TUMOR, BLOOD, EXTRACT, BIO-ASSAY (6156)•
- GASTRIN PENTAPEPTIDE, STOMACH, SEROSA, ELECTRICAL ACTIVITY, MOTILITY (5514)•
- GLUCAGON, AMINO ACID TRANSPORT, LIVER SLICE (5493)•
- GLUCAGON, INTESTINE, SECRETION, INSULIN, DOG (5614)•
- GLUCAGON, SECRETION, EXOCRINE, PANCREAS, ENZYMES, GLUCOSE (5552)•
- INSULIN, METABOLISM, OBESITY, GLUCOSE, JEJUNOILEOSTOMY (5865)
- PENTAGASTRIN, GASTRIC SECRETION, GASTRIC ACID, PEPSIN, HEXAMETHONIUM (5535)•
- PITRESSIN, POST-HYPOPHYSEAL EXTRACT, SURFACE MUCOSAL CELLS, LESIONS (5764)•
- SECRETIN, GASTRIN, STOMACH, ANTRAL MUCOSA, CHROMATOGRAPHY (5528)•
- SECRETIN, JORPES NATURAL SECRETIN, SYNTHETIC POLYPEPTIDE SECRETIN, SMALL INTESTINE, MOTILITY, MYOELECTRIC ACTIVITY (5519)•
- SECRETIN, PANCREATIC SECRETION, AMYLASE, LIPASE (5825)•
- SEX, GLYCOLYTIC ENZYME ACTIVITY, JEJUNUM, RAT (5619)•
- SMALL INTESTINE, MOTILITY, CHOLECYSTOKININ-PANCREOZYMIN, SECRETIN (5516)•
- STEROID, DIABETIC MOTHERS, URINE, LACTATE, PYRUVATE, ENZYMATIC SYSTEM, NEONATE (6240)
- THYROXINE, METAMORPHOSIS, LIVER ULTRASTRUCTURE, TADPOLE (5465)

ILEOCECUM
- ACUTE APPENDICITIS, CHRONIC APPENDICITIS, CROHN'S DISEASE (5861)

ILEUM
- ATRESIA, INTRAUTERINE, INTUSSUSCEPTION (5864)
- CONGENITAL ATRESIA, JEJUNUM, COLON (6200)
- DIAGNOSTIC PROCEDURE, ISCHEMIA, DYE TEST (5658)•
- EVISCERATION, ANUS, RECTOSIGMOID RUPTURE (5930)
- FILLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, DUODENUM, GASTRIC MUCOSA (5875)
- PRESTOMAL, ILEITIS, SMALL INTESTINE, CORTICOSTEROID (5882)
- ILEORECTAL ANASTOMOSIS, ULCERATIVE COLITIS (5950)
- ILEOSTOMY, COLOSTOMY, DIET, DIARRHEA (5903)

  MECKEL'S DIVERTICULUM (5873)
  MOTILITY, AET, RAT (5623)
  MOTILITY, SMOOTH MUSCLE, CATECHOLAMINES, ADRENALINE, NORADRENALINE, ISOPRENALINE, ADRENOCEPTORS (5517)*
  RESECTION, REVERSAL (6182)
  PEYER'S PATCHES, IRRADIATION, CERIUM 144, RAT (6190)
  WALL, DENERVATION, ACETYLCHOLINESTERASE, ACTIVITY, RABBIT (5620)*
IMMUNOLOGY
  ANTIGEN, CHOLERA, RAT FOOT EDEMA MODEL (6175)
  AUSTRALIA ANTIGEN, PARTICLES (5454)
  AUTOIMMUNE DISEASES, ATROPHIC GASTRITIS, ULCERATIVE COLITIS, REGIONAL ENTERITIS, CHRONIC AGGRESSIVE HEPATITIS (6222)
  CHOLERA, EXO-INTEROTOXIN, RABBIT (6157)*
  CHRONIC HEPATITIS, LIVER, GAMMA GLOBULIN (6107)
  GAMMA GLOBULIN, ACUTE VIRAL HEPATITIS, CIRRHOSIS, AMINO ACID (6013)
  IMMUNITY, ANTIGEN, ASCARIS SUUM, HOST COMPONENTS (6268)
  LYMPHOCYTE TOXICITY, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, ALLOGENIC COLONIC EPITHELIAL CELL (5947)*
  TAPEWORM, HOST RESPONSE, COLOSTRUM TAENIA HYDATIGENA (6273)
  TAPEWORM, HOST RESPONSE, EMBRYO, CYST (6279)
  TYPHOID FEVER, VI-ANTIGEN (6241)
INTESTINE
  ABSORPTION, CALCIUM, PHOSPHORUS, LACTOSE TOLERANCE (5612)*
  ABSORPTION, EVERTED GUT TECHNIQUE (5479)*
  ABSORPTION, FREE AMINO ACIDS, PROTEIN (5483)*
  ABSORPTION, MALARIA, AMINO ACID (6275)
  ACUTE ULCER, HEMORRHAGE, STOMACH (6193)
  AET, DEFECATION, TAENIA COLI, JEJUNUM, RAT, GUINEA PIG, RABBIT (5623)
  AMEBIASIS, DYSENTERY, ENTAMOEBA HISTOLYTICA (6272)
  AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
  AMEBIC DYSENTERY, PARASITOLOGICAL EXAMINATION, VITAMIN THERAPY, AMEBICIDES (6253)
  ANTIBIOTIC, DYSBACTERIOSIS (6191)
  ANTISEPSIS, SURGERY (6246)
  ASPERGILLUS, PROTEASE, PH (5642)
  BACTERIA, FECES (6230)
  CROHN'S DISEASE, MORTALITY (5877)*
  CROHN'S DISEASE, REGIONAL ENTERITIS, HEMOGLOBIN, CHRONIC ULCERATIVE COLITIS (5881)
  CYST, PNEUMATOSIS INTESTINALIS (6267)
  DISACCHARIDES, RAT, MALTOSE, LACTOSE, SUCROSE, MALNUTRITION (5622)
  DRUG, ABSORPTION, DAMAGE, TRIPARANOL, IRRADIATION, RAT (5855)*
  DUODENUM, LYMPH, LIPOPROTEIN, ULTRASTRUCTURE, TRANSPORT (5417)*
  ENZYME, GLUCOAMYLASE, MORPHOLOGY, MONKEY (5410)*
  GIARDIASIS, METRONIDAZOLE, CHILDREN (6257)
  HEMORRHAGE, CHILDREN, INFANTS, ESOPHAGEAL VARICES, STOMACH RUPTURE, POLYPS, HEMANGIOMA (6222)
  ILEAL LOOP, EXO-ENTEROTOXIN, CHOLERA, IMMUNITY (6157)*
  ILEUS, ANTICOAGULANTS, MARCUMAR, HEMATOMA, BOWEL WALL, HEMATURIA (5862)
  INFARCTION, X-RAY (5716)
  LAMBLIA INTESTINALIS, BLUE CYSTS, PARASITE, LUGOL'S SOLUTION (6254)
  MALABSORPTION, CARBOHYDRATE, HYDROGEN RESPIRATORY, EXCRETION (5648)*
  MOTILITY, CONTRACTION, TONE (5515)*
  MUCOSA, PHOSPHOLIPID, LIPID ANALYSIS, GLYCEROL ETHERS (5416)*
  MUCOSA, PHOSPHORYLATION, PHOSPHOTRANS FERASE (5618)*
  PARASITE, ARTICTIS BINGTURONG, ARTHRO STOMA GUILHONI N.SP., NEMATODE (6278)
  PERFORATION, PERITONEAL DIALYSIS, CATHETER BLOCKING, HEMORRHAGE, METABOLIC DISTURBANCES, RESPIRATORY COMPLICATIONS (6165)
  PERFUSION STUDY, DIGOXIN ABSORPTION, RAT (5504)
  RUPTURE, PSEUDOMYXOMA PERITONEI, CACHEXIA, ABDOMINAL TRAUMA, DIGESTIVE DISORDERS (6239)
  SECRETION, GLUCAGON, INSULIN, CIRCULA TION, DOG (5614)*
  SENSITIZATION, ADRENALINE, ISOPRENALINE, SODIUM NITRIDE, SODIUM FLUOR ACETATE, RAT (5527)
  TRANSPORT, AMINO ACID, SUGAR, SODIUM SENSITIVITY (5478)*
  TUBERCULOSIS, PULMONARY, MALABSORPTION, VILLOUS ATROPHY (5891)
  TUMOR, RECURRENT, ILEUS, ADHESIONS, NOBLE OPERATION, APPENDICITIS, PERITONITIS (5856)
  VILLOUS, ATROPHY, TUBERCULOSIS, MALABSORPTION (5891)
  VIRUS, RURAL FAMILIES, EPIDEMIOLOGY (6176)
  WHIPPLE'S DISEASE, CORYNEBACTERIA, LYMPHANGIECTASIA, FROTHY HISTIOCYTES, PLASMODIA (5887)*
INTESTINE, LARGE
  ANUS, RECTUM, SURGERY (5731)
  APPENDECTOMY, APPENDICITIS, GERIATRI (5928)
  APPENDIX, ACUTE APPENDICITIS, MORBID ITY, MORTALITY (5900)
  APPENDIX, ACUTE APPENDICITIS, PERITO ITIS (5937)
  APPENDIX, ADENOCARCINOMA, ACUTE APPENDICITIS (5901)
  APPENDIX, APPENDECTOMY, CANCER RISK (5927)
  CANCER, ADHESION (5938)
  COLON, ABSORPTION, EDTA, ULCERATIVE COLITIS (5951)
  COLON, CANCER, DIAGNOSIS (5904)
  COLON, CANCER, SURVIVAL, SURGERY (5909)
  COLON, CUSHING'S SYNDROME, POLYPS (5926)

- COLON, DIVERTICULUM, DIVERTICULITIS (5919)
- COLON, ENDOMETRIOSIS, RECTUM (5910)
- COLON, MUCOSA, BLOOD VESSELS, LYMPHATICS, INTRA-ARTERIAL INJECTION (5435)*
- COLON, PERISTALSIS, INNERVATION, DRUG EFFECT, GANGLION BLOCKING AGENT, INHIBITION (5508)*
- COLON, PHARMACOTHERAPY (5922)
- COLON, REGENERATION, ENTEROCOLITIS (6248)
- COLON, RESECTION, BACTERIA, ILEOSTOMY (5931)
- COLON, RESECTION, COLORECTAL CANCER (5932)
- COLON, SMOOTH MUSCLE, CONTRACTION, RELAXATION, ALPHA RECEPTORS, BETA RECEPTORS, CATECHOLAMINE (5509)*
- COLON, TONUS, MEASUREMENT, DISTENSION (5511)*
- COLON, ULCERATIVE COLITIS, DIAGNOSIS, COMPLICATIONS, TREATMENT (5949)
- COLON, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, LYMPHOCYTE TOXICITY, ALLOGENIC COLONIC EPITHELIAL CELL (5947)*
- COLON, ULCERATIVE COLITIS, ILEORECTAL ANASTOMOSIS (5950)
- COLON, VILLOUS ADENOMA, RECTUM (5940)
- CROHN'S DISEASE, ULCERATIVE COLITIS, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5946)*
- DIAGNOSIS, DOUBLE CONTRAST TECHNIQUE (5722)
- FLORA, ANTIBIOTICS, TETRACYCLINE (5631)*
- HISTOCHEMISTRY, MUCOSA, PEROXIDASE ACTIVITY, MUCUS-SECRETING CELLS, CRYPTS (5439)*
- ISOLATED, COLON, PERISTALSIS, MECHANISM, INTRALUMINAL STIMULUS (5506)*
- PNEUMATOSIS, CYSTIC, JEJUNUM, ILEUM, CECUM, APPENDIX, COLON (6201)
- STERCORAL ULCER, HEMORRHAGE, CARDIOVASCULAR DISEASE (5906)
- SURGERY, STERILIZATION, GENTAMYCIN, FLORA (5941)
- ULCERATIVE, PROCTITIS, RECTAL MUCOSA, HEMORRHAGIC, GRANULAR, SIGMOIDOSCOPY (5948)
- UNDIAGNOSED, CANCER, RACE DIFFERENCES, RECTUM, COLON (5921)

TESTINE, SMALL

- ABSORPTION, AMINO ACIDS, CARNOSINE, HARTNUP DISEASE (5475)*
- ABSORPTION, AMINO ACIDS, JEJUNUM, DUODENUM (5482)*
- ABSORPTION, ASPIRIN, GLYCINE, TAURINE (5503)
- ABSORPTION, DRUG, MESENTERIC BLOOD FLOW (5501)
- ABSORPTION, HEMOGLOBIN, IRON (5490)*
- ABSORPTION, PEPTIC ULCER (5888)
- ABSORPTION, SULFAGUANIDINE, BILE SALT (5477)*
- AMINO ACID, AGING, NITROGEN, RAT (5443)
- ANGIOENDOTHELIOMA, STOMACH, OBSTRUCTIVE ILEUS (5795)
- BACTERIA, FECES, MALABSORPTION (6184)
- CELL MORPHOLOGY, ULTRASTRUCTURE, SALINE WASH, CELL LOSS, LEUCOCYTES (5433)*
- CHOLERA, RABBIT (5626)
- CHRONIC ENTERITIS, MOTILITY (6194)
- CHRONIC ULCER, SURGERY (5868)
- CHYLOUS ASCITES, LYMPHATIC, TRIGLYCERIDE, FATTY ACID (6218)
- CIRCULATION, ISCHEMIA, SUPERIOR MESENTERIC ARTERY OCCLUSION, CROSS TRANSFUSION, ISHEMIC LIVER (5988)*
- CONGENITAL ATRESIA, JEJUNUM, ILEUM, COLON (6208)
- CONTRACTION, AMPLITUDE, TONE, EFFECT, PROSTIGMINE, ANIMALS (5512)*
- DISEASES, PHARMACOTHERAPY, PATHOPHYSIOLOGY (5863)
- DIVERTICULA, LOCALIZATION, HEMORRHAGE, MALIGNANCY (5784)
- DRUG ABSORPTION, OLEIC ACID, POLYSORBATE 80, RAT (5502)
- DUODENAL, EPITHELIUM, ULTRASTRUCTURE, ELECTRON MICROSCOPY, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)*
- DUODENAL ULCER, SURGERY, VAGOTOMY (5778)
- DUODENUM, HETEROTOPIC, GASTRIC MUCOSA, HISTOLOGY, PEPTIC ULCER (5826)*
- DUODENUM, METABOLISM, LYSOLECITHIN (5621)*
- DUODENUM, MUCOSA, ABSORPTION, L-ALANINE, SODIUM EFFECT, THORYVELLA LOOPS (5489)*
- ENTEROCOLITIS, MUCOSA, REGENERATION, AUTORADIOGRAPHY, HISTOCHEMISTRY, UREMIA, MICE (6248)
- ENZYMES, DUODENUM, RABBIT (5617)*
- EPITHELIUM, MUCOSA, CELL SUSPENSION (5467)
- EPITHELIUM, NEUTRAL AMINO ACIDS, JEJUNUM (5500)
- GASTROSCHISIS, SURGERY, CONGENITAL DEFECT (6205)
- GIARDIASIS, MALABSORPTION (6280)
- HEMANGIOMA, OBSTRUCTION, VOLVULUS, CONGENITAL ATRESIA, NEONATE (5860)
- HEMOPERFUSION, TEMPERATURE DEPENDENCE, MOTILITY, ABSORPTION, O2 UTILIZATION (5615)*
- HISTOCHEMISTRY, MUCOSA, SUBCELLULAR FRACTION, DIHYDROSPHINGOSIN, PALMITIC ACID (5616)*
- ILEAL ATRESIA, INTRAUTERINE, INTUSSUSCEPTION (5864)
- ILEUM, DENERVATION, ACETYLCHOLINESTERASE, ACTIVITY, RABBIT (5620)*
- ILEUM, DIAGNOSTIC PROCEDURE, ISCHEMIA, DYE TEST (5658)*
- ILEUM, MOTILITY, SMOOTH MUSCLE, CATECHOLAMINES (5517)*
- ILEUM, PEYER'S PATCHES, IRRADIATION, CERIUM 144, RAT (6190)
- INTRALUMINAL PRESSURE, MOTILITY, HORMONAL CONTROL, MANN-BOLLMAN FISTULA (5516)*
- JEJUNUM, CHOLERA EXOTOXIN, SECRETION, CYCLOHEXIMIDE (6158)*
- JEJUNUM, FOLATE METABOLIZING ENZYMES, DIET, FOLATE (5611)*
- JEJUNUM, GLYCOLYTIC ENZYME ACTIVITY, HORMONE, RAT (5619)*
- JEJUNUM, GLYCOLYTIC ENZYMES, SEX STEROID REGULATION (5427)*

  - JEJUNUM, HUMAN, GLYCOLYTIC ENZYMES, DIETARY REGULATION, FOLIC ACID (5613)*
  - JEJUNUM, INFARCTION, PANCREATITIS (5968)
  - JEJUNUM, MORPHOLOGY, SPRUE, HAITI (5890)
  - MECKEL'S DIVERTICULUM (5873)
  - MECKEL'S DIVERTICULUM, PATHOLOGY (5871)
  - MECONIUM ILEUS, SURGERY (5874)
  - MOTILITY, MYOELECTRIC ACTIVITY, SECRETIN, ACTION POTENTIALS (5519)*
  - MOTILITY, SEROTONIN, COHERIN, BIEBLE LOOPS, DOGS (5510)*
  - MUCOSA, DUODENUM, JEJUNUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
  - MUCOSA, ENZYME, ABORIGINE (5858)
  - MUCOSA, IRON CONTENT, IRON ABSORPTION, NON-HEME IRON, HEMOGLOBIN (5484)*
  - MUCOSA, MICROSCOPY, RECTAL MUCOSA (5679)
  - MUCOSA, OLEIC ACID, ENDOGENOUS CHAINS, GLYCEROPHOSPHATE PATHWAY, TRIGLYCERIDES, PHOSPHATIDAL CHOLINE, PHOSPHOLIPIDS, RAT (5625)
  - OBSTRUCTION, SURGERY (5876), (6234)
  - PANETH CELL, METAL ISOTOPE, METAL ELIMINATION, EXPERIMENTAL ANIMALS (5481)*
  - PEUTZ-JEGHER'S SYNDROME, GASTRIC MUCOSA, DUODENUM, JEJUNUM, ILEUM (5875)
  - PNEUMATOSIS, CYSTIC, JEJUNUM, ILEUM, CECUM, APPENDIX, COLON (6201)
  - PRESTOMAL ILEITIS, CORTICOSTEROID (5882)
  - PRIMARY MULTIPLE CARCINOMA (5872)
  - REVERSAL, RESECTION, ILEUM (6182)
  - STENOSIS, AUTORADIOGRAPHY, RADIOLOGY, HISTOLOGY (6196)
  - STENOSIS, ULCER, PAPILLA, CHILD, DIFFERENTIAL DIAGNOSIS (5915)
  - TRYPSIN, CHYMOTRYPSIN, SECRETION, GLANDULAR CELLS, ANNELID (5634)
  - TRANSPORT, GLUCOSE METABOLISM (5491)*
  - TUMOR, PERFORATION, OBSTRUCTION (5869)
- IRON
  - ABSORPTION, HEMOGLOBIN, INTESTINE, RAT (5490)*
- JAUNDICE
  - ACUTE VIRAL HEPATITIS, CHOLESTASIS, DIAGNOSIS (6097)
  - BILE DUCT, CONGENITAL ANOMALY (6033)
  - CHRONIC, BILE DUCT, CONGENITAL MALFORMATION, PORTAL HYPERTENSION, HYPERPLASIA (6131)
  - COMMON, BILE DUCT OCCLUSION, GASTRIC TUMOR (5796)
  - HEMOLYTIC, NEONATE, FREE BILIRUBIN, GLUCURONYL TRANSFERASE, ALBUMIN-BILIRUBIN BINDING (6003)
  - IATROGENOUS INJURY, STENOSIS, PERFORATION (6221)
  - LIVER FUNCTION, ONE STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN, HEPATITIS, INFANTS (5661)*
  - LUPOID HEPATITIS, LIVER, JAUNDICE (6109)
  - NEONATAL, BREAST MILK, STEROIDS (5997)
  - NEONATAL, PHENOBARBITAL, HYPERBILIRUBINEMIA (6220)
  - NEONATAL OBSTRUCTIVE, HEPATITIS, PERINATAL IDIOPATHIC HEMOCHROMATOSIS (6077)
  - OBSTRUCTIVE, ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
  - OBSTRUCTIVE, ALKALINE PHOSPHATASE, LEUCOCYTE, ACUTE VIRAL HEPATITIS, TUMOR (5723)
  - OBSTRUCTIVE, CHOLESTASIS, PRURITIS (6016)
  - OBSTRUCTIVE, SURGERY, MORTALITY (6145)
  - RADIOLOGY, CHOLANGIOGRAPHY, DUODENOGRAPHY (5689)
- JEJUNOILEOSTOMY
  - OBESITY, GLUCOSE, INSULIN (5865)
- JEJUNUM
  - BIOPSY, MARASMUS, FAT ABSORPTION, CHILDREN (6224)
  - CONGENITAL ATRESIA, ILEUM, COLON (6208)
  - EPITHELIUM, NEUTRAL AMINO ACIDS (550
  - FILLING DEFECT, GALLSTONE ILEUS, RADIOLOGY, DUODENUM (5857)
  - FILLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, ILEUM, GASTRIC MUCOSA (5875)
  - FOLATE METABOLIZING ENZYMES, DIET, FOLATE, METABOLISM (5611)*
  - GLYCOLYTIC ENZYME ACTIVITY, HORMONE, RAT (5619)*
  - GLYCOLYTIC ENZYMES, DIETARY REGULATION, FOLIC ACID (5613)*
  - GLYCOLYTIC ENZYMES, SEX STEROID REGULATION (5427)*
  - INFARCTION, PANCREATITIS (5968)
  - INORGANIC ION CONTENT, L-ALANINE, MEMBRANE PERMEABILITY (5476)*, (5488)*
  - JEJUNOJEJUNAL INTUSSUSCEPTION, PANCREATODUODENECTOMY (5866)
  - MORPHOLOGY, SPRUE, HAITI (5890)
  - MOTILITY, AET, TAENIA COLI, DEFECATION, RABBIT (5623)
  - MUCOSA, DUODENUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
  - MUCOSA, LACTOSE MALABSORPTION, ADULT (5896)
  - MUCOSA, ULTRASTRUCTURE, NORMAL HISTOLOGY, CELIAC DISEASE (5885)*
  - PH, GASTRIC HYPERSECRETION, FAT DIGESTION (5893)
- LIPID
  - ABDOMINAL, CELIAC ARTERY, SUPERIOR MESENTERIC ARTERY, INFERIOR MESENTERIC ARTERY (6189)
  - ABSORPTION, BALANCE, MARASMUS, JEJUNUM, CHILDREN (6224)
  - ADIPOSE, MALNUTRITION, MUSCLE, INFA (6227)
  - BILE, MACROMOLECULAR ASSEMBLIES, BIL SALTS, CALCULUS, ACALCULOUS, GALLSTONES (5436)*
  - CHOLESTEROL, METABOLISM, ABSORPTION (5682)
  - CHOLESTEROL, METABOLISM, BILE ACID (5636)
  - CHOLESTEROL SYNTHESIS, LIVER, CARBO CHOLINE, ADRENALINE, RAT (5595)
  - CHOLESTEROL SYNTHESIS, LIVER, DIETA

INFLUENCE, MOUSE (5579)•
DIGESTION, GASTRIC HYPERSECRETION, JEJUNAL PH (5893)
ENDOGENOUS, FATTY ACIDS, INTESTINAL MUCOSA, TRIGLYCERIDES, PHOSPHATIDYL CHOLINE, PHOPHOLIPIDS, GLYCEROPHOSPHATE PATHWAY (5625)
FATTY ACID, LIVER, SYNTHESIS, FATTY ACID SYNTHETASE, ACETYLTRANSACYLASE, MALONYTRANSACYLASE (5441)•
FATTY ACID, SYNTHESIS, LIVER (5442)•
FATTY ACID, SYNTHESIS, SYNTHETASE, ACETYL GROUPS, MALONYL GROUPS, ACYL BINDING SITES (5423)•
FATTY ACID SYNTHETASE, BINDING SITES, LIVER (5460)
GLYCO-, METABOLISM, STORAGE DISEASE, LIVER (5411)•
HYPOCHOLESTEREMIA, HYDROXYLAMINE DERIVATIVE EFFECT, LIVER (5565)•
INTESTINAL MUCOSA, PHOSPHOLIPID, GLYCEROL ETHER (5416)•
LIPOFUSCINOSIS, LYMPH NODE (6203)
LIPOGENESIS, LIVER, PERFUSION, MITOCHONDRIA, MICROSOMES, RAT (5575)•
LIVER, METABOLISM, FAT LOAD, CC14 (5991)•
LONG CHAIN, TRIGLYCERIDE, MEDIUM CHAIN, FECES, FAT, FATTY ACID (5499)
LYSOLECITHIN, METABOLISM, DUODENUM, LIVER (5621)•
MALABSORPTION, MEDIUM CHAIN, TRIGLYCERIDE (5895)
METABOLISM, ALCOHOLIC INTOXICATION, SHORT-TERM, LONG-TERM, GLUCONEOGENESIS, KREBS CYCLE, RATS (6082)
METABOLISM, CARBOHYDRATE METABOLISM, CHOLINOMIMETICS, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)•
METABOLISM, DIET, CHOLINE, METHIONINE (5558)•
METABOLISM, ETHIONINE EFFECT, FATTY LIVER, HEPATIC ENZYMES, CYTOCHROMES, SPECTROSCOPY (6056)•
METABOLISM, LIVER, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)•
PALMITIC ACID, CARNITINE, ESTER, METABOLISM, MITOCHONDRIA, LIVER, RAT (5582)•
PHOSPHO-, INTESTINAL MUCOSA, LIPID ANALYSIS, GLYCEROL ETHER (5416)•
PHOSPHO-, POLYPHOSPHOINOSITIDES, LIVER, BRAIN, GUINEA PIG (5430)•
PHOSPHO-, SECRETION, SYNTHESIS, BILIARY TRACT, GALLSTONE (6129)
STEATOSIS, LOW CHOLINE, IRON, MAC DONALD DIET (RAT (5608)
SYNTHESIS, FATTY ACID SYNTHETASE, LIVER, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
TRIGLYCERIDE, CHYLOUS ASCITES, SMALL INTESTINE, FATTY ACID, LYMPHATIC (6218)
TRIGLYCERIDE, LIVER, ETHANOL (6071)
TRIGLYCERIDE, LIVER, FATTY ACID, CHAIN-LENGTH, UNSATURATION, RAT (5584)•

THIASIS
  COMMON BILE DUCT, SURGERY (6152)
  GALLBLADDER, ASYMPTOMATIC, GALLBLADDER (6139)
  GALLBLADDER, CHOLECYSTECTOMY, SUTURE, SURGERY (6137)
  GALLBLADDER, PANCREATIC FUNCTION (6146)
  GALLBLADDER, PHARMACOTHERAPY, PATHOPHYSIOLOGY (6138)
  GALLBLADDER, SITUS INVERSUS, NON-ROTATION (6216)
  PANCREATIC, DIET, RADIOLOGICAL DIAGNOSIS, GLUCOSE TOLERANCE (5962)

LIVER
  ABSCESS, DRUG INFUSION, UMBILICAL VEIN (6039)
  ACUTE HEPATITIS, COMA, EARLY DIAGNOSIS (5660)•
  ACUTE NON-VIRAL HEPATITIS, AFLATOXIN, NECROSIS, MONKEY (6065)
  ACUTE NON-VIRAL HEPATITIS, MUSHROOM POISONING, CARBOHYDRATE METABOLISM (6066)
  ACUTE NON-VIRAL HEPATITIS, ERYTHROID APLASIA (6064)
  ACUTE TRAUMA, COPPER, NON-VIRAL HEPATITIS (6067)
  ACUTE VIRAL HEPATITIS, AUSTRALIA ANTIGEN (5700)
  ACUTE VIRAL HEPATITIS, AUSTRALIA ANTIGEN, SERUM (5699)
  ACUTE VIRAL HEPATITIS, BIOPSY, BOTKIN'S DISEASE, CHILDREN (6084)
  ACUTE VIRAL HEPATITIS, BLOOD COAGULATION (6095)
  ACUTE VIRAL HEPATITIS, CHRONIC, EPIDEMIOLOGY (6104)
  ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS, CIRRHOSIS, BOTKIN'S DISEASE, CHILDREN (6093)
  ACUTE VIRAL HEPATITIS, DIAGNOSIS, RING PRECIPITATION REACTION (5726)
  ACUTE VIRAL HEPATITIS, ETIOLOGY, EPIDEMIOLOGY (6089)
  ACUTE VIRAL HEPATITIS, FAMILY (6092)
  ACUTE VIRAL HEPATITIS, FOLLOW-UP (6102), (6103)
  ACUTE VIRAL HEPATITIS, JAUNDICE, CHOLESTASIS, DIAGNOSIS (6097)
  ACUTE VIRAL HEPATITIS, MITOSIS (6096)
  ACUTE VIRAL HEPATITIS, SERUM (6091)
  ADH ACTIVITY, ETHANOL, TOXICITY, PROTEIN, RATS (6062)•
  AFLATOXIN, NON-VIRAL HEPATITIS, UGANDA (6070)
  ALCOHOL DEHYDROGENASE, INACTIVATION, HORSE (5445)
  ALCOHOL, TOXICITY, CIRRHOSIS, CHRONIC HEPATITIS (6122)
  ALTERATION, CHRONIC TONSILLITIS (6081)
  AMINO ACID TRANSPORT, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)•
  AMYLASE SYNTHESIS, INHIBITION, CYANIDE, PROTECTION, RAT (5567)•
  ANDROGEN, FETUS, IN VITRO FORMATION (5605)
  AUSTRALIA ANTIGEN, ACUTE VIRAL HEPATITIS (6090)
  AUTOIMMUNE HEPATITIS, SEROLOGICAL DIAGNOSIS (5669)
  AUTOIMMUNIZATION, FOLLICULAR HEPATITIS, HISTOLOGY (5668)
  BILE DUCT, CALCULI, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)

BILHARZIAL FIBROSIS, PARATHYROID (6281)
BILHARZIAN, PARASITE, HEPATIC LESIONS, THERAPEUTIC INDICATIONS (6252)
BILIFUGE ''PLAN'', BILIARY DISEASES, CLINICAL IMPROVEMENT, HEPATIC DISEASE (6005)
BIOPSY, CIRRHOSIS, DIAGNOSIS (5672)
BIOPSY, MENGHINI NEEDLE, MODIFIED ANGLE (5657)*
BIOTIN DEFICIENCY, GLYCOLYSIS, ENZYME REGULATION (5569)*
BLOOD FLOW, EXSANGUINATION, ARTERIAL PRESSURE, VENOUS PRESSURE, DEXTRAN, RAT (5644)
CALCIFIED CAVERNOUS HEMANGIOMA, SURGERY, RADIOLOGY (6015)
CANCER, ALPHA-FETOPROTEIN, SEROLOGICAL DIAGNOSIS (5651)*
CANCER, CARCINOGENESIS, OROTIC ACID, ETHIONINE, N-2-FLUORNYLACETAMIDE, 3'-METHYL-DIMETHYLAMINEAZOBENZENE (6060)*
CANCER, COPPER, ZINC, POTASSIUM (5698)
CARDIAC UPPER ABDOMEN SYNDROME, BILIARY TRACT, STOMACH, PANCREAS (6198)
CELL, PORPHYRIA, ALLYLISOPROPYLACETAMIDE, RAT (6059)*
CHOLESTEROL SYNTHESIS, CARBOCHOLINE, ADRENALINE, RAT (5595)
CHRONIC ENCEPHALOPATHY, LACTULOSE (6026)
CHRONIC HEPATITIS, BETA-LA-GLOBULIN-(C'3), RHEUMATIC DISEASE, SCLERODERMA, DERMATOMYOSITIS (6105)
CHRONIC HEPATITIS, CIRRHOSIS, HEMODYNAMIC PARAMETERS (6108)
CHRONIC HEPATITIS, CIRRHOSIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
CHRONIC HEPATITIS, IMMUNOLOGY, GAMMA GLOBULIN (6107)
CIRCULATION, ISCHEMIA, CROSS TRANSFUSION, PORTAL VEIN OCCLUSION, HEPATIC ARTERY OCCLUSION, SMALL INTESTINE ISCHEMIA (5988)*
CIRRHOSIS, ACUTE VIRAL HEPATITIS, CARCINOMA, AFRICA (6027)
CIRRHOSIS, ALCOHOL DEHYDROGENASE, ZINC, COPPER, MANGANESE, SELENIUM, CADMIUM, WILSON'S DISEASE (6002)
CIRRHOSIS, ASCITES, EDEMA, COMPARTMENTALIZATION (6123)
CIRRHOSIS, BLOOD VOLUME, PORTAL PRESSURE, VENOUS PRESSURE (5632)*
CIRRHOSIS, HEPATITIS, ALBUMIN, GASTROENTERIC CLEARANCE (6112)*
CIRRHOSIS, PARENCHYMA CELLS, INTRANODULAR STRUCTURES, HISTOMETRICAL ANALYSIS (6116)*
CIRRHOSIS, PORTACAVAL SHUNT, ESOPHAGUS, BLEEDING VARICES (6113)*
CIRRHOSIS, PORTAL HYPERTENSION, PORTOSYSTEMIC SHUNT (6128)
CHOLESTEROL SYNTHESIS, SITES, MOUSE (5579)*
COLLAGENOLYTIC ACTIVITY, RAT (5597)
CYTIDINE TRIPHOSPHATE SYNTHETASE, PURIFICATION, PROPERTIES (5464)
CYTOCHROME P-450, DRUGS, TESTOSTERONE, FATTY ACIDS (5566)*
CYTOLYSIS SYNDROME, CIRRHOSIS, CHILDREN, CHRONIC HEPATITIS (6001)
DERMOID CYST, RADIOGRAPHY (6030)
DETOXICATION, IRRADIATION, GLUCURONI ACID, RABBIT, GLUCURONIDE CLEARANC N-ACETYL-PARAAMINOPHENOL (6053)
DIFFERENTIAL DIAGNOSIS, LIVER SCAN, PERITONEOSCOPY, SPACE-OCCUPYING LESION, HEPATIC TUMOR (5659)*
DISEASE, ACUTE, CHRONIC, AUSTRALIA ANTIGEN, CIRRHOSIS, HEPATITIS (605
DISEASE, ACUTE VIRAL HEPATITIS, SERU GUANASE, SGPT, DIAGNOSIS (5686)
DISEASE, ARGININE, MALIC ACID, ACUTE VIRAL HEPATITIS, CIRRHOSIS (6044)
DISEASE, CHRONIC, ACUTE VIRAL HEPATITIS (6098)
DISEASE, CHRONIC, AUSTRALIA ANTIGEN, DRUG ADDICTS, DENMARK (6101)
DISEASE, CHRONIC, MALABSORPTION SYNDROME, ALBUMIN METABOLISM, ACUTE HEPATITIS (6199)
DISEASE, NUTRITION, NEONATE, CHILDRE (5996)
DISEASE, THERAPY DRUG COMBINATION (5984)*
DISEASE, TYPE III GLYCOGENOSIS, ULTR STRUCTURE, GLYCOGEN DEPOSITS, SKEL TAL MUSCLE (5986)*
DRUG METABOLISM, IN VITRO, ZINC DEFICIENCY (5583)*
DRUG METABOLISM, MICROSOMAL ENZYMES, DMSO EFFECT (5581)*
DRUG METABOLISM, PHENOBARBITOL, MALARIA (6270)
ECHINOCOCCOSIS, DIAGNOSIS, CALCIFICATION (6271)
EDTA-MED, PANCREAS, BLOOD SUGAR, BIO METALS (5641)
EMBRYO, TYROSINE AMINOTRANSFERASE, ALPHA-KETO ACID (5800)
ENCEPHALOPATHY, AMMONIA (6029)
ENCEPHALOPATHY, PORTOCAVAL SHUNT, PROPHYLAXIS, ALCOHOLISM (6233)
ENZYME, ALCOHOL, METABOLISM (5444)
ENZYME, CRYSTALLIZATION, PROPERTIES, HUMAN (5451)
ENZYME, GLUCOAMYLASE, MORPHOLOGY, MONKEY (5410)*
ENZYME, GLYCOPROTEIN, N-ACETYLGLUCOS MINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)*
ENZYME, HYPERTENSION, CIRRHOSIS (612
ENZYME INACTIVATION, SULFUR, RAT (5585)*
ENZYME, RAT, MITOCHONDRIA, E.COLI, AEROBIC OXIDATION (5452)
ENZYME, TOXICITY, CARBON TETRACHLORIDE, COUMARIN, 4-METHYLCOUMARIN, DRUG (5425)*
ENZYME, FATTY ACID SYNTHESIS, PIGEON (5442)*
ENZYME REGULATION, GLYCOLYSIS, CARCI OGENIC COMPOUNDS, RAT (6079)
ENZYME, DRUG EFFECTS, RAT (5564)*
ENZYME ACTIVITY, DNA POLYMERASE, HEP TOMA, RIBOSOMES (5429)*
ENZYME ACTIVITY, NADPH CYTOCHROME C REDUCTASE, HUMAN, RAT (5418)*
ENZYMATIC ACTIVITY, THREONINE-DEVOID

DIET, RAT (5990)•
ENZYME ACTIVITY, TRYPTOPHAN, OXYGENASE, FLAVIN, RAT (5596)
ENZYME ACTIVITY, UDP GLUCURONYLTRANSFERASE, ULTRASOUND (5415)•
ESTERASE, ISOZYME, MOUSE (5447)
ETHANOL OXIDATION, MICROSOMES, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)•
ETHANOL, RNA, URIDINE, ADRENALECTOMY, RAT (5574)•
ETHANOL, TRIGLYCERIDE (6071)
FAILURE, SURGICAL TREATMENT (6023)
FATTY ACID, PERFUSION, NADH, NADPH, MITOCHONDRIA, MICROSOME, RAT (5575)•
FATTY ACID SYNTHESIS, ENZYME ACTIVITY, ACETYLTRANSACYLASE, MALONYLTRANSACYLASE, FATTY ACID SYNTHETASE (5441)•
FATTY ACID SYNTHESIS, FATTY ACID SYNTHETASE, BINDING SITES (5423)•
FATTY ACID SYNTHETASE, BINDING SITES, PIGEON (5460)
FATTY LIVER, LIPID METABOLISM, ETHIONINE, HEPATIC ENZYMES, CYTOCHROMES (6056)•
ETAL, STEROID, FETAL ADRENAL (5448)
ETUS, TRANSSULFURATION, CYSTATHIONINE, CYSTATHIONASE, ENZYME ACTIVITY, METHIONINE, CYSTINE (5420)•
UNCTION, ACUTE CHOLECYSTOPANCREATITIS (5973)
UNCTION, DISEASE, ACETYLATION RATE, SULFATHIAZOLE, ENZYME (6043)
UNCTION, THYROID, BILE, HEPATIC BLOOD FLOW (6040)
LUCOKINASE, GLYCOLYSIS REGULATION, SYNTHESIS, ATP INHIBITION, AMP, RAT (5428)•
LUCOKINASE, HYDROCORTISONE, ACETATE, GLUCOSE, ESTRADIOL (5578)•
LUCONEOGENESIS, INHIBITION, 4-PENTENOIC ACID, MECHANISM, RAT (5557)•
LYCOLIPID, CHOLESTEROL, GLYCERIDES, CONTENT, STORAGE DISEASES (5411)•
LYCOLYSIS, GLUCONEOGENESIS, CARBOHYDRATE-FREE DIET (5598)
LYCOPROTEIN, CHRONIC HEPATITIS, ENDOSCOPY, BIOPSY, DIABETICS, PROTEIN-BOUND POLYSACCHARIDES (5647)•
RAFT, HEPATITIS, ENZYMES, HISTOLOGICAL CHANGES, GLUCURONIDASE, PROTEIN METABOLISM, CELLULAR RESPIRATION, HUMAN, BABOON (6069)
ALOTHANE, METHOXYFLURANE, DOG (5603)
EMOCHROMATOSIS, MALABSORPTION, IRON, PHLEBOTOMY THERAPY (5982)•
EMANGIOMA, RADIATION THERAPY (6017)
EMATOCHROMATOSIS, IRON DEPOTS, HEMOSIDERIN, ENDOCRINE FACTORS, DIABETES (6045)
EPATECTOMY, SEGMENT VARIATION, RADIOLOGY (5473)
EPATIC ARTERY, COLLATERAL CIRCULATION, ANGIOGRAPHY, HEPATIC TUMOR (5981)•
EPATIC ARTERY, PORTAL VEIN, BLOOD FLOW (5630)•
EPATIC COMA, DELIRIUM TREMENS, EXTRACORPOREAL PERFUSION, CORTICOSTEROID, COFACTOR (6008)
EPATITIS, VITAMIN-B12-FOLIC ACID, BILIRUBIN, TRANSAMINASES, ELECTROPHORESIS (6078)
HEPATOCELLULAR FAILURE, DIAGNOSIS, CLINICAL FEATURES (6022)
HEPATOCYTE WALL, CCl4 DAMAGE, TAURINE N-CARBODITHIOATE (6080)
HEPATOMA, HIPPURIC ACID SYNTHESIS, AZO-DYE FEEDING, RAT (6004)
HEPATOMA, RIBOFLAVIN, RAT (6072)
HEPATOMEGALY, REYE'S SYNDROME, PERITONEAL DIALYSIS (6018)
HEPATORENAL SYNDROME, KIDNEY TRANSPLANT (6035)
HEPATOSPLENIC SCHISTOSOMIASIS, NICARBAZIN, MOUSE (6269)
HEPATOSPLENOMEGALY, MUCOPOLYSACCHARIDOSIS, HURLER'S DISEASE, HUNTER'S DISEASE, BUHOT CELLS, CORNEAL OPACITY, ELECTRON MICROSCOPY (5676)
HISTOCHEMISTRY, ENZYME ACTIVITY, MITOCHONDRIA, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)•
HISTOCHEMISTRY, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)•
HISTOCHEMISTRY, MITOCHONDRIA, MEMBRANE, MONOAMINE OXIDASE, ENZYME MARKER (5440)•
HOMOGENATE, OXIDATION, GLUTATHIONE, RAT (5586)•
HYDROXYLAMINE DERIVATIVE EFFECT, CHOLESTEROL, RAT (5565)•
INJURY, CARDIOPATHOGENIC DIET, ATP-SPOFA, HISTOLOGY (5993)•
INOSITOL COMPOUNDS, RAT (5430)•
INSUFFICIENCY, BILIARY HYPERTENSION, CIRRHOSIS, TUMOR, TREATMENT (6011)
INSUFFICIENCY, ENCEPHALOPATHY (6024)
ISOENZYME CLINICAL SIGNIFICANCE (6166)
ISOZYME, PROTEIN, RAT, GUANINE DEAMINASE (5453)
JAUNDICE, HEPATITIS, DIAGNOSIS, INFANTS, ONE-STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN (5661)•
LACTATE DEHYDROGENASE, ISOENZYME CARANOGEN, COPPER, MORPHOLOGY (5994)•
LEISHMANIASIS, KALA-AZAR, VISCERAL, IMMUNOFLUORESCENCE (5675)
LESION, CARCINOGEN, SEX, AGE, RAT (6057)•
LIPIDS, PEROXIDATION, STEATOSIS, CCl4 (5991)•
LUPOID HEPATITIS, JAUNDICE (6109)
MAC DONALD DIET, CHOLINE, IRON, STEATOSIS, GROWTH, LIPIDS (5608)
METABOLISM, AROMATIC HYDROCARBONS, ANTHRACENE, DIHYDRODIOL, CARCINOGEN, RATS (5571)•
METABOLISM, ENZYME, CHICK (6228)
METABOLISM, ETHANOL, GLUCONEOGENESIS (6075)
METABOLISM, FATTY ACID SYNTHETASE, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
METABOLISM, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)•
METABOLISM, INDOSPICINE, AMINO ACID, PROTEIN, NUCLEIC ACID (5568)•
METABOLISM, INSTANT DIABETES, MANNOHEPTULOSE, HYPERGLYCEMIA (5609)
METABOLISM, IN VITRO, ENATIOMERS, AMPHETAMINE, BENZPHETAMINE (5577)•

METABOLISM, LYSOLEATHIN, DUODENUM (5621)•
METABOLISM, STARVATION, CARBOHYDRATE (5635)
METABOLISM, OROTIC ACID SYNTHESIS, BARBITURATES (5593)
METABOLISM, OXIDATION, GLUTATHIONE, THIOL (5576)•
METASTASES, METABOLISM, 5-FLUOROURACIL PANCREATIC CARCINOMA (6014)
MICROSOME, ENZYME, BARBITURATE, RAT (5601)
MICROSOME, ETHANOL, ENZYME, UDPGT ACTIVITY (5604)
MICROSOME, ETHANOL-OXIDATION, HUMAN, RAT (5590)•
MICROSOME, PH, SODIUM BINDING, MAGNESIUM BINDING, EDTA, ATP (5449)
MICROSOME, METABOLISM, DIPHENYLHYDANTOIN, DRUG EFFECTS, INHIBITION, BIOTRANSFORMATION (5607)
MICROSOME, SEDIMENTATION SUCROSE, PROTEIN SYNTHESIS (5409)•
MITOCHONDRIA, CORTISONE (5431)•
MITOCHONDRIA, 2, 4-DINITROPHENOL-ACTIVATED ADENOSINE TRIPHOSPHATASE, DEXTRAN SULFATE (5573)•
MITOCHONDRIA, K+-H+ EXCHANGE, MAO ACTIVITY, MITOCHONDRIAL MEMBRANE, RAT (5428)•
MITOCHONDRIA, MEMBRANES, SURFACE CHARGE, FREE-FLOW ELECTROPHORESIS (5426)•
MITOCHONDRIA, PHOSPHOENOLPYRUVATE, METABOLISM (5572)•
MITOCHONDRIA, ULTRASTRUCTURE, DENSITY, GRADIENT CENTRIFUGATION, EMBRYONIC, STARVATION (5434)•
MONOCROTALINE, ULTRASTRUCTURE, CHICKEN (6058)•
NECROSIS, HALOTHANE ANESTHESIA (6074)
NODULAR TRANSFORMATION, PORTAL HYPERTENSION (5998)
NUCLEAR RNA, STERIGMATOCYSTIN, MITOSIS, CELL DAMAGE, OROTIC ACID INCORPORATION, SCINTILLATION COUNTS (5457)
OBSTRUCTIVE JAUNDICE, SURGERY, MORTALITY (6145)
PARENCHYMA, ELECTRON MICROSCOPY, SPLENOMEGALY, MITOCHONDRIA, CELL COMPONENTS (6054)•
PARTICULATE FRACTION, MONOGLYCEROPHOSPHATE, RAT (5588)•
PERFUSION, BILIARY EXCRETION, CURARE COMPOUNDS, LIPID SOLUBILITY, RAT (5485)•
PEROXISOME, CATALASE (5610)
PEROXISOME, CYTOLOGY, FUNCTION ENZYMES (5446)
PHOSPHOFRUCTOKINASE, RABBIT (5438)•
POISON, ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITAL, GASTROINTESTINAL TRACT (5639)
PORPHYRIA, FECES, URINE, PORPHYRIN (6025)
PORPHYRIN METABOLISM, BARBITURATES, PORPHYRIA, HEPATIC ENZYMES (5563)•
POST-HEPATITIS CIRRHOSIS, TRANSAMINASES, PERILOBULAR FIBROSIS, MACRONODULAR LIVER (6119)
PRIMARY CANCER, AGE, SEX (6048)
PRIMARY CARCINOMA, RESECTION (6031)
PROTEIN, CHOLECYSTITIS, ELECTROPHORESIS (6154)
PROTHROMBIN, FIBRINOLYSIS, CANCER, CIRRHOSIS (5646)•
RAT, SUBCELLULAR CONSTITUENT, GOLGI COMPLEX UBIQUINONE, QUANTITATION (5432)•
REGENERATION, DEOXYRIBONUCLEOPROTEIN, RNA SYNTHESIS (5592)
REGENERATION, RESECTION, METABOLISM (5594)
RENAL INSUFFICIENCY, CHOLANGITIS (6042)
RESECTION, FIBROUS CAPSULE, OCTO-N-FORM SUTURE (6038)
RESECTION, TECHNIQUE (6036)
RNA TURNOVER, PROTEIN-DEFICIENCY, RAT (5561)•
RUPTURE, NEONATE (6037)
SCAN, RADIOALBUMIN, METASTASES (5673)
SCANNING, 99M TC, 113M IN SPLEEN, PEDIATRIC PATHOLOGY (5719)
SCANNING, 113M INDIUM, DIAGNOSIS (5685)
SCANNING, RESUSCITATION, RADIOISOTOPE (5724)
SCINTIGRAPHY, HEPATOMEGALY, ALCOHOLIC STEATOSIS, EXTRAHEPATIC TUMOR, PRIMARY CANCER (5661)
SCLERODERMA, BILE DUCT (6010)
SINUSOIDS, MICROCIRCULATION, ARTERIAL PRESSURE, FLOW ARREST, VENOUS PRESSURE (5629)•
SINUSOIDS, ULTRASTRUCTURE (5471)
SPLEEN, ENDOTOXIN, LOCALIZATION SALMONELLA ENTERITIDIS (5983)•
STEROID, RAT (5412)•
SURGERY, NUTRIENT DEMANDS (6047)
TISSUE, HEPATOCYTES, CORTISOL, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS (5461)
TOXICITY, ACUTE VIRAL HEPATITIS (603
TRANSFER RNA, PROTEIN SYNTHESIS, AMINO-ACID INCORPORATION, SYNTHESI INHIBITORS, RAT (5600)
TRANSPLANT, BILIRUBINEMIA, HETEROTOP GRAFT, HUMAN, BABOON (6007)
TRANSPLANTATION, HUMAN DONOR, SURGIC PROTOCOL (5985)•
TRANSPLANTATION, SPLENOPORTAL ANASTO OSIS, LIVER HYPERTROPHY, SURGICAL TECHNIQUE, PIG (6012)
TRAUMA, ACUTE NON-VIRAL HEPATITIS (6083)
TRAUMA, CLOSED, SURGERY (6049)
TRAUMA, HEPARIN, SURGERY (6073)
TRAUMA, HEPATECTOMY, DRAINAGE, EXPLO ATION LAPAROTOMY, RADIOLOGICAL EXAMINATION, SURGICAL PROCEDURE (6052)
TRAUMA, NON-VIRAL HEPATITIS (6188)
TRAUMA, PENTOBARBITOL, CATABOLISM (6081)
TRIGLYCERIDE OUTPUT, FATTY ACIDS, RA (5584)•
TRYPTOPHAN PYRROLASE, NICOTINE, (546
TUMOR, RESECTION, RIGHT LOBE (6009)
TUMOR, SCINTILLATION CAMERA, DIAGNOS (5670)

TYROSINE AMINOTRANSFERASE, RAT FETUS, NUCLEOTIDE (5562)•
ULTRASTRUCTURE, METAMORPHOSIS, THYROXINE, TADPOLE (5465)
VITAMIN K CONTENT, PHYLLOQUINONE, HORSE LIVER, SALICIC ACID, SPECTROSCOPY (5437)•
WEIGHT, BLOOD FLOW, RADIOGOLD, RADIOXENON (5638)
WILSON'S DISEASE, LENTICULAR DEGENERATION, COPPER METABOLISM (6019)
WILSON'S DISEASE, X-RAY APPARATUS, FLUORESCENCE, COPPER DISTRIBUTION (5677)

MPHATIC
CHYLOUS ASCITES, INGUINAL HERNIA, INFANT (6207)
CHYLOUS ASCITES, SMALL INTESTINE, TRIGLYCERIDE, FATTY ACID (6218)
COLON, MUCOSA, DISTRIBUTION (5435)•
LIVER, SURGERY, TRANSPLANT, DOG (6006)
NODE, INTRAABDOMINAL, LIPOFUSCINOSIS (6203)
TUMOR, STOMACH UPSET, RADIOLOGICAL TREATMENT (5786)

ABSORPTION
CARBOHYDRATE, RESPIRATORY, HYDROGEN EXCRETION (5648)•
GIARDIASIS, CHILDREN, SYMPTOMS (6263)
INTESTINAL TUBERCULOSIS, VILLOUS ATROPHY (5891)
IRON, HEMOCHROMATOSIS, PHLEBOTOMY THERAPY (5982)•
LACTOSE, CROHN'S DISEASE, SYMPTOMS (5886)•
LACTOSE INTOLERANCE, ADULT, JEJUNAL MUCOSA (5896)
LACTOSE, MILK TREATMENT, ZYMIL (5897)
LOW LACTOSE, MILK, ZYMIL (6202)
NEONATAL GASTROENTERITIS, NURSLING GASTROENTERITIS, LOW LACTOSE MILK, REALIMENTATION (6160)
RIBOFLAVIN THERAPY, BURNING FEED SYNDROME (5899)
SMALL INTESTINE, FECES, BACTERIA (6184)
SMALL INTESTINE, GIARDIASIS (6280)
SMALL INTESTINE, PEPTIC ULCER (5888)
SPRUE, SMALL INTESTINAL MORPHOLOGY, JEJUNUM, HAITI (5890)
TRIGLYCERIDES, MEDIUM CHAIN, LIPID (5895)
TROPICAL SPRUE, DEFINITION, DIARRHEA (5894)
TROPICAL SPRUE, NIGERIA (5889)
VITAMIN D DEFICIENCY, BONE, HISTOLOGY (5892)
WHIPPLE'S DISEASE, INTESTINAL PATHOLOGY, CORYNEBACTERIA, LYMPHANGIECTASIA, FROTHY HISTIOCYTES, PLASMODIA, ELECTRON MICROSCOPY (5887)•

NUTRITION
MUSCLE, ADIPOSE, INFANT (6227)

ASMUS
FAT BALANCE, ABSORPTION, JEJUNUM, CHILDREN (6224)
NUTRITIONAL, ETIOLOGY, TREATMENT (6179)

ENTERY
APT, DIAGNOSIS, SURGERY (6209)

BLOOD FLOW, DRUG ABSORPTION, INTESTINE (5501)
CYST, TREATMENT, ENUCLEATION (6177)
ISCHEMIC DISEASE, OCCLUSION, COLITIS (6232)
MESENTERIC PLEXUS, DISORDERS (6171)

METABOLISM
ALBUMIN, CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
ALCOHOL, ACETALDEHYDE, ACETONE, LIVER SLICES (6061)•
AMMONIA, GASTROINTESTINAL TRACT, TRANSPORT (5634)
CARBOHYDRATE, GLYCEROL, GLYCERIDE (5935)
CARBOHYDRATE, HEPATIC ENZYMES, GLYCOGENESIS, GLYCOGENOLYSIS, PARTIAL HEPATECTOMY, ALCOHOL, RAT (5999)
CARBOHYDRATE, LIPID, OXOTREMORINE, CARBACHOL, METHACHOLINE, GLUCOSE, LACTIC ACID, ARTERIAL BLOOD (5628)•
CARNITINE, PALMITIC ACID, ESTER, LIVER, MITOCHONDRIA, RAT (5582)•
CATABOLISM, PENTOBARBITOL, LIVER TRAUMA (6081)
CHOLESTEROL, ABSORPTION (5682)
CHOLESTEROL, BILE ACID (5636)
CHOLESTEROL, LIVER, CARBOCHOLINE, ADRENALINE, RAT (5595)
DMSO, HEPATIC METABOLIZING ENZYMES, MICROSOMAL ENZYMES (5581)•
DRUG, HEPATIC ENZYMES, HEPATIC LIPID, FATTY LIVER, ETHIONINE, CYTOCHROMES (6056)•
DRUG, LIVER, IN VITRO, ZINC DEFICIENCY (5583)•
DRUG, LIVER, PHENOBARBITOL, MALARIA (6270)
ELECTROLYTE, STOMACH, SURGERY (5807)
ENZYME, LIVER, CHICK (6228)
ESTRADIOL, BILIARY OBSTRUCTION, STEROID (6130)
FAT, CHOLINE, METHIONINE, DIET (5558)•
GLUCONEOGENESIS, ALCOHOLIC INTOXICATION, LIPID METABOLISM, KREBS CYCLE, PROTEIN METABOLISM, RAT (6082)
GLUCONEOGENESIS, LIVER, METABOLISM, ETHANOL (6075)
GLYCOLYSIS, ENZYME REGULATION, LIVER, CARCINOGENIC COMPOUNDS, RAT (6079)
GLYCOLYSIS, HEPATIC, CARBOHYDRATE-FREE DIET, GLUCONEOGENESIS (5598)
GLYCOLYSIS REGULATION, LIVER, MICROSOMAL GLUCOKINASE, ATP INHIBITION, AMP, SYNTHESIS, RAT (5428)•
HARTNUP DISEASE, INTESTINAL ABSORPTION, AMINO ACID, CARNOSINE (5475)•
HEMOCHROMATOSIS, LIVER, ETIOLOGY, ANATOMO-PATHOLOGY, IRON DEPOTS, HEMOSIDERIN, PANCREAS, HEPATOMEGALY, DIABETES, MELAMODERMATOSIS, ENDOCRINES (6045)
HEPATIC, PORPHYRIA, PORPHYRIN, FECES, URINE (6025)
HUNTER'S DISEASE, MUCOPOLYSACCHARIDES, GLYCURONIC ACID, BUHOT CELLS, ELECTRON MICROSCOPY, ADLER GRANULATION (6051)
INHIBITORS, SODIUM FLUORACETATE, SODIUM NITRIDE, ADRENALINE, ISOPRENALINE, PHENYLEPHRINE, RAT INTESTINE (5527)

- IRON, HEMOCHROMATOSIS, LIVER, CIRRHOSIS (6000)
- JEJUNUM, FOLATE METABOLIZING ENZYMES, DIET, FOLATE (5611)*
- LIPID, LIVER, FATTY ACID SYNTHETASE, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
- LIVER, AROMATIC HYDROCARBONS, ANTHRACENE, DIHYRODIOL, CARCINOGEN RATS (5571)*
- LIVER, ENZYME, ALCOHOL (5444)
- LIVER, SN-GLYCEROL-3-PHOSPHATE, MONOACYLGLYCEROPHOSPHATE, PARTICULATE FRACTION, RAT (5588)*
- LIVER, GLYCOLYSIS, BIOTIN DEFICIENCY, ENZYME CONTROL (5569)*
- LIVER, INSTANT DIABETES, MANNHEPTULOSE, HYPERGLYCEMIA (5609)
- LIVER, IN VITRO, ENATEONIERS, AMPHETAMINE, BENZPHETAMINE (5985)*
- LIVER, LIPID, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)*
- LIVER, OROTIC ACID SYNTHESIS, BARBITURATES (5593)
- LIVER, 4-PENTENOIC ACID, INHIBITION, GLUCONEOGENESIS, PERFUSION, RAT (5557)*
- LIVER, PROTEIN SYNTHESIS, INDOSPICINE, NUCLEIC ACID (5568)*
- LIVER, RESECTION, REGENERATION (5594)
- LIVER, STARVATION, CARBOHYDRATE (5635)
- LIVER METASTASES, 5-FLUOROURACIL, PANCREATIC CARCINOMA (6014)
- LYSOLECITHIN, DUODENUM, LIVER (5621)*
- MUCOPOLYSACCHARIDE, INBORN ERRORS, HURLER'S SYNDROME (6211)
- OXIDATION, GLUTATHIONE, THIOL LIVER (5576)*
- PHOSPHOENOLPYRUVATE, MITOCHONDRIA, LIVER (5573)*
- PHOSPHORYLATION, SUGARS, INTESTINAL MUCOSA, PHOSPHOENOLPYRUVATE (PEP) (5618)*
- PORPHYRIA, ALLYLISOPROPYLACETAMIDE, LIVER, MORPHOLOGY, RAT (6059)*
- PORPHYRIA, BARBITURATE EFFECT, HEPATIC ENZYMES (5563)*
- PORPHYRIA, BIOSYNTHESIS, EDEMA, GUNTHER'S DISEASE, HEREDITARY, HEPATIC, ABDOMINAL SYNDROME (6021)
- PROTEIN, PEPTIC ULCER, STEROID HORMONE (5849)
- SEROTONIN, CIRRHOSIS, ACUTE VIRAL HEPATITIS (6117)
- THIAMINE, GASTRIC CANCER (5812)
- WILSON'S DISEASE, CIRRHOSIS, COPPER (6002)
- WILSON'S DISEASE, LIVER, COPPER, CERULOPLASMIN, CIRRHOSIS, NEUROPATHY, LENTICULAR DEGENERATION (6019)
- WILSON'S DISEASE, X-RAY APPARATUS, LIVER, BRAIN, COPPER DISTRIBUTION (5677)

MILK
- BREAST, NEONATAL, JAUNDICE, STEROIDS (5997)
- LOW LACTOSE, ZYMIL, MALABSORPTION (6202)
- MARASMUS, ETIOLOGY, TREATMENT (6179)
- TREATMENT, LOW LACTOSE GASTROENTERITIS, REALIMENTATION (6160)

MITOCHONDRIA
- CYTOCHROME P-450, CHANGE, SPECIES, SEX, ANILINE, HEXOBARBITOL, RAT, MOUSE, RABBIT (5559)*

MITOSIS
- LIVER, ACUTE VIRAL HEPATITIS (6096)

MOTILITY
- CHOLEDOCHODUODENAL SPHINCTER, DUODENUM, DRUG EFFECTS, TERBUTALINE, ISOPRENALINE, HEART RATE (5513)*
- ELECTROMYOGRAPHY, STOMACH, SEROSA, GASTRIN PENTAPEPTIDE (5514)*
- ESOPHAGUS, SPASM, GASTRIC CARCINOMA (5790)
- GASTRIC, ELECTRIC RHYTHM (5524)
- GASTROINTESTINAL TRACT, INFERIOR VENA CAVA (5525)
- ISOLATED SEGMENTS, CONTRACTILITY, TON (5515)*
- MOTOR RESPONSE, STOMACH, SYMPATHETIC STIMULATION, TONUS, RELAXATION, ATROPINE (5518)*
- PERISTALSIS, ESOPHAGUS, MEASUREMENT, CLOSURE FORCE, INFUSED CATHETER (5507)*
- PERISTALSIS, ISOLATED, COLON, INTRALUMINAL STIMULUS (5506)*
- PERISTALSIS, MESENTERIC ARTERY OCCLUSION, DOG (6170)
- PERISTALSIS, SMALL BOWEL, ACCELERATION, CHOLECYSTOKININ, CONTRAST STUDY (5694)
- PORTAL VEIN, CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, THEOPHYLLINE, ADRENERGIC RECEPTOR (5627)*
- RECTUM, MEGACOLON, NEONATE, CHILDREN (5929)
- SMALL INTESTINE, ABSORPTION, HYPOTHERMIA, PERFUSION (5615)*
- SMALL INTESTINE, CHRONIC ENTERITIS (6194)
- SMALL INTESTINE, HORMONAL CONTROL, JEJUNAL CONTRACTIONS (5516)*
- SMALL INTESTINE, ILEUM, SMOOTH MUSCL CATECHOLAMINES, ADRENALINE, NORADRENALINE, ISOPRENALINE, ADRENOCEPT (5517)*
- SMALL INTESTINE, MYOELECTRIC ACTIVIT SECRETIN EFFECT, ACTION POTENTIAL (5519)*
- SMALL INTESTINE, SEROTONIN, COHERIN, BIEBLF LOOPS, DOG (5510)*
- SPASM, ESOPHAGUS, DILATATION, SPHINCTER (5761)
- SPASM, GASTROINTESTINAL TRACT, PSYCHOSOMATIC, ESOPHAGUS, CARDIA, PYLORUS, COLON (6204)
- STOMACH, DUODENUM, BILE FLOW (5526)
- STOMACH, REFLEX CONTROL, VAGAL EFFERENTS, PERIPHERAL STIMULATION, CENTRAL STIMULATION (5520)*
- STOMACH RELAXANT, PRESSURE (5767)
- STOMACH, SECRETION, NERVOUS CONTROL (5472)

MUSCLE
- MALNUTRITION, ADIPOSE, INFANT (6227
- SKELETAL, TYPE III GLYCOGENOSIS, LIVER PATHOLOGY, ULTRASTRUCTURE, GLYCOGEN (5986)*
- SMOOTH, COLON, CONTRACTION, RELAXATION, CATECHOLAMINE, ALPHA RECEP-

  TION, DRUG EFFECTS, GANGLION BLOCKING AGENTS (5508)*
  SMOOTH, CONTRACTION, BLOOD, GASTRIC ULCER, DUODENAL ULCER (5521)
  SMOOTH, SMALL INTESTINE, ILEUM, MOTILITY, CATECHOLAMINES, ADRENOCEPTOR (5517)*
VOUS SYSTEM
  ADRENERGIC RECEPTOR, PORTAL VEIN, MOTILITY, CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, THEOPHYLLINE (5627)*
  CHRONIC HEPATIC, ENCEPHALOPATHY, LACTULOSE (6026)
  CONTROL, COLON, PERISTALSIS, INNERVATION, DRUG EFFECTS, GANGLION BLOCKING AGENTS, INHIBITION (5508)*
  CONTROL, STOMACH, MOTILITY, SECRETION (5472)
  ENCEPHALOPATHY, HEPATIC INSUFFICIENCY (6024)
  ENCEPHALOPATHY, LIVER, PORTACAVAL SHUNT, ALCOHOLISM (6233)
  GASTRIC MOTILITY, VAGO-VAGAL REFLEX, INHIBITION (5520)*
  GASTROINTESTINAL NEUROFIBROMATOSIS, CHRONIC ANEMIA, HEMORRHAGE (6245)
  HEPATIC, ENCEPHALOPATHY, AMMONIA (6029)
  MYENTERIC PLEXUS, DISORDERS (6171)
  NERVE CELL, TRACT WALLS, DIGESTIVE TRACT ACTIVITY (5637)
  NEUROPATHY, WILSON'S DISEASE, COPPER, CIRRHOSIS, LIVER, LENTICULAR DEGENERATION (6019)
  RECEPTOR SITES, STOMACH, SMOOTH MUSCLE MOTILITY, ALPHA RECEPTORS, BETA RECEPTORS, SYMPATHETIC STIMULATION (5518)*
  SELECTIVE, VAGOTOMY, GASTRODUODENAL ULCER, BILLROTH I RESECTION (5846)
  SYMPATHETIC BLOCK, COMMON BILE DUCT, CHOLEDOCHODUODENAL PASSAGE (6149)
  VAGOTOMY, DRUG EFFECT, GASTRIC LESION, ASPIRIN, 2-DEOXYGLUCOSE (5763)*
  VAGOTOMY, DUODENAL ULCER, SURGERY (5778)
  VAGOTOMY, DUODENUM, ULCER, PYLOROPLASTY (5842)
  VAGOTOMY, GASTRIC ANALYSIS, STASIS, GASTRIC ULCER, HEMORRHAGE (5667)
  VAGOTOMY, HEMIGASTRECTOMY, PANCREAS (5954)
  VAGOTOMY, PANCREATIC ACTIVITY, SECREIN STIMULATION, FLOW RATE, BICARBONATES, AMYLASE (5825)*
  VAGOTOMY, STOMACH, RESECTION, CANCER, ULCER, POLYP (5805)
  VAGOTOMY, STRESS ULCER, HEMORRHAGE, PYLOROPLASTY (5835)
EIC ACID
  NUCLEAR RNA, SYNTHESIS, LIVER, STERIGMATOCYSTIN, OROTIC ACID (5457)
  RIBO-, LIVER, URIDINE, ETHANOL, PARENCHYMA, ADRENALECTOMY, RAT (5574)*
  RNA, DNA, HEPATOMA CELL, PHENETHYL, ALCOHOL, RAT (5989)*
  RNA, LIVER, PROTEIN SYNTHESIS, AMINOACID, INCORPORATION, SYNTHESIS INHIBITORS, RAT (5600)
  RNA TURNOVER, LIVER, PROTEIN-DEFICIENCY, RAT (5561)*
  RNA, SYNTHESIS, LIVER REGENERATION (5592)
  T-RNA, ARGININE, INDOSPICENE, PROTEIN, LIVER, METABOLISM (5568)*
NUCLEOSIDE
  ADENOSINE 3'5' MONOPHOSPHATE, AMINO ACID TRANSPORT, LIVER SLICE (5493)*
  CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, MOTILITY, PORTAL VEIN, ADRENERGIC RECEPTOR (5627)*
  URIDINE, RNA, LIVER, ETHANOL, PARENCHYMA, RAT (5574)*
NUCLEOTIDE
  ATP, LIVER, HEPATIC INJURY, CARDIOPATHOGENIC DIET, HISTOLOGY (5993)*
  ATP, PH, SODIUM BINDING, MAGNESIUM BINDING, CELLULAR MEMBRANE, EDTA, LIVER MICROSOME (5449)
  TYROSINE AMINOTRANSFERASE ACTIVITY (5562)*
NUTRITION
  CHRONIC CHOLESTASIS, BILIARY CIRRHOSIS (6047)
  LIVER DISEASE, NEONATE, CHILDREN (5996)
  MAL-, DISACCHARIDES, INTESTINE, LACTASE, SUCRASE, MALTASE, RAT (5622)
  PARASITISM, RURAL CHILDREN, ASCARIS LUMBRICOIDES, TRICHURIS TRICHIURA (6276)
OBESITY
  JEJUNOILEOSTOMY, GLUCOSE, INSULIN (5865)
  MORBID, JEJUNOILEAL SHUNT, VITAMIN A, VITAMIN C (5876)
OXYGEN
  HYPOXIA, RECTUM, MUCOSA, PROTON RADIATION, GAMMA RADIATION (5645)

PANCREAS
  ACUTE CHOLECYSTO-, PANCREATITIS, LIVER FUNCTION (5973)
  ACUTE PANCREATITIS, ALCOHOLISM (5966)
  ACUTE PANCREATITIS, CREATIVE PHOSPHOKINASE (5970)
  ACUTE PANCREATITIS, DIAGNOSIS (5713)
  ACUTE PANCREATITIS, DIAGNOSIS, MYOCARDIAL INFARCTION (5711)
  ACUTE PANCREATITIS, EXTRACORPOREAL CIRCULATION, DUODENAL ULCER (5967)
  ACUTE PANCREATITIS, HYPOTHERMIA (5974)
  ACUTE PANCREATITIS, SOLAR GANGLIA (5972)
  ACUTE PANCREATITIS, SURGERY, TREATMENT (5975)
  ANNULAR, ADULT, DUODENAL OBSTRUCTION, CONGENITAL ANOMALY (5956)
  CARCINOMA, LIVER METASTASES, FLUOROURACIL (6014)
  CARCINOMA, PANCREATODUODENECTOMY, SURGERY, BYPASS OPERATIONS (5953)
  CHOLECYSTOPANCREATITIS, ACUTE, PRIMARY RECURRENT (5878)
  CHOLERAIC DIARRHEA, SECRETIN, GASTRIN, TUMOR, BLOOD, EXTRACT, BIO-ASSAY (6156)*
  CHRONIC PANCREATITIS, LITHIASIS, DIET, RADIOLOGICAL EXAMINATION, GLUCOSE TOLERANCE, SURGERY (5962)
  CHRONIC PANCREATITIS, SURGERY, HEMIPANCREATECTOMY, PAIN (5979)
  DIABETES MELLITUS, MUCOVISCIDOSIS,

    CARBOHYDRATE METABOLISM (5959)
  DISEASE, PLEURAL EFFUSION, ENZYME, COMPLICATIONS, SURGERY (5957)
  DUCT, SECRETION, CASEIN HYDROLYSLATE, FISTULA (5555)
  EDTA-MED, LIVER, KIDNEYS, BLOOD SUGAR (5641)
  ENZYME SECRETION, ELECTROTHERAPY, CHRONIC GASTRIC DISEASE (6161)
  EXOCRINE, PAROTID GLAND, FOOD REDUCTION, RAT (5556)
  FISTULA, ACUTE VIRAL HEPATITIS (6094)
  FUNCTION, AMYLASE, GLYCO-AMYLASE TEST (5728)
  FUNCTION, CHOLELITHIASIS, SECRETION (6146)
  FUNCTION, CHRONIC HEPATITIS, CIRRHOSIS, PROSERINE TEST, DIASTATIC CURVE (6111)
  HEAD, CARCINOMA, OBSTRUCTION, GASTRECTOMY, PANCREATECTOMY, DUODENECTOMY (5955)
  HEMORRHAGIC PANCREATITIS, THORACIC DUCT, PROTEOLYTIC ENZYMES, LIVER, EDEMA, SECRETIN (5781)
  ISLET CELL, TUMOR, CHOLERA (6231)
  ISLET CELL, TUMOR, HYPOGLYCEMIC COMA, HEMIPLEGIA, EEG, CENTRAL PARALYSES, TOLBUTAMIDE TEST, ULCER, DIARRHEA (5952)
  JUICE, PANCREATITIS, SERUM PROTEIN, TRYPSIN (5977)
  LIPASE, CORTISONE, FAT, RATS (5961)*
  PANCREATIC-CHOLERA, PEPTIDE-SECRETION (5958)
  PANCREATIC PSEUDO-CYST, RUPTURE, RADIOLOGY (5965)
  PANCREATITIS, ANGIOGRAPHY, DIAGNOSIS (5729)
  PANCREATITIS, ENZYME ACTIVATION, SECRETION (5971)
  PANCREATITIS, FUNCTIONAL DIAGNOSIS, SECRETIN, AMYLASE, LIPASE, ACUTE ABDOMEN, DUODENAL JUICE, STOOLS (5666)
  PANCREATITIS, HEMORRHAGIC PSEUDOCYST (5976)
  PANCREATITIS, JEJUNAL INFARCTION, COMPLICATION (5968)
  PANCREATITIS, PATHOPHYSIOLOGY, PHARMACOTHERAPY (5964)
  PANCREATITIS, SPHINCTER OF ODDI (5969)
  PARATHYROID, SCANNING, STAINING AGENTS ANALOGS, DOG (5650)*
  REGENERATION, DEGENERATION, HISTONE, CHANGES (5553)*
  SCANNING, IMAGE SEPARATION, DATA PROCESSING, LIVER (5652)*
  SECRETION, EXOCRINE, ENZYME, GLUCAGON, GLUCOSE (5552)*
  SECRETION, PEPTIC ULCER, STOMACH, DUODENUM (5843)
  SPHINCTER PRESSURE, DOG, STOMACH DISTENTION (5522)
  SUBDIAPHRAGMATIC VAGOTOMY, ULCER, SECRETIN, SECRETION (5825)*
  VAGOTOMY, PARTIAL GASTRECTOMY (5954)
  ZOLLINGER-ELLISON SYNDROME, BROCRESINE, GASTRIC SECRETION (6214)

PARASITE
  ASCARID LUMBRICOIDES, TRICHURIS TRICHIURA, NUTRITION, RURAL CHILDRE (6276)
  ASCARIS SUUM, ANTIGEN, HOST COMPONENTS, IMMUNITY (6268)
  GALLBLADDER, CAT (6282)
  GASTROINTESTINAL TRACT, NEMATODE (6259)
  HELMINTH, HETERAKIS GALLINARUM (6260
  LAMBLIA INTESTINALIS, BLUE CYST, LUGOL'S SOLUTION, TROPHOZOITES (6254)
  NEMATODE, CARNIVORES, BURSAL RAYS, ARTHROSTOMA GUILHONI N. SP. (6278)
  NEMATODE, FISH STOMACH, PSEUDOPROLEPTUS LAMYI N. SP. (6251)
  PNEUMATOSIS INTESTINALIS, CYST, INTESTINE (6267)
  SALMONELLA, BILHARZIASIS, EPIDEMIOLOGY, SOUTH AFRICA (6277)
  TAENIA HYDATIGENA, IMMUNOLOGY, HOST RESPONSE, COLOSTRUM (6273)
  TAPEWORM, HOST RESPONSE, IMMUNOLOGY, EMBRYO, CYST (6279)
  TAPEWORM, IMMUNOLOGY, HOST RESPONSE, TAENIA HYDATIGENA, COLOSTRUM (6273

PARASITIC DISEASE
  ACUTE AMEBIC DYSENTERY, DIARRHEA, PARASITOLOGICAL EXAMINATION, INTESTINAL COMPLICATIONS, FEVER (6253)
  AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
  AMEBIASIS, ENTAMOEBA HISTOLYTICA, DYSENTERY, INTESTINE (6272)
  ASCARIASIS, TREATMENT, PIPERAZINE (6255)
  BILHARZIAN LIVER, HEPATIC LESIONS, THERAPEUTIC INDICATIONS (6252)
  ECHINOCOCCOSIS, LIVER, DIAGNOSIS, CALCIFICATION (6271)
  ECHINOCOCCOSIS, RHEOHEPATOGRAPHY, DIAGNOSIS, PARASITE (5703)
  GIARDIASIS, DIARRHEA, CHILDREN (6264
  GIARDIASIS, DIARRHEA, HALQUINOL (626
  GIARDIASIS, DIARRHEA, PAIN, SIGMOIDOSCOPY, ADULT (6262)
  GIARDIASIS, INTESTINALIS, METRONIDAZOLE, CYTOCHEMISTRY (6258)
  GIARDIASIS, METRONIDAZOLE THERAPY (6266)
  GIARDIASIS, SMALL INTESTINE, MALABSORPTION (6280)
  GIARDIASIS, SYMPTOMS, CHILDREN, MALABSORPTION (6263)
  INTESTINAL GIARDIASIS, METRONIDAZOLE CHILDREN (6257)
  LEISHMANIOSIS, IMMUNOFLUORESCENCE, VISCERAL, CUTANEOUS, HAMSTERS, KALA-AZAR, LIVER, SPLEEN (5675)
  MALARIA, ABSORPTION, INTESTINE, AMIN ACID (6275)
  MALARIA, LIVER METABOLISM, PHENOBARBITOL (6270)
  OPISTHORCHOSIS, PERITONITIS, BILIARY PERFORATION (6250)
  SCHISTOSOMIASIS, HEPATOSPLENIC, NICARBAZIN, MOUSE (6269)
  SCHISTOSOMIASIS, PARATHYROID FUNCTIC HEPATIC FIBROSIS (6281)

PERITONEUM
  PERITONITIS, ACUTE APPENDICITIS (59
  PERITONITIS, BILIARY PERFORATION, OPISTHORCHOSIS (6250)

  - RECONSTRUCTION, HOMOLOGOUS GRAFT, DURA (5643)
- EROXISOME
  - HALF-LIFE, PROTEIN COMPONENT, CATALASE (5610)
  - LIVER, CYTOLOGY, FUNCTION, ENZYMES (5446)
- ISON
  - ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITOL, LIVER, GASTROINTESTINAL TRACT (5639)
  - CARBON TETRACHLORIDE, LIVER, ENZYMES (5425)*
  - CARBON TETRACHLORIDE, LIVER DAMAGE, HEPATOCYTE WALL, TAURINE N-CARBODITHIOATE (6080)
  - MUSHROOM, ACUTE NON-VIRAL HEPATITIS, CARBOHYDRATE METABOLISM (6066)
  - NICOTINE, GASTRIC SECRETION, RAT (5542)
  - NICOTINE, TRYPTOPHAN PYRROLASE, LIVER (5466)
- TASSIUM
  - HEPATIC CANCER, ZINC, COPPER (5698)
- EGNANCY
  - CROHN'S DISEASE, STERILITY (5883)
  - RECTOSIGMOID CARCINOMA (5924)
- OTEIN
  - ABSORPTION, INTESTINE, GELATIN, MILK (5482)*
  - ALBUMIN, GASTROENTERIC CLEARANCE, CIRRHOSIS, HEPATITIS (6112)*
  - ANTIHEMOPHILIC GLOBULINS, GASTRIC RESECTION, HEMOPHILIA A, DUODENAL ULCER, TRANSFUSIONS (6162)
  - BETA-LA-GLOBULIN-(C'3), CHRONIC HEPATITIS, RHEUMATIC DISEASE, SCLERODERMA, KIDNEY DISEASE (6105)
  - BINDING, CHROMAFFIN SYSTEM, INTRINSIC FACTOR, ENTEROCHROMAFFIN CELLS, GASTRIC MUCOSA, POLYPEPTIDE HORMONES (5414)*
  - DEFICIENCY, INCIDENCE, DIET, INDIA (6215)
  - DEFICIENCY, LIVER, RNA TURNOVER, RAT (5561)*
  - FRACTIONATION, AMINO ACIDS, ABSORPTION (5483)*
  - GAMMA GLOBULIN, ACUTE VIRAL HEPATITIS, CIRRHOSIS, AMINO ACID (6013)
  - GAMMA GLOBULIN, CHRONIC HEPATITIS, LIVER (6107)
  - GLYCO-, CHRONIC HEPATITIS, LIVER, BLOOD, ENDOSCOPY, LIVER BIOPSY, DIABETICS, CIRRHOSIS, PROTEIN-BOUND POLYSACCHARIDES (5647)*
  - GLYCO-, GASTRIC MUCOSA, WHALE (5547)
  - GLYCO-, LIVER, ENZYME, N-ACETYLGLUCOSAMINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)*
  - HISTONE, CHANGES, REGENERATION, DEGENERATION, PANCREAS, RAT (5553)*
  - HYPOALBUMINEMIA, ASCITES, PORTAL HYPERTENSION, HEPATIC LYMPH (6217)
  - IMMUNOGLOBULIN, BOVINE SERUM, MILK, INCUBATION, PROTEASE ACTIVITY, STOOLS, GASTRIC JUICE, DUODENAL JUICE (5633)
  - IMMUNOGLOBULIN, CATABOLISM, CROHN'S DISEASE, PROTEIN LOSS, IRON DEXTRAN, STOOL EXCRETION (5872)*
  - IMMUNOGLOBULIN, CHRONIC HEPATITIS, CIRRHOSIS, IGA, IGM, IGG, DIAGNOSIS (6115)*
  - IMMUNOGLOBULIN, SERUM, CIRRHOSIS, IGG, IGA, IGM (5688)
  - LIP-, LYMPH, INTESTINE, ULTRASTRUCTURE TRANSPORT (5417)*
  - LIVER, ACUTE CHOLECYSTITIS, ELECTROPHORESIS (6154)
  - LIVER ISOZYME, RAT, GUANINE DEAMINASE (5453)
  - LIVER REGENERATION, RNA (5592)
  - METABOLISM, PEPTIC ULCER, STEROID HORMONE (5849)
  - SERUM, ALBUMIN, METABOLISM, CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
  - SERUM, PANCREATITIS, PANCREATIC JUICE, TRYPSIN (5977)
  - SYNTHESIS, LIVER, INDOSPICENE, METABOLISM (5568)*
  - SYNTHESIS, LIVER, RNA, AMINO-ACID INCORPORATION, SYNTHESIS INHIBITOR, RAT (5600)
  - TRIPEPTIDE, GLUTATHIONE, OXIDATION, HOMOGENATE, LIVER, RAT (5586)*
  - WATER-SOLUBLE, MECONIUM, ILEUS (5450)
- PSYCHOSOMATIC
  - GASTROINTESTINAL DISORDER, SPASM, DIARRHEA (6204)
- PYLORUS
  - OBSTRUCTION, FORMIC ACID (5794)
  - STENOSIS, CONGENITAL, SURGERY (5820)
  - STENOSIS, HYPERTROPHY, CONGENITAL, PYLOROMYOTOMY (5770)
  - STENOSIS, X-RAY, DIAGNOSIS, GASTRIC DYSKINESIA (5705)
- RADIATION
  - DAMAGE, TRIPARANOL, INTESTINE, DRUG ABSORPTION, RAT (5855)*
  - LIVER, RABBIT, DETOXICATION, GLUCURONIDE CLEARANCE, N-ACETYL-PARA-AMINOPHENOL (6053)
  - PROTON, GAMMA, HYPOXIA, MUCOSA, RECTUM (5645)
  - RADIOTHERAPY, CARCINOMA, RECTUM, MEGAVOLT THERAPY, LYMPHNODE METASTASES, RADIOACTIVE COBALT (5915)
  - THERAPY, CANCER, ESOPHAGUS, CARDIA, RESECTION (5756)
  - THERAPY, HEMANGIOMA, LIVER (6017)
- RECTUM
  - ANASTOMOSIS, CECAL FISTULA, SURGERY, TUMOR (5942)
  - ANUS, FISTULA, SURGERY (5731)
  - ANUS, HEMORRHOID, PATHOGENESIS, ANATOMY (5939)
  - ARGENTAFFIN CELL CARCINOMA, SURGERY (5912)
  - CANCER, RESECTION (5936)
  - CANCER, SURGERY, PERINEOABDOMINAL OPERATION (5917)
  - CARCINOMA, RADIOTHERAPY, MEGAVOLT THERAPY, RADIOACTIVE COBALT, LYMPHNODE METASTASES (5915)
  - COLLOID CARCINOMA, ANUS, MUCUS (5907)
  - ENDOMETRIOSIS, COLON (5910)
  - HEMORRHOID, DIAGNOSIS, TREATMENT (5923)
  - LAMINA PROPRIA, MACROPHAGE, ULTRASTRUCTURE (5925)

  - MOTILITY, MEGACOLON, NEONATE, CHILDREN (5929)
  - MUCOSA, HYPOXIA, PROTON RADIATION, GAMMA RADIATION (5645)
  - MUCOSA, MICROSCOPY, SMALL INTESTINE (5679)
  - MUCOSA, ULCERATIVE PROCTITIS, SIGMOIDOSCOPY (5948)
  - MYOTOMY, SPHINCTEROTOMY, HIRSCHSPRUNG DISEASE (5933)
  - PROLAPSE, SURGERY, ETIOLOGY (5920)
  - SIGMOID CARCINOMA, PREGNANCY (5924)
  - ULCERATIVE RECTOCOLITIS, TUMOR (5944)
  - UNDIAGNOSED CANCER, COLON, RACE DIFFERENCES (5921)
  - VILLOUS ADENOMA, COLON (5940)

- REGENERATION
  - DEGENERATION, PANCREAS, HISTONE CHANGE (5553)*
  - LIVER, METABOLISM, RESECTION (5594)
- RESECTION
  - APPENDECTOMY, CANCER RISK (5927)
  - APPENDECTOMY, APPENDICITIS, GERIATRICS (5928)
  - BILLROTH I, GASTRODUODENAL ULCER, VAGOTOMY (5846)
  - CARDIA, ESOPHAGUS, CANCER, RADIOTHERAPY (5756)
  - CHOLECYSTECTOMY, LITHIASIS, SUTURE, SURGERY (6137)
  - CHOLECYSTECTOMY, GALLBLADDER, CHOLANGIOGRAPHY, CHOLECYSTITIS (6135)
  - CHOLEDOCHODUODENOSTOMY, COMMON BILE DUCT TRANSECTION, BLUNT TRAUMA (6133)
  - CHOLEDOCHODUODENOSTOMY, DUODENUM, GALLBLADDER, BILIARY TRACT (6143)
  - CHOLEDOCHOLITHOTOMY, HEPATIC DUCT, CALCULI, CHOLANGIOGRAPHY (6032)
  - CHRONIC PANCREATITIS, HEMIPANCREATECTOMY, SPLANCHNICECTOMY, PAIN, JAUNDICE, DIABETES (5979)
  - COLON, BACTERIA, ILEOSTOMY (5931)
  - COLON, CANCER, SURVIVAL (5909)
  - COLON, COLORECTAL CANCER (5932)
  - COLON, DIVERTICULA, CECUM, SIGMOID, BLEEDING (5914)
  - COLON, GARDNER'S SYNDROME (5934)
  - COLON, VARICES, SIGMOIDOSCOPY (5913)
  - COLOSTOMY, ILEOSTOMY, DIARRHEA, CONSTIPATION, DIET, SKIN PROTECTION, PSYCHOLOGICAL PREPARATION (5903)
  - DIVERTICULITIS, PERFORATION, PERITONITIS, DRAINAGE, COLOSTOMY, TUMORS, HEMORRHAGE (5916)
  - DUODENAL ULCER, SURGERY, VAGOTOMY (5778)
  - DUODENUM, PAPILLA, CANCER (5814)
  - ESOPHAGEAL TUMORS, BENIGN, LIOMYOMA, EPITHELIAL, MESODERMAL (5754)
  - ESOPHAGUS, CICATRICAL OBSTRUCTION, CHILDREN, RETROSTERNAL PLASTY (5755)
  - ESOPHAGUS, LEIOMYOMA (5750)
  - GALLBLADDER, DRAINAGE, CHOLEDOCHUS, CYSTIC DUCT (6140)
  - GASTRECTOMY, MULTIPLE POLYPS, DIARRHEA (5818)
  - GASTRIC CANCER, GASTRECTOMY (5816)
  - GASTRIC, COLON, TUMOR, SORBITOL DEHYDROGENASE, TRANSAMINASES, LIVER DISEASE (6223)
  - GASTRIC, PEPTIC ULCER, RELAPAROTOMY, HYPOCHRONIC ANEMIA, HEMORRHAGIC ULCER, WEIGHT CONTROL (5783)
  - GASTROESOPHAGEAL REFLUX, ESOPHAGUS, STOMACH (5733)*
  - HEPATECTOMY, HEPATIC TRAUMA, DRAINAGE RADIOLOGY, GLISSON'S CAPSULE (6052)
  - HEPATECTOMY, LIVER SEGMENT VARIATION, RADIOLOGY (5473)
  - HYSTERECTOMY, LYMPHADENECTOMY, INTER AL ILIAC ARTERY (6225)
  - LIVER, CALCIFIED HEMANGIOMA, RADIOLO (6015)
  - LIVER, FIBROUS CAPSULE, OCTO-N-FORM SUTURE (6038), (6190)
  - LIVER, PRIMARY CARCINOMA (6031)
  - LIVER, REGENERATION, METABOLISM (559
  - LIVER, TECHNIQUE (6036)
  - LIVER, TUMOR, RIGHT LIBE (6009)
  - LUNG, ESOPHAGEAL DISORDER, MANOMETRY (5752)
  - PAPILLECTOMY, CHOLANGIOGRAPHY, CATHE TER, DUODENUM, RETROGRADE FILLING, BILE DUCT (5676)
  - PARTIAL GASTRECTOMY, DUMPING SYNDROM CALCIUM DEFICIENCY (5779)
  - PARTIAL GASTRECTOMY, SERUM ALKALINE PHOSPHATASE (5789)
  - PARTIAL GASTRECTOMY, VAGOTOMY, PANCREAS (5954)
  - PEPTIC ULCER, INDICATIONS, STOMACH (5843)
  - PLASTIC, STOMACH, GASTRECTOMY (5809)
  - POSTVAGOTOMY STOMA, BETHANECHOL, GASTRIC RETENTION (5792)
  - PYLOROPLASTY, DUODENUM, ULCER, VAGOTOMY (5842)
  - PYLOROPLASTY, STRESS ULCER, HEMORRHA VAGOTOMY (5835)
  - RECTUM, CANCER (5936)
  - RECTUM, CANCER, PERINEOABDOMINAL OPERATION (5917)
  - RECTUM, MYOTOMY, SPHINCTEROTOMY, HIRSCHSPRUNG'S DISEASE (5933)
  - SMALL INTESTINE, REVERSAL, ILEUM (6182)
  - STOMACH, ADDUCENT LOOP SYNDROME, SURGERY (5808)
  - STOMACH, AMPULLA OF VATER, DISCONNE TION (6151)
  - STOMACH, CANCER (5822), (5823)
  - STOMACH, GASTROTOMY (5683)
  - STOMACH, ULCER, MUCOSA (5811)
  - STOMACH, VAGOTOMY, CANCER, ULCER, POLYP (5805)
  - THORACOTOMY, PEPTIC STENOSIS, CANCE ESOPHAGUS, RADIOLOGY (5664)
  - VAGOTOMY, GASTRIC RETENTION, DRAINA MANGEMENT (5773)
  - VAGOTOMY, GASTRIN RELEASE, ANTRAL DISTENTION (5540)
  - VAGOTOMY, ULCER, STOMACH, DUODENUM (5841)
- SECRETION
  - ACID, DUODENAL ULCER, CALCIUM CARBO ATE (5768)
  - ACID, HISTALOG, DUODENAL ULCER (567
  - ACID, STOMACH, FROG, GASTRIN VAGOTO (5537)
  - ACID, STOMACH, TELEMETRIC DETERMINATION (5548)

EXOCRINE PANCREAS, ENZYME, GLUCAGON, GLUCOSE (5552)•
GASTRIC, AORENERGIC-RLOCKING AGENT, ULCER, RAT (5829)•
GASTRIC, BASAL, ACID, PEPSIN, ADRENOMIMETIC (5546)
GASTRIC, ACID PRODUCTION, INHIBITION, IMIDAZOLINE DERIVATIVES (5534)•
GASTRIC, ACIDITY TITRATION, ACETYLCHOLINE, GASTRIN (5532)•
GASTRIC, BRADYKININ (5539)
GASTRIC, DIAGNOSTIC PROCEDURE, HEIDELBERG PH CAPSULF, ACIDITY TITRATION (5656)•
GASTRIC, GASTRIN, FROG, ACID, PEPSIN (5549)
GASTRIC, HEXAMETHONIUM, GASTRIC ACID, PEPSIN, HISTAMINE, PENTAGASTRIN (5535)•
GASTRIC, JEJUNUM, PH, FAT DIGESTION (5893)
GASTRIC, MOTILITY, NERVOUS CONTPOL (5472)
GASTRIC, NICOTINE, RAT (5542)
GASTRIC, PEPTIC ULCER, CHOLINERGIC ACTIVITY, STOMACH (5848)
GASTRIC, VISUAL DEPRIVATION, DOG, HISTAMINE (5541)
GASTRIC ACID, CEREBRAL INHIRITION, ATROPINE, INSULIN, HISTAMINE, SEROTONIN (5536)
GASTRIC ACID, GASTRIN, PENTAGASTRIN (5530)•
GASTRIC PEPTIC ULCER, MINERAL WATER (5851)
GASTRIC ULCER, ACIDITY, STOMACH TUBE (5653)•
GASTROINTESTINAL, IMMUNOGLOBULINS, PROTEOLYTIC ENZYMES, BOVINE MILK, INCUBATION, STOOL EXTRACTS (5633)
JEJUNUM, CHOLERA EXOTOXIN, CYCLOHEXIMIDE (6158)•
ECONIUM, ILEUS, SMALL INTESTINE, SURGERY (5874)
ECONIUM, WATER-SOLUBLE PROTEIN, ILEUS (5450)
ANCREAS, AMYLASE, GLYCO-AMYLASE TEST (5728)
ANCREAS, CASEIN HYDROLYSATE FISTULA (5555)
ANCREAS, CHOLELITHIASIS (6146)
ANCREAS, ENZYME, ELECTROTHERAPY, CHRONIC GASTRIC DISEASE (6161)
ANCREAS, PEPTIC ULCER, STOMACH, DUODENUM (5843)
ANCREAS, PEPTIDE, PANCREATIC CHOLERA (5958)
HOSPHOLIPID, SYNTHESIS, BILIARY TRACT, GALLSTONE (6129)
ALIVA PROTECTION, PEPTIC ULCER, GASTRIC JUICE, BILE, DUODENUM (5832)
TOMACH, GASTRIC PRESSURE (5551)
TOMACH, PAS (5545)
TOMACH, SALIVOGASTRONE INHIBITION (5787)
RYPSIN, CHYMOTRYPSIN, INTESTINAL, GLANDULAR CELLS, ANNELID (5634)
CTER
HOLEDOCHODUODENAL ACTIVITY, DRUG EFFECT, TERBUTALINE, ISOPRENALINE, HEART RATE, INTESTINAL MOTILITY (5513)•
ESOPHAGUS, SPASM, DILATION (5761)
ODDI, PANCREATITIS, OBSTRUCTION (5969)
PRESSURE, STOMACH, DISTENTION, PANCREAS, DOG (5522)
SPLEEN
ENLARGEMENT, PREHEPATIC BLOCK, ULTRASTRUCTURE, HYPOTHROMBINEMIA, ELECTRON MICROSCOPY, MITOCHONDRIA, CELL COMPONENTS (6054)•
SCANNING, 99M TC, 113M IN, LIVER, PEDIATRIC PATHOLOGY (5719)
STEROID
BILE, GLUCURONIDE, FISTULA, GALLBLADDER (5682)
BREAST MILK, NEONATAL JAUNDICE, NEONATE (5997)

CORTICO-, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS, CORTISOL, HEPATOCYTES, GLYCOGEN (5461)
CORTICO-, PRESTOMAL ILEITIS, SMALL INTESTINE (5882)
CORTISONE, LIVER, MITOCHONDRIA (5431)•
CORTISONE THERAPY, PANCREATITIS, LIPASE, FAT, RAT (5961)•
ESTRADIOL, PROGESTERONE, TESTOSTERONE, JEJUNUM, GLYCOLYTIC ENZYMES (5427)•
ESTRADIOL METABOLISM, BILIARY OBSTRUCTION, METABOLISM (6130)
FETAL LIVER, FETAL ADRENAL (5448)
GLUCOCORTICOID, FUNCTION, ADRENAL CORTEX, PEPTIC ULCER (5850)
HORMONE, PEPTIC ULCER, PROTEIN METABOLISM (5849)
HYDROCORTISONE ACETATE, ESTRADIOL, LIVER, GLUCOKINASE (5578)•
LIVER METABOLISM, CYTOCHROME P-450, MICROSOME (5566)•
LIVER, RAT (5412)•
NON-VIRAL HEPATITIS, COMA, EXCHANGE TRANSFUSION (6063)
ORAL CONTRACEPTIVE, MESENTERIC VENOUS THROMBOSIS (6235)
STOMACH
ABSORPTION, EMPTYING, ETHANOL, ACID OUTPUT (5494)•
ACID, HEATING, FREEZING, ACHLORHYDRIA, HISTAMINE, DOG (5828)•
ACID OUTPUT, DISTENTION, STIMULUS, HISTAMINE, PENTAGASTRIN (5533)•
ACID SECRETION, HEXAMETHONIUM, HISTAMINE, PENTAGASTRIN (5535)•
ACID SECRETION, DUODENAL ULCER, CALCIUM CARBONATE (5768)
ACUTE ULCER, DUODENUM, COMPLICATIONS (5804)
ACUTE ULCER, EROSION, DUODENUM (5806)
ACUTE ULCER, HEMORRHAGE, INTESTINE (6193)
AMYLOLYTIC ACTIVITY, STARCH HYDROLYSIS (5544)
ANGIOENDOTHELIOMA, SMALL INTESTINE, OBSTRUCTIVE ILEUS (5795)
ANTRAL DISTENTION, GASTRIN RELEASE, VAGOTOMY (5540)
CANCER, CELIACOGRAPHY (5710)
CANCER, CELL PROLIFERATION, AUTORADIOGRAPH (5788)
CANCER, DIAGNOSIS, GASTROSCOPE, GASTRO-CAMERA (5720)
CANCER, EARLY SURGERY, GASTRECTOMY (5816)

CANCER, PEPTIC ULCER, DIAGNOSIS, SURGERY (5709)
CANCER, RESECTION (5822)
CANCER, SURGERY (5823)
CANCER, THIAMINE METABOLISM (5812)
CANCER CELLS, BLOOD GROUPS, ANTIGEN (5775)
CARCINOMA, ACID PRODUCTION (5769)
CARCINOMA, ESOPHAGUS, MOTILITY, SPASM (5790)
CARDIA, CANCER, ESOPHAGUS, RESECTION, RADIOTHERAPY (5756)
CARDIAC UPPER ABDOMEN SYNDROME, LIVER, PANCREAS, BILIARY TRACT (6198)
CHRONIC DISEASE, ELECTROTHERAPY, PANCREAS (6161)
CHRONIC DISEASE, MINERAL WATER (5810)
CHRONIC GASTRITIS, GASTROCAMERA, ENDOSCOPY (5815)
CYTOLOGIC DIAGNOSIS (5714)
DIAGNOSTIC PROCEDURE, GASTRIC ACID, HEIDELBERG PH CAPSULE, ACIDITY TITRATION (5656)*
DISTENTION, PANCREATIC SPHINCTER PRESSURE, DOG (5522)
DIVERTICULA, SMALL INTESTINE, LOCALIZATION, MUCOSA, HEMORRHAGE, MALIGNANCY (5784)
DYSKINESIA, PYLORIC STENOSIS, X-RAY, DIAGNOSIS (5705)
EARLY CARCINOMA, GASTROCAMERA (5819)
EMBOLIZATION, MILK PRODUCTS, GASTRIC ULCER, TRAUMATIC RUPTURE, AGRANULOCYTOSIS (5833)
EROSION, ALKALI INGESTION (5793)
ESOPHAGUS, BRUSHING CYTOLOGY, CANCER DIAGNOSIS (5654)*
ESOPHAGUS, REFLUX, PREVENTION, RESECTION, ESOPHAGUS (5733)*
FISH, NOTOPTERUS CHITALA H.B., PARASITE, PSEUDOPROLEPTUS LAMYI N.SP., CEPHALIC STRUCTURE, NEMATODE (6251)
FUNCTIONAL DISORDERS, LC 9066, PACREATIN, CONSTIPATION, DYSKINESIA, HEPATITIS, COLITIS (6168)
GASTRECTOMY, PLASTIC RESECTION (5809)
GASTRIC ANTRUM, GASTRIC SECRETIONS, RAT, HEIDENHAIN POUCH (5528)*
GASTRIC INTUBATION, HIATAL HERNIA, ESOPHAGITIS, DYSPHAGIA (5737)
GASTRIC JUICE, PH MEASUREMENTS, ACIDITY, ULCER OPERATION, STOMACH TUBE (5653)*
GASTRIC MUCOSA, ENTEROCHROMAFFIN SYSTEM, INTRINSIC FACTOR, OXYNTIC CELLS, POLYPEPTIDE HORMONES (5414)*
GASTRIC ULCER, DYSPEPSIA, HIATAL HERNIA, ENDOSCOPY, RADIOLOGY (6237)
GASTRITIS, PEPTIC ULCER, SURGERY (6195)
GASTRITIS, ULCER, TREATMENT, SULPIRIDE MIGRAINE, ANTIEMETIC, ENDOSCOPY, RADIOLOGY (6242)
GASTROSCHISIS, ANTENATAL EVISCERATION (6244)
GASTROSCHISIS, SURGERY, SMALL INTESTINE, CONGENITAL DEFECT (6205)
GASTROSCOPY, DIAGNOSIS, ULCER (5717)
GASTROSCOPY, ESOPHAGUS, COMPLICATION (5680)
GASTROTOMY, SURGERY (5683)
GREATER CURVATURE, TUBE, RECONSTRUCTIVE SURGERY, ESOPHAGUS (5732)*
HEMORRHAGE, CYTOSCOPIC CONTROL (5791)
HYPERSECRETION, FAT DIGESTION, JEJUNAL PH (5893)
JUICE, IMMUNOGLOBULINS, MILK, SERUM, INCUBATION, PROTEASE ACTIVITY (5633)
LESION, ASPIRIN, 2-DEOXYGLUCOSE, HCl VAGOTOMY (5763)*
LYMPHOMATOSIS, ULCER, RADIOLOGY (5817)
LYMPHORETICULAR HYPERPLASIA, ULCER (5780)
MOTILITY, DUODENUM, BILE FLOW (5526)
MOTILITY, ELECTRIC RHYTHM (5524)
MOTILITY, MOTOR RESPONSE, DRUG EFFEC VAGAL EFFECT, ATROPINE, BLOCKING AGENTS (5518)*
MOTILITY, VAGO-VAGAL REFLEX, NERVOUS CONTROL (5520)*
MUCOSA, ATROPHIC GASTRITIS, BIOPSY, INTRACYTOPLASMIC CANALICULI, PARIETAL CELLS (5765)*
MUCOSA, DUODENUM, HISTOLOGY, PEPTIC ULCER (5826)*
MUCOSA, GLYCOPROTEIN, WHALE (5547)
MUCOSA, PEUTZ-JEGHER'S SYNDROME, SMALL INTESTINE, DUODENUM, JEJUNUM ILEUM (5875)
MUCOSA, PROTEOLYSIS, SILAIC ACID, HYPERACIDITY, PEPSIN (5531)*
MUCOSA, ULCER, ADENOSINE (5782)
MULTIPLE POLYPS, DIARRHEA, GASTRECT (5818)
NITRITES, METHEMOGLOBIN, NITROSAMIN CARCINOGENS, PH, BASICITY (5550)
PARTIAL GASTRECTOMY, DUMPING SYNDRO CALCIUM DEFICIENCY (5779)

PARTIAL GASTRECTOMY, SERUM ALKALINE PHOSPHATASE (5789)
PEPTIC ULCER, CHOLINERGIC ACTIVITY, GASTRIC JUICE (5848)
PEPTIC ULCER, DUODENUM, SURGERY (5844)
PEPTIC ULCER, DUODENUM, PANCREATIC SECRETION (5843)
PEPTIC ULCER, FAMILY (5838)
PEPTIC ULCER, GLUCOCORTICOID, DUODE (5850)
PEPTIC ULCER, SECRETION, MINERAL WA (5851)
PEPTIC ULCER, SURGERY, INDICATIONS, RESECTION (5843)
PH, TELEMETRIC DETERMINATION, ACID SECRETION (5548)
POLYP, POLYPOGENESIS, MALIGNANT DEG ERATION, ADENOMA (5785)
PRESSURE, RELAXANT (5767)
RADIOLOGICAL, TREATMENT, LYMPHATIC (5786)
RESECTION, ADDUCENT LOOP SYNDROME, SURGERY (5808)
RESECTION, AMPULLA OF VATER DISCONN TION (6151)
RESECTION, HEMOPHILIA A, ANTIHEMOPHILIC GLOBULIN, PIG, DUODENAL UL TRANSFUSIONS (6162)
RESECTION, HEMORRHAGIC ULCER, PEPTI ULCER, RELAPAROTOMY, HYPOCHROMIC ANEMIA, WEIGHT CONTROL, DELAYED RESULTS (5783)

ECTION, SORBITOL DEHYDROGENASE,
HOLECYSTECTOMY, LDH ACTIVITY,
RANSAMINASES, LIVER DISEASE, COLON
URGERY, TUMORS (6223)
ECTION, VAGOTOMY, CANCER, ULCER,
OLYP (5805)
ENTION, POSTVAGOTOMY, BETHANECHOL
5792)
ENTION, VAGOTOMY, DRAINAGE,
ANAGEMENT (5773)
RETION, ACID PRODUCTION, INHIBI-
ION, IMIDAZOLINE DERIVATIVE (5534)•
RETION, ADRENERGIC-BLOCKING AGENT,
LCER, RAT (5829)•
RETION, BASAL, ACID, PEPSIN,
DRENOMIMETIC (5546)
RETION, BRADYKININ (5539)
RETION, DUODENAL ULCER, SURGERY
5845)
RETION, FROG, GASTRIN, VAGOTOMY
5537)
RETION, GASTRIC ACID, ATROPINE,
NSULIN, HISTAMINE, SEROTONIN (5536)
RETION, GASTRIN, FROG, ACID, PEPSIN
5549)
RETION, GASTRIC PRESSURE (5551)
RETION, MOTILITY, NERVOUS CONTROL
5472)
RETION, NICOTINE, RAT (5542)
RETION, PAS (5545)
RETION, PEPTIC ULCER, SALIVA PRO-
ECTION, BILE, DUODENUM (5832)
RETION, SALIVOGASTRONE, INHIBITION
5787)
RETION, VISUAL DEPRIVATION, DOG,
ISTAMINE (5541)
RETION, ZOLLINGER-ELLISON SYNDROME,
ANCREAS, BROCRESINE (6214)
SA, ELECTRICAL ACTIVITY, ACTION
TENTIALS, GASTRIN PENTAPEPTIDE
514)•
SA, TUMOR IMPLANT (5798)
TANEOUS RUPTURE, CHILDREN (5776)
SS ULCER, POSTOPERATIVE HEMORRHAGE
ODENUM (5772)
ERY, ELECTROLYTE METABOLISM (5807)
, GREATER CURVATURE, RECONSTRUC-
VE SURGERY, ESOPHAGUS, CHILDREN
734)•
R, COMMON BILE DUCT OCCLUSION,
UNDICE (5796)
R, STENOSIS, ESOPHAGEAL HERNIA,
ODENUM, DIVERTICULUM (5802)
R, ABSORPTION, SMALL INTESTINE
888)
R, DIETARY PARTICLE SIZE, FIBER
NTENT, SWINE (5827)•
R, DUODENUM, PHARMACOTHERAPY
834)
R, DUODENUM, SMOOTH MUSCLE CON-
ACTION, BLOOD (5521)
R, DUODENUM, VAGOTOMY (5841)
R, EXPERIMENTAL, EXERTION, ANTI-
CER AGENT (5830)•
R, GASTRIC ACID, MUCOSA, DEFENSE
CHANISM (5831)
R, RESECTION, MUCOSA (5811)
R, STRESS, ATROPINE ADRENERGIC
OCKERS, GANGLIONIC BLOCKERS, RAT
324)•
R, STRESS, TRAUMA, DUODENUM
771)

  ULCER, TREATMENT, ENDOSCOPY, RADIOLOGY (5854)
  ULTRASTRUCTURE, ULCER, PITRESSIN (5764)•
  VAGOTOMY, GASTRIC ANALYSIS, STASIS, GASTRIC ULCER, HEMORRHAGE (5687)
  WALL, GASTROCUTANEOUS FISTULA, SURGERY (5799)
STORAGE
  LIPID, GLYCOLIPID, LIVER, DISEASE (5411)•
STRESS
  ATROPINE, ULCER PRODUCTION, STOMACH, MECHANISMS, ADRENERGIC BLOCKERS, GANGLIONIC BLOCKERS, RAT (5824)•
SUGAR
  TRANSPORT, SODIUM SENSITIVITY, INTESTINE (5478)•
SURGERY
  ANUS, GRACILIS ANOPLASTY, INCONTINENCE (5911)
  BILE DUCT, PERFORATION, NEONATE, CHOLANGIOGRAPHY (6148)
  BUDD-CHIARI SYNDROME, THROMBOPHLEBITIS (6213)
  CARCINOMA, ARGENTAFFIN CELL, RECTUM (5912)
  CARCINOMA, DUODENAL BULB (5800)
  CECAL ULCER, CECUM (5902)
  CHRONIC DUODENAL ULCER, CHILDREN (5837)
  COMMON BILE DUCT, LITHIASIS (6152)
  DIAPHRAGMATIC HERNIA, BOCHDALEK (6210)
  DUODENAL DUPLICATION, CYSTO-JEJUNOSTOMY (5777)
  DUODENAL ULCER, GASTRIC SECRETION (5845)
  EARLY, SMALL INTESTINE, OBSTRUCTION (5876)
  ESOPHAGEAL ACHALASIA, PH, REFLUX (5758)
  ESOPHAGEAL GASTRIC HERNIA, DIAGNOSIS, MANOMETRY (5718)
  ESOPHAGEAL HIATUS HERNIA (5747)
  ESOPHAGEAL RECONSTRUCTION, GASTRIC TUBE, CHILDREN (5734)•
  ESOPHAGEAL REPLACEMENT, MALIGNANT DISEASE (5757)
  ESOPHAGEAL, STOMACH TUBE (5732)•
  ESOPHAGUS, ACHALASIA, DYSPHAGIA, CARDIOMYOTOMY, DILATATION (5760)
  ESOPHAGUS, ATRESIA, NEONATE (5749)
  EVISCERATING HERNIA, SUTURE SINUS (6173)
  GALLBLADDER, ACUTE CHOLECYSTITIS (6141), (6142)
  GALLBLADDER, BILE DUCT, HEMATOMA, DUODENUM (5813)
  GALLBLADDER, VOLVULUS, NON-LITHIASIC CHOLECYSTOPATHY (6147)
  GASTROINTESTINAL TRACT, ADVANCES (5801)
  GENTAMYCIN, STERILIZATION, COLONIC FLORA, INTESTINAL GERMS (5941)
  HEPATIC FAILURE, TREATMENT (6023)
  HIATAL HERNIA, DYSPHAGIA, PULMONARY SYMPTOMS, RADIOLOGY, ANTISPASMOTICS, REFLUX, PEPTIC ULCER, DILATATION (5738)
  HIATAL HERNIA, RADIOLOGY (5701)
  HILL SUTURE, HIATAL HERNIA (5745)

  INTESTINE, ANTISEPSIS (6246)
  ISLET CELL TUMOR, HEMIPLEGIA, HYPOGLYCEMIC COMA, ULCER, DIARRHEA (5952)
  JEJUNOILEAL SHUNT, OBESITY, VITAMIN A, VITAMIN C (5859)
  JUVENILE GASTROINTESTINAL POLYPOSIS, CONGENITAL (6186)
  LATERAL DUODENAL FISTULA, DUODENOJEJUNOSTOMY (5774)
  LIVER, LYMPH, TRANSPLANT, DOG (6006)
  LIVER, NUTRIENT DEMANDS (6047)
  LIVER, TRAUMA (6049)
  LIVER, TRAUMA, HEPARIN (6073)
  LIVER GRAFT, FULMINATING HEPATITIS, HISTOLOGICAL CHANGES, HUMAN, BABOON (6069)
  MESENTERIC CYST, ENUCLEATION, BOWEL RESECTION, MARSUPIALIZATION (6209)
  OBSTRUCTIVE JAUNDICE, SURGERY, MORTALITY (6145)
  PANCREATIC CARCINOMA, PANCREATODUODENECTOMY, BYPASS OPERATIONS (5953)
  PANCREATIC LITHIASIS, RADIOLOGICAL EXAMINATION, AMYLASE, LIPASE, GLUCOSE TOLERANCE, HEMIPANCREATECTOMY (5962)
  PANCREATODUODENECTOMY, COMPLICATION, JEJUNOJEJUNAL INTUSSUSCEPTION (5866)
  PANCREATODUODENECTOMY, JEJUNOJEJUNAL INTUSSUSCEPTION (5866)
  PYLOROMYOTOMY, HYPERTROPHY, PYLORIC STENOSIS, CONGENITAL (5770)
  PYLORUS, CONGENITAL STENOSIS (5820)
  RADICAL, CANCER, DUODENAL PAPILLA (5803)
  RECTAL PROLAPSE, ETIOLOGY (5920)
  RECURRENT ILEUS, NOBLE OPERATION, ADHESIONS, APPENDICITIS, INTESTINAL TUMOR, PERITONITIS (5856)
  SMALL INTESTINE, CHRONIC ULCER (5868)
  SMALL INTESTINE, OBSTRUCTION (6234)
  STOMACH, DUODENUM, PEPTIC ULCER (5844)
  STOMACH, ELECTROLYTE METABOLISM (5807)
  STOMACH, GASTROSCHISIS, ANTENATAL EVISCERATION (6244)
  STOMACH, GASTROSCHISIS, SMALL INTESTINE, CONGENITAL DEFECT (6205)
  TRAUMA, STOMACH, GASTROCUTANEOUS, FISTULA (5799)
  VAGOTOMY, GASTRIC RETENTION, DRAINAGE (5773)

SYNDROME
  ADDUCENT LOOP, STOMACH RESECTION, SURGERY (5808)
  BUDD-CHIARI, THROMBOPHLEBITIS SURGERY (6213)
  BURNING FEET, MALABSORPTION, RIBOFLAVIN THERAPY (5899)
  CARDIAC UPPER ABDOMEN, LIVER, BILIARY, TRACT, STOMACH, PANCREAS (6198)
  CELIAC, SMALL INTESTINE, INTESTINAL WASH, CELL MORPHOLOGY, ULTRASTRUCTURE (5433)*
  CHRONIC RECURRENT INTESTINAL AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
  CUSHING'S, POLYPS, COLON (5926)
  CYTOLYSIS, LIVER, CHILDREN, CIRRHOSIS, CHRONIC HEPATITIS (6001)
  DUMPING, PARTIAL GASTRECTOMY, CALCIU DEFICIENCY (5779)
  GARDNER'S, COLON, COLECTOMY (5934)
  HEPATORENAL, KIDNEY TRANSPLANT (6035
  HUNTER, HURLER'S, SANFILIPPO, MUCOPO SACCHARIDE, METABOLISM, INBORN ERRORS (6211)
  HURLER'S, MUCOPOLYSACCHARIDES, GLYCURONIC ACID, HEPATOSPLENOMEGALY, BUHOT CELLS, CORNEAL OPACITY (6051
  IRRITABLE BOWEL, RECURRENT ABDOMINAL PAIN (6212)
  MALABSORPTION, ALBUMIN MALABSORPTION CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
  MALABSORPTION, SMALL INTESTINE, CROHN'S DISEASE, RADIOGRAPHY (5879
  MALLORY-WEISS, HEMORRHAGE, GASTROINTESTINAL TRACT, PANCREATIC CARCI OMA, SARCOMA (6238)
  MALLORY-WEISS, SPONTANEOUS RUPTURE, STOMACH, ESOPHAGUS, LACERATIONS, CARDIAC MASSAGE, GASTROINTESTINAL TRACT (5740)
  PANCREATIC CHOLERAIC, SECRETIN, GASTRIN, TUMOR, BLOOD, EXTRACTS, BIO-ASSAY (6156)*
  PEUTZ-JEGHER'S, SMALL INTESTINE, GASTRIC MUCOSA, DUODENUM, JEJUNUM ILEUM (5875)
  REYE'S, PERITONEAL DIALYSIS, HEPATOMEGALY (6018)
  STRESS ULCER, TRAUMA, STOMACH, DUODENUM (5771)
  ZOLLINGER-ELLISON, PANCREAS, BROCRESINE, GASTRIC SECRETION (62

THERAPY
  ENZYME INDUCTION, HYPERBILIRUBINEMI (5469)
  GALLBLADDER DISEASE, PHARMACOLOGY, PATHOPHYSIOLOGY (6132)
  METRONIDAZOLE, GIARDIA INTESTINALIS CYTOCHEMISTRY (6258)
  METRONIDAZOLE, GIARDIASIS, DIARRHEA (6266)
  PHARMACOLOGY, PANCREATITIS, PATHOPHYSIOLOGY (5964)
  PHARMACOLOGY, SMALL INTESTINE DISEA PATHOPHYSIOLOGY (5863)
  ULCER, STOMACH, DUODENUM (5834)
  X-RAY, ESOPHAGUS, CARCINOMA (5746)

TOXICITY
  ACUTE, ALCOHOL, ACETONE, LD50 (606
  ALCOHOL, LIVER, CIRRHOSIS, CHRONIC HEPATITIS (6122)
  HEPATO-, CAFFEINE, THEOPHYLLINE, A NON-VIRAL HEPATITIS, RAT (5821)
  HEPATO-, CCl4, ETHANOL (5991)*
  LIVER, ACUTE VIRAL HEPATITIS (6034
  LIVER, ENZYME, POISON, DRUG (5425)
  LYMPHOCYTE, ULCERATIVE COLITIS, GR LOMATOUS COLITIS, ALLOGENIC COLO EPITHELIAL CELLS (5947)*
  POISON, ACTIVATED CHARCOAL, LIVER, ASPIRIN, PENTOBARBITOL, GASTROINTESTINAL TRACT (5639)

TOXIN
  CYANIDE, LIVER, INHIBITION, AMYLAS SYNTHESIS, PROTECTION, RAT (5567
  ENDO-, LIVER, SPLEEN, SALMONELLA ENTERITIDIS, RAT, MOUSE (5983)*

NSPLANT
  HETEROTOPIC, LIVER, HYPERTROPHY, SPLENOPORTAL ANASTOMOSIS, PIG (6012)
  KIDNEY, HEPATORENAL SYNDROME (6035)
  LIVER, BILIRUBINEMIA, HETEROTOPIC GRAFT, HUMAN, BABOON (6007)
  LIVER, HUMAN DONOR, SELECTION CRITERIA, SURGICAL PROCEDURE (5985)•
  ORTHOTOPIC, LIVER, LYMPHATIC, DOG (6006)
NSPORT
  AMINO ACID, LIVER, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)•
  AMINO ACID, SUGAR, SODIUM SENSITIVITY, INTESTINE (5478)•
  AMMONIA, METABOLISM, GASTROINTESTINAL TRACT (5634)
  GLUCOSE, AMINO ACID, FASTING (5491)•
  K+-H+ EXCHANGE, LIVER, MITOCHONDRIAL MEMBRANES, MAO ACTIVITY (5428)•
  LIPOPROTEIN, INTESTINAL LYMPH, ULTRASTRUCTURE (5417)•
  NUCLEIC ACID, PHENETHYL ALCOHOL, HEPATOMA CELL, RAT (5989)•
UMA
  ACUTE, LIVER, HEPATIC COPPER, NON-VIRAL HEPATITIS (6067)
  BLUNT, COMMON BILE DUCT, TRANSECTION, CHOLEDOCHODUODENOSTOMY (6133)
  BLUNT, DIAPHRAGMATIC RUPTURE (6185)
  BLUNT, DUODENAL RUPTURE, RETROPERITONEAL (5797)
  CHEST, TRACHEO-ESOPHAGEAL FISTULA (5744)
  CLOSED LIVER, SURGERY (6049)
  HEPATIC, HEPATECTOMY, GLISSON'S CAPSULE, RADIOLOGY, DRAINAGE (6052)
  LIVER, ACUTE NON-VIRAL HEPATITIS (6083), (6188)
  LIVER, CARDIOPATHOGENIC DIET ATP-SPOFA HISTOLOGY (5993)•
  LIVER, HEPARIN, SURGERY (6073)
  LIVER, PENTOBARBITOL, CATABOLISM (6081)
R
  ADENOCANTHOMA, COLON, SQUAMOUS CELL CARCINOMA (5905)
  ANGIOENDOTHELIOMA, STOMACH, SMALL INTESTINE, OBSTRUCTIVE ILEUS (5795)
  BENIGN, LYMPHOMA, STOMACH, RADIOLOGY, ULCER (5817)
  CALCIFIED CAVERNOUS HEMANGIOMA, LIVER, SURGERY, RADIOLOGY (6015)
  ESOPHAGUS, DIAGNOSIS, MULER'S TEST (5721)
  GASTRIC COMMON BILE DUCT OCCLUSION, JAUNDICE (5796)
  HEMANGIOMA, LIVER, RADIATION THERAPY (6017)
  HEPATIC, ALKALINE PHOSPHATASE, LEUCOCYTE, ACUTE VIRAL HEPATITIS, OBSTRUCTIVE JAUNDICE (5723)
  HEPATIC, PERITONEOSCOPY, SPACE-OCCUPYING LESION, LIVER SCAN (5659)•
  HEPATOMA, AH 13, AH 39, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS (5987)•
  HEPATOMA, ENZYME ACTIVITY, DNA POLYMERASE, LIVER, RIBOSOME, MICROSOME (5429)•
  HEPATOMA, HIPPURIC ACID SYNTHESIS, AZO-DYE FEEDING, RAT (6004)
  IMPLANT, GASTRIC SEROSA (5798)
  ISLET CELL, PANCREAS, HYPOGLYCEMIA COMA, HEMIPLEGIA, TOLBUTAMIDE TEST, INSULIN (5952)
  LEIOMYOMA, ABDOMINAL, ESOPHAGUS, EPITHELIAL TUMOR, MESODERMAL TUMOR (5754)
  LEIOMYOMA, ESOPHAGUS, SURGERY (5750)
  LIVER, OBSTRUCTIVE JAUNDICE, CIRRHOSIS TREATMENT (6011)
  LIVER, RESECTION, RIGHT LOBE (6009)
  LIVER, RIBOFLAVIN, RAT (6072)
  LIVER, SCINTILLATION CAMERA, DIAGNOSIS (5670)
  LYMPHATIC STOMACH UPSET, RADIOLOGICAL TREATMENT (5786)
  MALIGNANT, MELANOMA, ESOPHAGUS, CHILD (5743)
  PANCREATIC ISLET CELL, CHOLERA (6231)
  PARATHYROID, ADENOMA, HYPERCALCEMIA, PEPTIC ULCER (5836)
  SMALL INTESTINE, PERFORATION, OBSTRUCTION (5869)
  STOMACH, STENOSIS, ESOPHAGEAL HERNIA, DUODENUM, DIVERTICULUM (5802)
  VILLOUS, ADENOMA, COLON, RECTUM (5940)
ULCER
  ACUTE, GASTRIC, DUODENAL, COMPLICATIONS (5804)
  ACUTE, STOMACH, DUODENUM (5806)
  ACUTE, STOMACH, INTESTINE, HEMORRHAGE (6193)
  ADRENERGIC BLOCKING AGENT, RAT (5829)•
  CECAL, SOLITARY, SURGERY (5902)
  CHRONIC, SMALL INTESTINE, SURGERY (5868)
  DUODENAL, ACID SECRETION, CALCIUM CARBONATE (5768)
  DUODENAL, ACID SECRETION, HISTALOG (5678)
  DUODENAL, ACUTE PANCREATITIS, EXTRACORPOREAL CIRCULATION (5976)
  DUODENAL, CHRONIC, SURGERY, CHILDREN (5837)
  DUODENAL, GASTRIC, SMOOTH MUSCLE CONTRACTION, BLOOD (5521)
  DUODENAL, HYPERPARATHYROIDISM, DIATHESIS, PARATHYROID ADENOMA (5840)
  DUODENAL, SURGERY, GASTRIC SECRETION (5845)
  DUODENUM, HEREDITY (5852)
  DUODENUM, MUCOSA, BIOPSY, TELEMETRY (5847)
  DUODENUM, PYLOROPLASTY, VAGOTOMY (5842)
  DUODENUM, SURGERY, VAGOTOMY (5778)
  GASTRIC, ACHLORHYDRIA, HEATING, FREEZING, DOG (5828)•
  GASTRIC, DUODENAL ABSORPTION, SMALL INTESTINE (5888)
  GASTRIC, DUODENAL, GASTROSCOPY, DIAGNOSIS (5717)
  GASTRIC, DUODENAL, PEPTIC, STEROID HORMONE, PROTEIN METABOLISM (5849)
  GASTRIC, DYSPEPSIA, REGURGITATION, ENDOSCOPY, RADIOLOGY (6237)
  GASTRIC, EMBOLISM, GASTRIC CONTENTS, TRAUMATIC RUPTURE, GASTRIC TUBE, AGRANULOCYTOSIS (5833)

GASTRIC, GASTRIC ACID, MUCOSA, DEFENSE MECHANISM (5831)
GASTRIC, LYMPHOMATOSIS (5817)
GASTRIC, LYMPHORETICULAR HYPERPLASIA (5780)
GASTRIC, NECROSIS, FUNDUS, PITRESSIN, CORTISONE (5764)*
GASTRIC, RESECTION (5811)
GASTRIC, SECRETION, ACIDITY, STOMACH TUBE, SURGERY (5653)*
GASTRIC, VAGOTOMY, GASTRIC STASIS, HEMORRHAGE (5687)
GASTRODUODENAL, BILLROTH I RESECTION, VAGOTOMY (5846)
GASTRODUODENAL, SULPIRIDE, TREATMENT, MIGRAINE, ANTIEMETIC, ENDOSCOPY, RADIOLOGY (6242)
HEMORRHAGIC, GASTRIC RESECTION, DELAYED RESULTS, WEIGHT CONTROL, HYPERCHRONIC ANEMIA, PEPTIC ULCER, RELAPAROTOMY (5783)
LEARNING (5766)
MUCOSA, STOMACH, ADENOSINE (5782)
PEPTIC, CHOLINERGIC ACTIVITY, STOMACH (5848)
PEPTIC, DUODENAL, FAMILY, OCCUPATION, RELIGION (5839)
PEPTIC, DUODENUM, GASTRIC MUCOSA, HISTOLOGY (5826)*
PEPTIC, GASTRIC, DUODENAL, CHRONIC GASTRITIS, SURGERY (6195)
PEPTIC, GASTRIC, DUODENAL, FAMILY (5838)
PEPTIC, PARATHYROID ADENOMA, HYPERCALCEMIA (5836)
PEPTIC, PORTACAVAL SHUNT, PROPHYLAXIS, ALCOHOLISM (6233)
PEPTIC, SALIVA PROTECTION, GASTRIC JUICE, BILE, DUODENUM (5832)
PEPTIC, STOMACH, DIAGNOSIS, SURGERY (5709)
PEPTIC, STOMACH, DUODENUM, GLUCOCORTICOID (5850)
PEPTIC, STOMACH, DUODENUM, MINERAL WATER (5851)
PEPTIC, STOMACH, DUODENUM, PANCREATIC SECRETION (5843)
PEPTIC, STOMACH, DUODENUM, SURGERY (5844)
PEPTIC, STOMACH, RESECTION, SURGERY, INDICATIONS (5843)
STERCORAL, HEMORRHAGE, CARDIOVASCULAR DISEASE (5906)
STOMACH, DIETARY PARTICLE SIZE, FIBER CONTENT, SWINE (5827)*
STOMACH, DUODENAL, PHARMACOTHERAPY (5834)
STOMACH, DUODENUM, VAGOTOMY (5841)
STOMACH, EXPERIMENTAL, EXERTION (5830)*
STOMACH, VAGOTOMY, RESECTION, CANCER, POLYP (5805)
STRESS, ATROPINE-STRESS, STOMACH, MECHANISMS, ADRENERGIC BLOCKERS, GANGLIONIC BLOCKERS, RAT (5824)*
STRESS, HEMORRHAGE, VAGOTOMY, PYLOROPLASTY (5835)
STRESS, POSTOPERATIVE HEMORRHAGE, STOMACH, DUODENUM (5772)
STRESS, TRAUMA, STOMACH, DUODENUM (5771)
TREATMENT, ENDOSCOPY, MALIGNANCY, RADIOLOGY (5854)

ULTRASTRUCTURE
ELECTRON MICROSCOPY, SMALL INTESTINE, DUODENAL, EPITHELIUM, ENZYMATIC LOCALIZATION, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)*
GASTRIC MUCOSA, ATROPHIC GASTRITIS, BIOPSY, INTRACYTOPLASMIC CANALICULI PARIETAL CELLS (5765)*
JEJUNAL MUCOSA, SCANNING ELECTRON MICROSCOPY, CELIAC DISEASE (5885)*
LAMINA PROPRIA, MACROPHAGE, RECTUM (5925)
LIPOPROTEIN, LYMPH, INTESTINE, TRANSPORT (5417)*
LIVER, MICROSOME, ETHANOL OXIDATION, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)*
LIVER, MITOCHONDRIA, CARNITINE, PALMITIC ACID, ESTERS, METABOLISM, RAT (5582)*
LIVER, MITOCHONDRIAL MEMBRANE, K+-H+ EXCHANGE, MAO ACTIVITY, RAT (5428)*
LIVER, MONOCROTALINE, CHICKEN (6058)
LIVER, THYROXINE, METAMORPHOSIS, TADPOLE (5465)
LIVER DISEASE, LIVER PATHOLOGY, TYPE III GLYCOGENOSIS, SKELETAL MUSCLE (5986)*
LIVER MICROSOME, METABOLISM, DIPHENYLHYDANTOIN, DRUG EFFECT, BIOTRANSFORMATION (5607)
LIVER PARENCHYMA, SPLENOMEGALY, CELL COMPONENTS, MITOCHONDRIA, PRE-HEPATIC BLOCK (6054)*
LIVER SINUSOID (5471)
MICROSOME, LIVER, ENZYME, BARBITURAT RAT (5601)
MICROSOME, LIVER, ETHANOL, UDPGT ACTIVITY (5604)
MICROSOME, LIVER, PH, SODIUM BINDING MAGNESIUM BINDING, ATP, EDTA (5449
MICROSOME, LIVER, SEDIMENTATION, SUCROSE, PROTEIN SYNTHESIS (5409)*
MITOCHONDRIA, LIVER, ENZYME, RAT, E.COLI, AEROBIC OXIDATION (5452)
MITOCHONDRIA, LIVER, SEDIMENTATION VELOCITY, WATER CONTENT, COMPOSITI (5431)*
MITOCHONDRIA, LIVER, HISTOCHEMISTRY, MEMBRANE, MONOAMINE OXIDASE, ENZYM MARKER (5440)*
MITOCHONDRIA, LIVER, PHOSPHOENOLPYRU ATE, METABOLISM (5572)*
MITOCHONDRIA, LIVER, STARVATION, EMBRYONIC, DENSITY GRADIENT CENTRIFUGATION (5434)*
MITOCHONDRIA, LIVER, MEMBRANE, SURF CHARGE, FREE-FLOW ELECTROPHORESIS (5426)*
SMALL INTESTINE, SALINE WASH, CELL LOSS, NORMAL MUCOSA, CELIAC DISEA (5433)*

VIRUS
CHOLERA, GAMMA RAY INACTIVATION, HO (6183)
ENTERO-, GASTROENTERITIS, NEONATE (6172)
ENTERO-, RURAL FAMILIES, EPIDEMIOLO (6176)

TAMIN
  CHOLINE, METABOLISM, DIET, FAT, METHIONINE (5558)*
  D, DEFICIENCY, MALABSORPTION, HISTOLOGY (5892)
  DEFICIT, A,C, OBESITY, JEJUNOILEAL SHUNT (5859)
  FOLATE, JEJUNUM, FOLATE METABOLIZING ENZYMES, REGULATION (5611)*
  FOLIC ACID, GLYCOLYTIC ENZYMES, JEJUNUM (5613)*
  FOLIC ACID, HEPATITIS, ACUTE PHASE, BILIRUBIN, TRANSAMINASES, ELECTROPHORESIS, ALKALINE PHOSPHATASE (6078)
  K, PHYLLOQUINONE, HORSE LIVER, BIOASSAY (5437)*
  LOW CHOLINE, DIET, STEATOSIS, IRON METABOLISM, RAT (5608)
  RIBOFLAVIN, HEPATOMA, RAT (6072)
  RIBOFLAVIN, THERAPY, MALABSORPTION, BURNING FEET SYNDROME (5899)
  THIAMINE, METABOLISM, GASTRIC CANCER (5812)

LIBRARY U. OF I. URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

305

Vet Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY

ABSTRACTS
AND
CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

SEPTEMBER 1970
VOLUME 5, NO. 9
6283–7021

olume 5, No. 9

Abstract and Citation Nos. 6283–7021

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed

by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager
Contract Number NIH-70-2040
with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metabolic Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversity of publications in the area of gastroenterology makes it imperative that an appropriate service be available t investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and comment for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and author indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent o Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment required in advance, and check or money order should be made payable to the Superintendent of Documents.

CONTENTS

	Cross Reference Abbreviations	Abstracts, Citations	Page
RE-CLINICAL SCIENCES			
Morphology, Cellular Structure and Histochemistry	(P:Morph)	6283-6347	639
Absorption—Excretion—Transport	(P:Absorp)	6348-6377	647
Motility	(P:Motil)	6378-6391	651
Secretion and Metabolism			
Stomach	(P:Secr:Stom)	6392-6408	653
Pancreas	(P:Secr:Panc)	6409-6418	655
Hepatobiliary Tract	(P:Secr:Hepatobil)	6419-6491	657
Intestine	(P:Secr:Int)	6492-6496	668
General	(P:Gen)	6497-6515	669
AGNOSTIC PROCEDURES	(Diagproc)	6516-6578	672
STROINTESTINAL DISEASES			
Esophagus	(D:Esoph)	6579-6606	677
Stomach and Duodenum	(D:Stomduo)	6607-6656	679
Peptic Ulcers	(D:Stomduo:Peptulc)	6657-6670	683
Small Intestine	(D:S.Intest)	6671-6682	684
Malabsorption	(D:S.Intest:Malabs)	6683-6692	685
Large Intestine	(D:L.Intest)	6693-6729	687
Ulcerative Colitis	(D:L.Intest:Ulccol)	6730-6737	689
Pancreas	(D:Pancreas)	6738-6748	690
Pancreatitis	(D:Pancreas:Pancreat)	6749-6760	691
Liver and Biliary Tract	(D:Livbil)	6761-6829	692
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	6830-6853	700
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	6854-6868	702
Chronic Hepatitis	(D:Livbil:C.Hep)	6869-6874	704
Cirrhosis	(D:Livbil:Cirrh)	6875-6910	705
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	6911-6927	706
General	(D:Gen)	6928-7003	710
Parasitology	(D:Gen:Parasit)	7004-7021	717
THOR INDEX			
BJECT INDEX			

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

r sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.
oscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional;
d $1.25 for a single copy. Payment is required in advance, and check or money order should be made
yable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. For journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medical Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans	It.	Italian
Ar.	Arabic	Jap.	Japanese
Bul.	Bulgarian	Kor.	Korean
Ch.	Chinese	Latv.	Latvian
Cz.	Czech	Lith.	Lithuanian
Dan.	Danish	Nor.	Norwegian
Dut.	Dutch	Pol.	Polish
E.	English	Por.	Portuguese
Eston.	Estonian	Rum.	Rumanian
Fin.	Finnish	Rus.	Russian
Fl.	Flemish	Ser.	Serbo-Croatian
Fr.	French	Sl.	Slovak
Ger.	German	Sp.	Spanish
Gr.	Greek	Sw.	Swedish
Heb.	Hebrew	Th.	Thai
Hun.	Hungarian	Turk.	Turkish
Ic.	Icelandic	Uk.	Ukrainian
In.	Indonesian	Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
µg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD_{50}	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
µM	micromolar

mC,µC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transaminas
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

3 ELECTRON MICROSCOPIC STUDIES OF THE JEJUNAL
EPITHELIUM FROM NEONATAL PIGS FED DIFFERENT
TS. *(E.)* Broughton, C. W. (Anim. Sci. Dept.,
th Carolina St. U., Raleigh) and J. G. Lecce.
utr 100(4):445-449, 1970.

effects of simple and complex diets known to
ect closure on pinocytic activity in immature
let gut epithelium were studied by feeding glu-
e or colostrum (simple and complex diets, resp.)
a simple salt solution as control to 8 piglets
ch were then sacrified and the jejunal tissue
oved and prepared for electron microscopy. Je-
al tissue from piglets at various developmental
ges showed columnar epithelial cells with a
iated border of microvilli while the lateral
pranes revealed desmosomes and interdigita-
ns. In piglets fed colostrum, indented plasma
pranes and structures resembling lysosomes were
sent. Mucosal cells from those fed glucose also
wed irregular plasma membranes and many pinocytic
nnels and vesicles. Tissue from piglets fed
t solution, which only slightly effects closure,
onstrated reduced pinocytic activity with more
ular plasmalemma and few vesicles and vacuoles.
pinocytic activity was found in gut epithelium
sed with colostrum or treated with 6-dinitro-
resol, a metabolic inhibitor.

4 THE ENDOCRINE CELLS OF HUMAN DUODENAL
MUCOSA: AN ELECTRON MICROSCOPE STUDY.
Kobayashi, S. (Niigata U. Sch. Med., Japan),
Fujita and T. Sasagawa. *Arch Histol Jap*
3-4):477-494, 1970.

occurrence and ultrastructure of five different
es of endocrine cells in human duodenal mucosa
e studied by electron microscopy in 3 surgical
psy specimens fixed with glutaraldehyde and
ium tetroxide and stained with uranyl acetate
lead. The cells of endocrine structure occurred
nly in the deeper portions of the crypts of
berkuhn and the ducts of Brunner's glands, with
endocrine elements in the villus epithelium.
e different types of endocrine cells were ob-
ved and were classified as: (1) enterochromaffin
ls with dense, polymorphous granules; (2) type
ndocrine cells with large (250-400 nm) round
al granules; (3) type 3 cells with pyramidal or
ndle shape, containing small (150-250 nm) round
nules and intranuclear fibrous cytoplasm; (4)
e 4 endocrine cells containing small round
nules and characterized by a rounded thick shape,
h a constricted neck at the apical end which ex-
ded horizontally and was covered by a tuft of
rovilli; and (5) intestinal D cells with medium
ed (300-400 nm) round granules morphologically
ntical with those found in pancreatic D cells of
electron density and finely granulated texture.
five types of endocrine cells all appeared to
e the lumen of the crypts of the ducts with the
row apical process covered with microvilli.

5 STAINING AND ELECTRON MICROSCOPIC
CHARACTERISTICS OF AMINE-STORING CELLS
RAT GASTRIC MUCOSA. *(E.)* Hirvonen, J. (Dept. Anat., U. Helsinki, Finland) and A. Penttila. *Scand J Gastroent* 5(3):177-185, 1970.

Amine-storing cells in the gastric mucosa of rats were characterized by staining (lead acetate, toluidine blue and cresyl violet), fluorescence (formaldehyde and o-phthaldialdehyde vaporing), and electron miscroscopy. Numerous mucosal mast cells situated interglandularly in the neck region of the gastric mucosa stained with cresyl violet and toluidine blue and coincided with the fluorescent areas after formaldehyde and o-phthaldialdehyde vaporing which demonstrated 5-hydroxytryptamine and histamine, resp. Mucosal mast cells varied in shape and had irregular nuclei surrounded by large osmiophilic granules with membranes, few mitochondria, and poorly developed Golgi bodies, while enterochromaffin cells were characterized by uniform round osmiophilic granules located next to the basement membranes of the cells, and the most numerous eosinophilic leucocytes were distinguished by highly osmiophilic crystals in the center of the granules. The more intense o-phthaldialdehyde-induced staining of the enterochromaffin cells indicated they are the principal storers of histamine, while formaldehyde-induced fluorescence (5-hydroxytryptamine indicator) was significant in both mucosal mast cells and enterochromaffin cells.

6286 EFFECTS OF TOXOHORMONE ON THE ULTRASTRUCTURE OF RAT HEPATOCYTES. *(E.)* Parry, E. W. (Dept. Histol., U. Liverpool, England) and F. N. Ghadially. *J Path* 100(3):161-168, 1970.

Ultrastructural changes similar to those occurring in the liver of the tumor-bearing rat were produced in the hepatocytes of normal male albino rats (8 animals used in the study) following i.p. injection (over a period of 10 days) of a crude toxohormone fraction prepared from the Walker carcinoma. Light microscopy revealed no obvious changes, but electron microscopy showed prominent collections of hepatocellular lysosomes in samples from those animals treated with toxohormone in which bile canaliculi examined were completely devoid of attendant lysosomes in the plane of section, and collections of 20 to 30 lysosomes were not infrequent. A 2-fold increase in hepatocellular lysosome numbers was found in the toxohormone treated animals over untreated, normal tissue fraction treated, and saline treated animals. Occasional bile canaliculi from the livers of the toxohormone treated animals showed dilatation of the lumen, with a simplified appearance due to loss of microvilli over part of the periphery. Small membrane-enclosed collections of recognizable cytoplasmic organelles were frequently seen in toxohormone treated animals, but not in the other groups.

6287 COMPARATIVE STUDIES ON NUCLEI AND CHROMATIN OF HEPATOMAS AND RAT LIVER. *(E.)* Grunicke, H. (Biochem. Inst. U. Freiburg, Germany), V. R. Potter and H. P. Morris. *Cancer Res* 30(3):776-787, 1970.

The protein composition of nuclei and chromatin from hepatoma 5123C and 7800 and from the host livers of male Buffalo rats was determined as well as the amounts of total nuclear chromosomal RNA and the phosphate content of the nuclear proteins. Thermal denaturation properties using chromatin preparations and template activities of the chromatin in a DNA polymerase system were also compared. There were no differences in the nature of the protein fractions studied from the host liver and hepatoma 5123C nor were there any differences in the concentration of total nuclear RNA. Novikoff cells showed a marked increase in residual nuclear protein and total nuclear and chromosomal RNA when compared to normal liver. The host liver and hepatoma 5123C showed a similar phosphate content of nuclear proteins. In the Novikoff cells the phosphorylation of the histones and the chromosomal nonhistone proteins was lower than in the host liver and hepatoma 5123C. Nearly identical temperatures of half-melting and total hyperchromicities for chromatin preparations of host liver, hepatoma 5123C, and Novikoff cells were demonstrated in the thermal denaturation studies. Hepatoma 5123C and 7800 had lower template activities of chromatin than their host livers while chromatin of Novikoff cells had a lower template activity than normal liver.

6288 EXPERIMENTAL STUDIES ON THE ISOLATED HUMORAL FACTOR WHICH PROMOTES THE SECRETORY ACTIVITY OF THE GASTRIC CHIEF CELLS AND THE EXOCRINE PANCREATIC CELLS: III. EFFECTS OF SUBSTANCES EXTRACTED FROM THE GASTRIC MUCOSA ON THE GASTRIC CHIEF CELLS. *(E.)* Mabuchi, Y. (Wakayama Med. Coll., Japan). *Arch Histol Jap* 31(3-4):255-268, 1970.

The effects of substances extracted from the gastric mucosa on the gastric chief cells in rats was investigated by light microscopy. Chemical color testing for reaction of amino acid or protein showed the presence of a phenol group and an imidazole group in the subnuclear portion of the gastric surface epithelial cells where *productin* vacuoles were seen. Amino acid analysis showed that the alcoholic (33%) extract of the mucosal tissue after immersion of the tissue contained 18 kinds of amino acids and 5 kinds of related compounds. Following injection (s.c.) of these extracted substances, the secretory activity of the gastric chief cells was studied morphologically in an attempt to identify a substance producing the same effects as *productin*. Arginine, histidine, lysine and tyrosine activity promoted the production of secretory granules in the chief cells while asparagine and serine promoted the vacuolization of the granules. These substances may be the components of *productin*.

6289 SOME OBSERVATIONS ON THE FINE STRUCTURE OF THE GUINEA PIG TAENIA COLI AFTER INCUBATION IN HYPERTONIC SOLUTION. *(E.)* Nishihara, H. (Dept. Pharmacol., U. Oxford, England). *J Anat* 107(1):101-114, 1970.

The fine structure of guinea pig taenia coli was studied by electron microscopy after incubation in hypertonic solution. In osmium-fixed taenia coli, incubated in hypertonic solution (620 m-osmole), no significant fine structural differences were noticed when compared to tissues incubated in normal (292 m-osmole) solution. Muscle spindles were spindle-shaped with a long region of constant diameter and the mitochondria were usually elongated and oriented along the long axis of the cell. Gross sections of muscle fibres incubated in hypertonic solution showed an enlarged intervening extracellular space between cells, but the nexuses between smooth muscle cells were intact; this indicates that the nexus is a stable structure and if it is the site of an electrical low-resistance pathway between cells, such a pathway can apparently persist in a hypertonic medium. The plasma membranes of 2 neighboring cells were separated by a nearly uniform gap of less than 20 nm and end to end, side to side and end to side approaches between cells were observed in specimens treated with hypertonic solution. The number of plasmalemmal vesicles was increased; they were enlarged and had a characteristic narrow-necked, flask-like shape following hypertonic incubation. The dense bodies were larger and the myofilaments less clearly defined than in normal muscle cells, in which small and large size filaments could be distinguished. The muscle was apparently not in a contracted state in a hypertonic solution.

6290 RABBIT LIVER AND RABBIT KIDNEY FRUCTOSE DIPHOSPHATASES: CATALYTIC PROPERTIES OF ENZYMES ACTIVATED BY COENZYME A AND ACYL CARRIER PROTEIN. *(E.)* Nakashima, K. (Nagoya U. Med. Sch., Japan), B. L. Horecker, S. Traniello and S. Pontremoli. *Arch Biochem Biophys* 139(1):190-199, 1970.

The catalytic properties of rabbit liver and rabbit kidney fructose diphosphatases were studied by spectrophotometry and chromatography, following treatment with CoA or acyl carrier protein from *E. coli*. The activity in the neutral pH range (relative activity: control 100%; treatment 364%) was increased several fold, and the pH optima was shifted from pH 8.8 to pH 7.5 in the presence of $MgCl_2$, and from pH 9.1 to pH 8.2 when $MnCl_2$ is the cofactor. Maximum activity required the presence of a chelating agent such as EDTA (0.005 and 0.5 mM) histidine (0.1 and 1.0 mM) or glycine (1 and 40 mM). The untreated enzymes were inhibited by excess fructose-1,6-diphosphate (10^{-3}M) whereas the activated enzymes were not, although the Km for this substrate was increased by approximately 10-fold. The modified enzymes were also sensitive to inhibition by AMP (0.5 mM). Reactions with CoA or acyl carrier protein were prevented by adding high concentrations of substrate (10^{-3}M) but not by AMP. Two sulfhydryl groups appeared to be blocked in the activated enzyme, and the changes in catalytic properties were reversed by treatment with sulfhydryl compounds such as cysteine or glutathione. Activation apparently involves the formation of disulfide linkages between CoA or acyl carrier protein and the enzyme. Activation by CoA or an acyl carrier protein may represent a physiological mechanism for the reciprocal control of gluconeogenesis and fatty acid synthesis.

291 HETEROGENEITY OF RAT LIVER MITOCHONDRIAL FRACTIONS AND THE EFFECT OF TRIIODOTHYRONINE
I THEIR PROTEIN TURNOVER.

(E.) Katyare, S. S.
3hadha Atomic Res Ctr., Bombay, India), P. Fatter-
ıker and A. Sreenivasan. *Biochem J* 118(1):111-121,
970.

reatment of thyroidectomized rats with triiodothyronine
ıs used to magnify the differential behavior of the
itochondrial fractions and to illustrate, from studies
ı protein synthesis and turnover rates, the relation-
nip in these particles. All mitochondrial fractions
neavy, light, and fluffy, separated by differential
entrifugation) possessed soluble as well as membrane-
ound enzymes typical of mitochondria. The heavy
raction was stable, whereas the fluffy and light
ractions were loosely coupled and lacked the ability
f coupled phosphorylation. The basic membrane struc-
ıre of all fractions were similar. The turnover
ates of proteins (as measured by DL-(1-^{14}C)-leucine
ncorporation) in the heavy and fluffy particles were
lmost identical (at 2 days, 2.5x10^{-2} and 3.2x10^{-2}
om/mg protein, resp.); whereas the label in the
ight fraction turned over at a comparatively faster
ate (6.3 x 10^{-2} cpm/mg protein at 2 days).
riiodothyronine stimulated succinoxidase acti-
ity maximally much earlier in the light fraction
3 hr) than in the heavy fraction (45 hr). The
ctivity in the fluffy particles, however, remained
naffected (plateaued after 10 hr). Malate dehy-
rogenase activity in all fractions was stimulated
nly at 40 hr after thyroid hormone treatment. La-
eled leucine incorporation *in vivo* in the treated
nimals (thyroid hormone) indicated a rapid initial
ncorporation (control 619; treatment 1113 cpm/mg
rotein) and high synthetic ability of the light
raction. The amount of light mitochondrial pro-
eins decreased on thyroidectomy and increased (40%
nd 160%, resp.) on treatment with triiodothyronine.

292 STUDIES ON PLASMA MEMBRANES: XII. FRACTIONATION OF THE ATPASE OF DEOXYCHOLATE-SOLUBIL-
ZED RAT LIVER AND HEPATOMA PLASMA MEMBRANES AND THE
ORPHOLOGICAL APPEARANCE OF THE PREPARATIONS.

(E.)
mmelot, P. (Netherlands Cancer Inst., Amsterdam),
. A. Feltkamp and H. Vaz Dias. *Biochem Biophys Acta*
11(1):43-55, 1970.

lasma membranes from rat livers were isolated, frac-
ioned by density gradient centrifugation and analyzed
or protein, phospholipid P^8 and enzyme activity.
he pellets (105,000 x g x 2 hr) of deoxycholate-
olubilized liver plasma membranes contained 28.3%
f the total protein and 23.0% phospholipid (super-
atant comprising the difference), while 49.1% of
he total protein and 26.7% phospholipid was found
n the comparable fractions of hepatoma-484 membranes.
fraction of *d* 1.10 to 1.12 was found to contain the
reatest amount of ATPase activity and phospholipid
f the pellets. Hepatoma-484 membranes revealed a
arked difference in the greater amount of sediment-
ble protein. Nucleotidase activity was found to
e lower in the hepatoma supernatant fraction (19.1
o 21.3 µmoles P$_i$) compared to the corresponding
iver fraction (45 to 55 µmoles P$_i$). A lower specific
TPase activity was also seen in the hepatoma frac-
ions. Tight junctions were revealed by electron microscopy in the most readily sedimenting fraction of liver membranes and basic organizational differences between hepatoma and normal liver membranes were found.

6293 PARACRYSTALLINE INCLUSION BODIES IN THE MITOCHONDRIA OF HUMAN LIVER PARENCHYMAL CELLS: ELECTRON MICROSCOPIC AND HISTOCHEMICAL STUDIES.

(Ger.) Themann, H. (Inst. Med. Phys. Wilhelms U., Munster, Germany) and D. B. Von Bassewitz. *Cytobiologie* 1(2):135-151, 1969.

Paracrystalline inclusion bodies found in mitochondria of about 35% of 230 human liver biopsies were studied using electron microscopy and histochemical techniques. The inclusions had a polyhedric shape formed by filaments with an average diameter of 95 Å, arranged in rows with an average distance 60 Å apart. Three or four rows seemed organized in a group which were separated by about 125 Å. The inclusion bodies showed a high cytochrome oxidase activity which was demonstrated with diaminobencidine. No relationship between the occurrence of these inclusion bodies in mitochondria and clinical and pathological findings could be demonstrated.

6294 ELECTRON MICROSCOPE STUDIES ON THE RELEASE OF HISTAMINE FROM RAT PERITONEAL MAST CELLS.

(E.) Yamasaki, H. (Okayama U. Med. Sch., Japan), T. Fujita, Y. Ohara and S. Komoto. *Arch Histol Jap* 31(3-4):393-408, 1970.

The effects of histamine-releasing agents and of rabbit anti-rat serum on the mast cells in rat peritoneal fluid were studied by electron microscopy, and the release of histamine was measured by bioassay, using atropinized guinea pig ileum. A peritoneal cell preparation with 5% mast cells was treated with Compound 48/80, sinomenine, toluidine blue, antiserum or the histamine release inhibitor, 2,4-dinitrophenol (DNP). The cells were prepared for electron microscopy with glutaraldehyde and OsO_4 and stained with lead monoxide or lead acetate. Three morphological changes in the mast cell accompany the release of histamine: degranulation, vacuolation, and altered structure of the vacuoles. Treatment with compound 48/80 at a dose of 0.1 µg/ml caused a swelling of the mast cell granules, a widening of the perigranular space in several cells, but no degranulation. At this low dose, histamine release from the mast cells was 38% of the total histamine release, compared with a baseline value of 3% release with no treatment. Moderate doses (1.0 to 5.0 µg/ml) produced increasing development of honeycombed perigranular vacuoles in the cytoplasm with degranulation in cells forming large peripheral vacuoles and histamine release at 5.0 µg/ml was 90% of the total. Treatment with toluidine blue (50 µg/ml) and with sinomenine (500 µg/ml) produced similar morphologic effects, and histamine release by these compounds ranged from 72 to 76% of the total. A large dose of compound 48/80 (100 µg/ml) produced numerous large vacuoles, but the majority of the granules were neither discharged nor swollen; histamine release was measured as 91% of the total. Anti-rat serum (10% V/V) caused a greater swelling of the granules and a greater vacuolation than did the histamine releasing agents, and resulted in a 86% histamine release. Pretreatment with 10^{-4} M DNP inhibited the cytological changes induced by compound 48/80.

6295 RAT LIVER PLASMA MEMBRANES IN ESSENTIAL FATTY ACID DEFICIENCY.

(E.) Chandrasekhara, N. (Central Food Technol. Res. Inst., Mysore, India) and K. A. Narayan. *J Nutr* 100(4):477-480, 1970.

The effect of essential fatty acid deficiency on rat liver plasma membranes with particular reference to marker enzyme activity and lipid and fatty acid composition was investigated. Membranes from deficient animals showed a lower 5'-nucleotidase activity (control 4; treatment 22.1 U/hr), but there was no difference in the Mg^{2+}-Na^{+}-K^{+}- ATPase activity between normal and deficient membranes. The cholesterol content of deficient membranes was lower (control 15.7; treatment 10.2% of total lipid) than that of the normal membranes, whereas the amount of total lipids and phospholipids was unaltered. There was a marked decrease in the 18:2 and 20:4 (control 15.0, 21.4%; treatment 4.5, 9.7%, resp.) and an increase in the 16:1, 18:1 and 20:3 fatty acids (control 2.0, 12.7, 0%; treatment 7.3, 20.5, 13.2%, resp.) of the deficient membranes as compared with membranes of normal rats. The marked alteration in the fatty acid composition and consequent changes in membrane configuration may be associated with a slight decrease in cholesterol content of the membranes.

6296 THE CHARACTERIZATION OF RAT INTESTINAL AMYLASE.

(E.) Alpers, D. H. (Washington U. Sch. Med., St. Louis, Mo.) and M. Solin. *Gastroenterology* 58(6):833-842, 1970.

An intestinal amylase was isolated from the brush border in the rat and characterized. This amylase was not inactivated at temperatures up to 65° C., was not chloride-activated, had a pH optimum of 5.5, was trypsin sensitive, had a Km of 0.02 M (moles of glucosidic bonds/l) with starch as substrate and 0.12 M with maltotetrose as substrate, and was indistinguishable from heat-stable maltase (polyacrylamide gell electrophoresis). Amylase activity in the supernatant fraction (105,000x *g*) of intestinal homogenates was determined to be pancreatic in origin by comparison in animals with bile duct fistulae or ligations and was difficult to remove so that heat inactivation (55 to 65° for pancreatic amylase) or another method must be used to measure pancreatic contamination.

6297 MICROSCOPIC INVESTIGATIONS OF ALTERATIONS IN KUPFFER CELLS AFTER ERYTHROPHAGOCYTOSIS.

(Ger.) Korb, G. (Path. Inst. U. Marburg, Germany) and G. Muhlenberger. *Virchow Arch Zellpath* 5(3):268-276, 1970.

Injection of pyrogallol (20 mg/100 g i.p.) in rats induced pronounced phagocytosis of erythrocytes by the Kupffer cells of the liver. The 27 animals which survived the initial injection of pyrogallol were sacrificed 4, 12, 24 and 48 hr and 3, 4, 5, 10 and 17 days later. At 4 hr after injection, many erythrocytes were present in the sinuses and Kupffer cells. After 24 hr, the Kupffer cells contained not only disintegrating erythrocytes and iron pigment granules but also an initially unpigmented fluorescent material with a PAS-positive reaction. This material became pigmented and seems to be identical with ceroid. After phagocytosis of erythrocytes, some of the Kupffer cells became necrotic and resembled hyaline necrosis of single liver cells or so-called Councilman bodies.

6298 BINDING OF CORTICOSTERONE IN RAT LIVER.

(E.) Snart, R.S. (Dept. Zool., U. Sheffiel England), N.N. Sanyal and M.K. Agarwal. *J Endocr* (2): 149-158, 1970.

The binding characteristics of corticosterone by rat liver was studied by a displaceable binding technique The binding of corticosterone to protein fractionated by gel filtration and density gradient centrifugation was carried out as a preliminary determination of the nature of the binding sites. Analysis of Scatchard plots obtained from binding studies showed 3 types of binding sites for corticosterone in rat liver with characteristic association constants at 0° of $K_1 = 1.2 \times 10^{10}$, $K_2 = 1 \times 10^{8}$ and $K_3 = 1 \times 10^{4}$ 1 /mole. Percentage displacement of corticosterone from the nuclear fraction did not differ significantly from that from tissue or the mitochondrial-microsomal fraction. The K_1 and K_2 sites persisted in separated buffer-soluble fractions but were destroyed on mild heating leaving only the K_3 sites. The rate of uptake of corticosterone by tissue is probably determined by diffusion, which would account for the time lag observed in the small pieces of liver used.

6299 AUERBACH'S PLEXUS OF MAMMALS AND MAN: ELE TRON MICROSCOPIC IDENTIFICATION OF THREE DIFFERENT TYPES OF NEURONAL PROCESSES IN MYENTERIC GANGLIA OF THE LARGE INTESTINE FROM RHESUS MONKEYS, GUINEA-PIGS AND MAN.

(E.) Baumgarten, H. G. (Dept. Neuroanat., U. Hamburg, Germany), A. F. Holstein and C. Owman. *Z Zellforsch* 106(3):376-397, 1970.

Biopsy specimens from corresponding parts of human and mammalian (rhesus monkeys and guinea pigs) large intestine were used for the electron microscopic study of the myenteric ganglia from Auerbach's plexu Three different types of neuronal processes could be distinguished in the myenteric neuropil according to the size, appearance and commutual proportion of vesicles present in axonal varicosities, and their ability to accumulate exogenous 5- and 6-hydroxydopamine and 5-hydroxydopa. Axonal enlargements containing a major population of small electron lucent "synaptic" vesicles (350 to 600 Å) existed together with a small number of membrane-bound, opaque granul (800 to 1,100 Å) which were identified as "cholinergic" axons. The boutons established synaptic contac with dendritic processes of intrinsic nerve cell bodies; membrane specializations were found at the pre- and postsynaptic sites. Axonal beads of large diameter, containing an equal amount of large granul vesicles (850 to 1,600 Å) and small, faintly opaque

esicles (400 to 600 Å) were seen. Neuronal process
ıvolving varicosities of axons equipped with small
00 to 600 Å) empty or granular vesicles, medium-
.zed (500 to 900 Å) vesicles with high electron
ense cores and occasional large (900 to 1,300 Å)
anular vesicles were also present. Pretreatment
ith 5-hydroxydopamine increased the electron density
ı medium sized granular vesicles and in some large
anular vesicles. Degenerative changes in the vari-
ɔsities of this type of neuron resulted from pre-
eatment with 6-hydroxydopamine. Both catecholamine
ıalogues reduced neuronal noradrenaline in the large
ıtestine, as demonstrated by fluorescence histo-
ıemistry and fluorimetric determinations. The ultra-
ructural features of these varicosities and their
eaction to 5- and 6-hydroxydopamine indicated that
ıey belong to adrenergic sympathetic nerves. No
embrane specialization could be detected at sites
f close contact of the adrenergic boutons with
endrites and cell bodies of intrinsic nerve cells.

00 CYTOCHROME b_5 AND CO-BINDING CYTOCHROMES
IN THE GOLGI MEMBRANES OF MAMMALIAN
VERS. *(E.)* Ichikawa, Y. (Osaka U. Med. Sch.,
aka, Japan), and T. Yamano. *Biochem Biophys*
s Comm 40(2):297-305, 1970.

udies were made of the electron transport system
hepatic microsomes in which the Golgi and plasma
mbranes and the smooth- and rough-surfaced micro-
mes were separated from the whole microsomal frac-
on of normal rabbit liver. The Golgi membranes
ich account for 5% of total microsomal protein
d a similar cytochrome b_5 and lower cytochrome
450 content compared to smooth- and rough-surfaced
crosomal membranes. Pretreatment with pheno-
rbital induced cytochrome P-450 5-fold in the
lgi membranes and 2-fold in the microsomal mem-
anes. However, pretreatment with 3-methylcholan-
rene resulted in the induction of cytochrome
448 in the Golgi membranes and in the smooth-
d rough-surfaced microsomes.

01 ISOLATION AND CHARACTERIZATION OF *IN*
VITRO RADIOACTIVELY LABELED SH-PROTEINS
OM RAT LIVER MITOCHONDRIAL MEMBRANES. *(E.)*
mmer, G. (Inst. Vegetative Physiol, U. Frank-
rt, Germany). *FEBS Letters* 9(2):108-112, 1970.

attempt is made at localization of sulfhydryl
oups in liver mitochondrial membrane proteins
use of S^{35}-labeled maleimide and isolation and
beling of the F_1-ATPase from sonicated mitochon-
ia. After appropriate incubation and gel filtra-
on, the radioactive peak was dialyzed and cellulose
etate electrophoresis performed. Radioactivity
edominated in the basic structural proteins and
t significantly in the oligomycin insensitive
Pase protein. The maleimide effects of mitochon-
ial ATPase appears to be mediated through action
structural proteins.

02 SELECTIVE REMOVAL OF RIBONUCLEIC ACID
RESPONSIBLE FOR HYPERBASOPHILIA IN RAT
VER PARENCHYMA DURING AZO DYE CARCINOGENS. *(E.)*
Briere, N. (Fac. Med. U. Sherbrooke, Quebec, Canada).
J Histochem Cytochem 18(7):498-503, 1970.

Male rats (200 g) were fed a low protein diet containing 0.06% of the azo dye 4-dimethylaminoazobenzene. Possible preneoplastic areas and hepatomas of serial liver sections showed intense staining with toluidine blue and bromophenol blue. Less intense staining was revealed in control sections of the cytoplasmic proteins of the hyperbasophilic cells. RNA was extracted from areas of increased basophilia in hyperbasophilic foci and hepatomas by treating for 4 to 5 min with solutions containing 1 µg/ml ribonuclease without alteration of the cytoplasmic hyperbasophilia as judged from stain intensity. It was found that the RNA of these areas was more susceptible to mild ribonuclease treatment than normally occurring RNA.

6303 A FACTOR OF PROTEIN CHARACTER IN RAT LIVER INHIBITING LIPASE ACTIVITY OF RAT PANCREAS. *(E.)* Machovich, R. (Semmelweis U. Med. Sch., Budapest, Hungary), J. Csillag and A. Naray. *FEBS Letters* 9(2):119-120, 1970.

The effect of a component of rat liver homogenate on lipase activity of rat pancreas extracts was studied. The component, which appears to be associated with a protein (estimated molecular weight 100,000), inhibited lipase activity of the pancreas. Inhibitory effect was abolished by trypsin treatment, but not by ribonuclease. Heat treatment at 50° for 5 min destroyed 50% of its activity and at 60° for 5 min destroyed 100% of its activity. The inhibitor factor was not contaminated by trypsin or other proteolytic activities in quantities which would depress lipase activity. Inhibitor factor was apparently specific for lipase; amylase and trypsin were not inhibited by this factor. Since the lipase inhibitor was able to relieve the hemolytic effect of lipase, it appears to play an important role in the protection of the organism and its function may be more significant in cases of some pathological process.

6304 DIFFERENTIATION OF IMMATURE MUCOUS CELLS INTO PARIETAL, ARGYROPHIL AND CHIEF CELLS IN STOMACH GRAFTS. *(E.)* Matsuyama, M. (Aichi Cancer Ctr. Res. Inst., Nagoya, Japan) and H. Suzuki. *Science* 169(3943):385-387, 1970.

Microscopic and submicroscopic techniques were used to determine the origin of cell types in gastric mucosal epithelium in mice. Secretory granules were noted in the mucous cells and the fundic glands contained numerous parietal cells with well-developed intracellular canaliculi. Young mice (less than 24 hr old) were subcutaneously grafted with the glandular portion of stomach of their littermates. Examination of the graft tissue revealed that all epithelial cells were positive for the periodic acid-Schiff reaction and that only mucous cells survived as epithelial cells. Immature mucous cells were found to differentiate into mature mucous, parietal and chief cells. After formation of a thin regenerating epithelial layer of only mucous cells, pits and glands differentiated and parietal, argyrophil and chief cells subsequently formed in that order. The immature mucous cells of mice are concluded to be totipotent.

6305 STUDIES ON VITAMIN E ACTION: PEROXIDATION INHIBITION IN STRUCTURAL PROTEIN-LIPID MICELLE COMPLEXES DERIVED FROM RAT LIVER MICROSOMAL MEMBRANES. *(E.)* Tinberg, H. M. (Dept. Zool., U. California, Los Angeles) and A. A. Barber. *J Nutr* 100(4):413-418, 1970.

A system consisting of a complex formed from rat liver microsomal structural protein and lipid micelles was used to examine the binding of microsomal structural protein with antioxidants and to relate antioxidant activity to this binding. The antioxidant activities of vitamin E and butylated hydroxyanisole on microsomal suspensions were also examined. Vitamin E and butylated hydroxyanisole inhibited lipid peroxidation in microsomal suspensions and in the test system consisting of microsomal structural protein and lipid micelles. A common inhibitory mechanism was suggested by the similarity of the 2 systems in their response to the 2 inhibitors. The peroxidation in the complex resulted in marked decreases in arachidonic, oleic and linoleic acid (100, 31, 63%, resp.) and these decreases were completely inhibited by 250 μg of vitamin E and 4 to 5 μg of butylated hydroxyanisole. The structural protein was bound to vitamin E but not to the synthetic antioxidant (less than 1%), suggesting that the binding may involve the hydrocarbon chain of vitamin E. Vitamin E inhibition of peroxidation in the complex was correlated with the amount of the antioxidant bound, whereas inhibition by butylated hydroxyanisole was not. These binding differences suggest a possible difference in the physiological action of vitamin E and butylated hydroxyanisole.

6306 THE DEPLETION OF THE GRANULES OF ARGYROPHIL CELLS OF DOG DUODENUM BY RESERPINE. *(E.)* Singh, I. (Med. Coll. Rohtak, India). *Z Zellforsch* 107(1):111-118, 1970.

The effect of reserpine on argyrophil cell granules of dog duodenum was investigated by light microscopy. Of 8 dogs, 3 were control, 3 received 5 mg/kg, 1 received 2.5 mg/kg and 1 received 1 mg/kg reserpine. Except in 1 dog a dose of 5 mg/kg caused a complete disappearance of argentaffin and argyrophil cells. A dose of 1 mg/kg has again markedly depleted the argentaffin cells (number of cells/high power field, control 6.5; treatment .50) and there was a slight but noticeable effect on the mean level of argyrophil cells (control 21.2; treatment 16.4). The depletion of argyrophil cells appears to be dose-related and in addition to the depletion in number, the argyrophil cells of reserpine treated animals show considerable reduction in size and in density of granules.

6307 DOLICHOL MONOPHOSPHATE GLUCOSE: AN INTERMEDIATE IN GLUCOSE TRANSFER IN THE LIVER. *(E.)* Behrens, N. H. (Campomar Found., Inst. Invest. Biochem., Buenos Aires, Argentina) and L. F. Leloir. *Proc Nat Acad Sci* 66(1):153-159, 1970.

The physical and chemical properties of partially purified acceptor-lipid from pig liver was compared with that of synthetic dolichol phosphate to establish their identity. Incubation of rat liver microsomes with UDPG labeled in the glucose moiety and acceptor lipid led to the appearance of radioactivity in the chloroform-soluble fraction (3.7 mole) Glucosylation was proportional to the amount of acceptor lipid added. The glucosylated acceptor lipid was acid labile and yielded 1,6-anhydroglucosan after alkaline treatment (45 min. at 100°C with 1N NaOH in aqueous *n*-propanol). Incubation of the glucosylated acceptor lipid with microsomes at 30° in the presence of 1.3% Triton X-100 yielded a glycoprotein which was subsequently hydrolyzed to glucose. The compound obtained by the chemical phosphorylation of dolichol appears to be the same as the acceptor lipid isolated from liver in giving the same results with the above reactions and having the same R_f value on thin-layer chromotography

6308 ULTRASTRUCTURAL LOCALIZATION OF CARBONIC ANHYDRASE IN RAT STOMACH PARIETAL CELLS. *(E.)* Cross, S. A. M. (Res. Inst., Smith Kline and French Lab., Hertsfordshire, England). *Histochemie* 22(3):219-225, 1970.

Carbonic anhydrase (CA) was localized (by the floatin incubation method of Hausler) in the canaliculi of the parietal cells of the stomach of the rat with the optical microscope and a modification of the method was used for demonstrating CA with the electron micr scope. The Hausler technique gave negative results with acetazolamide treatement (1 x 10^{-3} M to 5 x 10^{-} heating at 100°C for 3 min, or omission of substrate from the medium. Hansson's modification was satisfactory only if the sulfuric acid concentration was lowered 0.5 to 0.05 M, the cobalt sulfate concentration raised from 0.002 to 0.0025 M, or the temperatu raised from 22° to 37°C. For the electron microscop a mixture of 4% formaldehyde and 0.5% glutaraldehyde in Millonig's buffer was used for fixation followed by a brief post-fixation with osmium tetroxide and rapid dehydration in absolute ethanol or acetone, and the CA activity resulted in a cobalt sulfide deposit on the outside of the microvilli in the canaliculi of the parietal cells.

6309 ISOELECTRIC FOCUSING OF HUMAN LIVER ALKALINE PHOSPHATASE. *(E.)* Latner, A. L. (Roy. Victoria Infirm., Newcastle, England), M. E. Parsons, and A. W. Skillen. *Biochem J* 118(2):299-302, 1970.

The isoelectric focusing column technique was appli to human liver alkaline phosphatase in a sucrose d sity gradient with LKB ampholine as carrier ampholy Enzyme activity of alkaline phosphatase in 50 g sp imens of human liver was assayed in p-nitrophenyl phosphate substrate. When alkaline phosphatase pre arations were diluted 5- and 10-fold with water or with 1% ampholine, the enzyme was inhibited by 75%

ldition of 0.5 mM Zn^{2+} to the phosphatase preparation luted with 1% ampholine reversed the inhibition of osphatase activity, but addition of 0.1-5.0 mM Mg^{2+} d no effect on reversal of inhibition. A reacti- tion procedure was devised to counter the chelating operties of the ampholytes and the pH gradient. actions of the alkaline phosphatase preparation re applied to the electrofocusing column and 3 ml actions were collected (all with a pH below 7.0) d were reactivated and phosphatase activities as- yed. A peak containing 64% of the phosphatase tivity occurred at pH 3.9. The procedure was peated after 6 months with the same liver prep- ation (stored at -20°C) and the isoelectric point s again pH 3.9, with a smaller peak at pH 4.0.

10 THE DISTRIBUTION OF WATER-SOLUBLE BLOOD GROUP A ANTIGEN IN THE HUMAN LARGE INTESTINE: MOSAIC PATTERN. *(E.)* Sanders, E. M. (U. Alabama, rmingham) and S. P. Kent. *Lab Invest* 23(1):74-78, 70.

e distribution of water-soluble blood group A tigen was studied using an indirect fluorescent tibody technique in tissue taken from multiple vels of the large intestine of 30 human blood type secretors and non-secretors, ranging in age from illborn fetus to 67 years. Twenty-eight subjects re blood type A$_1$, one subject was type A$_1$B and e was type O and was used as a control. Based on e distribution of A antigen in saliva or in the odenum, 20 of the subjects were classified as cretors and 9 were nonsecretors. The presence of antigen was demonstrated in the intestinal sections treating tissues with fluorescein-labeled anti- man IgG and examination with a Zeiss fluorescence it. No A antigen was demonstrated in the large testine of the nonsecretors, while some goblet lls in all secretors contained A antigen. Goblet lls in the cecum and in the ascending colon of cretors contained A antigen regardless of the age the patient, while goblet cells in the distal rge intestine contained no antigen but did contain cin with histochemical properties similar to jacent goblet cells containing A antigen. The stribution of A antigen from the cecum to the anus s that of a progressively decreasing number of blet cells containing A antigen, and produced a saic pattern mostly in the terminal large intestine all age groups, but there was a higher percentage A antigen containing cells in fetuses than in ults. The mosaic staining pattern indicates that early fetal life, mucin is synthesized by some blet cells in the large intestine which do not have antigen determinants, while adjacent histochemically milar cells do contain A antigen. The scarcity of ter soluble A antigen in adult distal large intes- ne is possibly due to hydrolytic action by bacterial zymes.

11 THE ISOLATION OF POLYSOMES FROM RAT LIVER: CONTAMINATION OF POLYSOMES BY RIBONUCLEO- OTEIN OF NUCLEAR ORIGIN. *(E.)* Olsnes, S. (Norsk dro's Inst. Cancer Res., Oslo). *Biochem Biophys ta* 213(1):149-158, 1970.

6312 PROPERTIES OF RAPIDLY LABELED DEOXYRIBONUCLEIC ACID FRAGMENTS ISOLATED FROM THE CYTOPLASM OF PRIMARY CULTURES OF EMBRYONIC MOUSE LIVER CELLS. *(E.)* Williamson, R. (Beatson Inst. Cancer Res., Glasgow, Scotland). *J Molec Biol* 51(1):157-168, 1970.

6313 EFFECT OF NEGATIVE STAINS USED IN ELECTRON MICROSCOPY ON SOME BIOCHEMICAL PARAMETERS OF THE MITOCHONDRIAL ACTIVITY. *(E.)* Muscatello, U. (Inst. Gen. Path., U. Modena, Italy) and V. Guarriero-Bobyleva. *J Ultrastruct Res* 31(3-4):337-348, 1970.

6314 MICROSCOPIC STRUCTURE OF PYLORIC EPITHELIUM OF THE CAT. *(E.)* Johnson, F. R. (London Hosp. Med. Coll., England) and R. M. H. McMinn. *J Anat* 107(1):67-86, 1970.

6315 PRESENCE OF APO-CYTOCHROME b_5 IN MICROSOMES FROM RAT LIVER. *(E.)* Negishi, M. (Inst. Protein Res., Osaka U., Japan) and T. Omura. *J Biochem* 67(5):745-747, 1970.

6316 HISTOCHEMICAL STUDY ON RAT LIVER GLYCOGEN DURING DAB CARCINOGENESIS. *(E.)* Forget, A. (Inst. Cancer, Montreal, Canad.), and R. Daoust. *Int J Cancer* 5(3):404-409, 1970.

6317 SIMULTANEOUS ASSAY OF RNA POLYMERASE I AND II IN NUCLEI ISOLATED FROM RESTING AND GROWING RAT LIVER WITH THE USE OF α-AMANITIN. *(E.)* Novello, F. (Inst. Gen. Path. U. Bologna, Italy) and F. Stirpe. *FEBS Letters* 8(1):57-60, 1970.

6318 SOME OBSERVATIONS ON THE ULTRASTRUCTURE OF THE HEPATOCYTE IN THE METAMORPHOSING TADPOLE. *(E.)* Spiegel, E. S. (Dept. Biol. Sci., Dartmouth Coll., Hanover, N. H.) and M. Spiegel. *Exp Cell Res* 61(1):103-112, 1970.

6319 LIVER FIXATION FOR ELECTRON MICROSCOPY BY MEANS OF TRANSPARENCHYMAL PERFUSION WITH GLUTARALDEHYDE. *(E.)* Sandstrom, B. (Dept. Human Anat., U. Uppsala, Sweden). *Lab Invest* 23(1):71-73, 1970.

6320 THE TERMINATION OF HEPATIC ARTERIOLES AND THE FUNCTIONAL UNIT OF THE LIVER AS DETERMINED BY MICROSCOPY OF THE LIVING ORGAN. *(E.)* Bloch, E. H. (Sch. Med., Case Western Reserve U., Cleveland, Ohio). *Ann NY Acad Sci* 170(1):78-87, 1970.

6321 A STUDY OF THE NORMAL LIVERS USING TECHNETIUM 99 m SULFIDE COLLOID AND SCINTILLATION CAMERA. *(E.)* Chen, C. C. (Coll. Med., Natl. Taiwan U.). *J Formosa Med Ass* 69(2):64-71, 1970.

6322 VASCULAR ANATOMY OF THE LIVER. *(E.)* Healey, J. E., Jr. (M. D. Anderson Hosp., Houston, Texas). *Ann NY Acad Sci* 170(1):8-17, 1970.

6323 FINE STRUCTURAL CHANGES IN LIVER CELLS OF *RANA CATESBEIANA* DURING NATURAL METAMORPHOSIS. *(E.)* Bennett, T. P. (Biol. Lab., Harvard U., Cambridge, Mass.) and J. S. Glenn. *Develop Biol* 22(3):535-560, 1970.

6324 CHROMATOGRAPHIC AND ELECTROPHORETIC EVIDENCE FOR SEVERAL SUGAR DEHYDROGENASES IN MAMMALIAN LIVER. *(E.)* Ureta, T. (Fac. Med. U. Chile, Santiago) and J. Radojkovic. *FEBS Letters* 9(2):57-60, 1970.

6325 A REDOX PIGMENT BOUND TO ACYLATED PROTEIN FROM RAT LIVER MITOCHONDRIA. *(E.)* Ozawa, T. (Fac. Med. U. Nagoya, Japan), N. Yamanaka, M. Hagihara and K. Yani. *J Biochem* 67(5):737-739, 1970.

6326 STUDIES ON THE RIBOSOMAL FERRITIN FROM NORMAL, CIRRHOTIC AND CANCEROUS HUMAN LIVERS. *(Ger.)* Domschke, W. (Physiol. Chem. Inst. U. Gottingen, Germany), J. G. Meyer-Bertenrath, D. Demmer and G. F. Domagk. *Z Klin Chem* 8(3):273-277, 1970.

6327 GLYCERALDEHYDEPHOSPHATE DEHYDROGENASE FROM LIVER: I. ISOLATION AND CHARACTERIZATION OF THE BOVINE LIVER ENZYME. *(E.)* Heinz, F. (Med. Coll. Hannover, Germany) and K. D. Kulbe. *Hoppe Seyler Z Physiol Chem* 351(2):249-262, 1970.

6328 DEVELOPMENT OF THE ADRENERGIC INNERVATION AND CHROMAFFIN CELLS IN THE HUMAN FETAL GUT. *(E.)* Read, J. B. (Dept. Zool., U. Melbourne, Parkville, Victoria, Australia) and G. Burnstock. *Develop Biol* 22(3):513-534, 1970.

6329 CIRCULAR DICHROISM OF CALF LIVER NUCLEOHISTONE. *(E.)* Simpson, R. T. (Natl. Inst. Arthritis Metab. Dis., Nat. Inst. Hlth, Bethesda, Md.) and H. A. Sober. *Biochemistry* 9(16):3103-3109, 1970.

6330 EXAMINATION OF HISTOCHEMICAL TECHNIQUES FOR DEMONSTRATING HISTAMINE IN MAST CELLS. *(E.)* Inoue, Y. (Sch. Med. Keio U., Tokyo, Japan) and K. Shimai. *Arch Histol Jap* 31(3-4):409-419, 1970.

6331 PROPERTIES OF LIVER GLYCOGEN ISOLATED IN DENSITY GRADIENTS OF SODIUM IOTHALAMATE. *(E.)* Scott, R. B. (Med. Coll. Virginia, Richmond) and W. J. S. Still. *Arch Biochem Biophys* 139(1):87-92, 1970.

6332 THE TERMINAL ILEUM: ANATOMICAL AND SURGICAL STUDY. *(Fr.)* Cabanie, H. (Fac. Med. Bordeaux, France) and J. L. Plessis. *J Chir* 98(3): 187-210, 1970.

6333 GASTROINTESTINAL HORMONES AND THEIR CLINICAL SIGNIFICANCE. *(Ger.)* Diwok, K. (Med. Clin. U. Rostock, Germany). *Z Ges Inn Med* 25(8):330-337, 1970.

6334 ULTRASTRUCTURE OF OVINE RUMINAL EPITHELIUM AND LOCALIZATION OF SODIUM IN THE TISSUE. *(E.)* Henrikson, R. C. (Coll. Physicians Surgeons, Columbia U., New York, N. Y.). *J Ultrastruct Res* 30(3-4):385-401, 1970.

6335 PURIFICATION AND PROPERTIES OF THE NICOTINAMIDE-ADENINE DINUCLEOTIDE PHOSPHATE-DEPENDENT ISOCITRATE DEHYDROGENASE FROM PIG LIVER CYTOPLASM. *(E.)* Illingworth, J. A. (Dept. Biochem., U. Cambridge, Eng.), and K. F. Tipton. *Biochem J* 118(2) 253-258, 1970.

6336 ISOZYMES OF RAT LIVER MITOCHONDRIAL MALATE DEHYDROGENASE: EVIDENCE FOR THE EXISTENCE OF NONIDENTICAL SUBUNITS. *(E.)* Mann, K. G. (Dept. Biochem., U. Minnesota, St. Paul) and C. S. Vestling. *Biochemistry* 9(15):3020-3025, 1970.

6337 MOLECULAR WEIGHTS, ASSOCIATION, AND FRICTIONAL RESISTANCE OF BOVINE LIVER GLUTAMATE DEHYDROGENASE AT LOW CONCENTRATIONS: EQUILIBRIUM AND VELOCITY SEDIMENTATION, LIGHT-SCATTERING STUDIES, AND SETTLING EXPERIMENTS WITH MACROSCOPIC MODELS OF THE ENZYME OLIGOMER. *(E.)* Reisler, E. (Weizmann Inst. Sci., Rehovot, Israel) J. Pouyet and H. Eisenberg. *Biochemistry* 9(15):3095-3102, 1970.

6338 ISOLATION AND CHARACTERIZATION OF ACIDIC LIPOPROTEIN IN RENAL AND HEPATIC LYSOSOMES *(E.)* Goldstone, A. (Northwestern U. Med. Sch., Chicago, Ill.), E. Szabo and H. Koenig. *Life Sci* 9(11):607-616, 1970.

6339 THE EFFECT OF 17α-ETHINYL-SUBSTITUTED STEROIDS ON ADENOSINE TRIPHOSPHATASES OF RAT LIVER PLASMA MEMBRANE. *(E.)* Heikel, T. A. J.

(Med. Sch., U. Leeds, England) and G. H. Lathe. *Biochem J* 118(1):187-189, 1970.

6340 DECREASED STABILITY OF RAT LIVER POLYRIBOSOMES AFTER GEL FILTRATION ON SEPHADEX. *(E.)* Eker, P. (Norwegian Radium Hosp., Oslo, Norway), R. Weidenmuller and A. Pihl. *FEBS Letters* 9(1):17-19, 1970.

6341 NUCLEOTIDE SEQUENCE SPECIFICITIES OF GUANYLATE RESIDUE-SPECIFIC RNA METHYLASES FROM RAT LIVER. *(E.)* Kuchino, Y. (Natl. Cancer Ctr. Res. Inst., Tokyo, Japan), and S. Nishimura. *Biochem Biophys Res Comm* 40(2):306-313, 1970.

6342 EXPERIMENTAL MESENTERIC MICROANGIOGRAPHY USING AN X-RAY SENSITIVE VIDICON. *(E.)* Siew, F. P. (New York U. Med. Ctr., New York), S. Siew, S. Schwartz and N. E. Chase. *Invest Radiol* 5(3):175-180, 1970.

6343 DEGRADATION OF DNA IN ISOLATED LIVER NUCLEI CAUSED BY MECHANICAL FORCES AND ENDOGENOUS ENZYME. *(E.)* Hyodo, M. (Fac. Sci., Tokyo Kyoiku U., Japan) and T. Ono. *Biochim Biophys Acta* 213(1):228-230, 1970.

6344 HISTOCHEMICAL STUDIES OF THE ANAL GLANDS OF THE RABBIT. *(Ger.)* Bertollini, R. (Anat Inst. Karl Marx U., Leipzig, Germany), R. Pabst and W. Gabler. *Jahrbuch Morph Mikroskop Anat* 114(3):329-336, 1970.

6345 CHANGES OF CHROMATIN STRUCTURES IN LIVER CELL NUCLEI OF RATS AND MICE AFTER SINGLE AND REPEATED INJECTIONS OF ETHIONINE. *(Ger.)* Muller, H. A. (Path. Inst. U. Wurzburg, Germany) and A. Theodossiou. *Virchow Arch Zellpath* 5(4):314-325, 1970.

6346 HISTOCHEMICAL DATA IN THE JEJUNAL MUCOSA IN MAN: A STUDY OF SUCTION BIOPSY SPECIMENS. *(Fr.)* Chamlian, A. (C. H. U. Nord, Marseilles, France), J. Lafon, A. M. Autard, J. Delmont and H. Monges. *Marseilles Med* 107(4):321-324, 1970.

6347 NORMAL VALUES OF THE TRANSAMINASES AND THEIR CORRELATION TO THE HISTOLOGICAL PICTURE OF THE LIVER. *(Ger.)* Dehnhardt, H. G. (no affil) and H. Fakhoury. *Deutsch Med J* 21(9):600-606, 1970.

● P:Absorp (6377)
● P:Secr:Stom (6397)(6399)(6404)
● P:Secr:Panc (6410)(6414)(6418)
● P:Secr:Hepatobil (6420)(6427)(6428)(6433)(6436)(6437)(6443)(6445)(6446)(6452)(6458)(6461)(6468)(6469)(6474)(6477)(6481)(6482)(6483)(6485)(6491)
● P:Secr:Int (6492)(6496)
● P:Gen (6501)
● Diagproc (6521)(6545)(6546)(6565)(6593)(6607)(6609)(6628)(6672)(6686)(6687)(6731)(6732)
● D:Livbil (6761)(6765)(6769)(6771)(6774)(6781)(6790)(6795)(6798)(6802)(6813)(6817)(6818)(6821)(6823)(6827)(6828)(6829)
○ D:Livbil:A.Nonv.Hep (6830)(6831)(6834)(6849)(6853)
○ D:Livbil:C.Hep (6869)(6870)
○ D:Gen (6928)(6929)(6939)(6979)(6988)

ABSORPTION—EXCRETION—TRANSPORT

6348 EFFECTS OF VITAMIN E AND ESSENTIAL FATTY ACID DEFICIENCIES ON THE INTESTINAL TRANSPORT OF L-VALINE AND α-METHYL-D-GLUCOSIDE IN THE RAT. *(E.)* Imami, R. H. (Methodist Hosp., Peoria, Ill.), S. Reiser and P. A. Christiansen. *J Nutr* 100(1):101-109, 1970.

Dietary vitamin E and essential fatty acid deficiencies were induced in male rats (40 to 50 g) in order to correlate the functional role of lipid-soluble factors in membranes (using *in vitro* inverted sac technique) with the requirement for intestinal transport of amino acids (valine) and sugars (methyl-D-glucoside). The animals received a diet deficient in vitamin E or essential fatty acids or a deficient diet supplemented with *Torula* yeast and selenium, while control animals received a nutrient-fortified diet. Essential fatty acid deficiency was observed by the growth changes and was confirmed by chromatographic and photometric analysis of intestinal mucosal scrapings and liver specimens. Transport mechanisms were studied by monitoring to measure radioactivity distribution of labeled l-valine and methyl-D-glucoside. In a 12-week observation period the control rats gained an average of 300 g while the vitamin E-deficient rats gained only 200 g. Vitamin E deficiency decreased all parameters of valine transport, but did not affect transport of methyl-D-glucoside. Net transport of 3 mM valine (μmoles/500 mg tissue wet wt was 5.09 in vitamin E-deficient rats compared with a control value of 8.24; and in Vitamin E-deficient rats supplemented with *Torula* yeast, the transport was 7.45, with a control value of 12.40. Transport of 5 mM methyl-D-glucoside was 7.66 in vitamin E-deficient rats receiving *Torula* yeast, and was 6.43 in rats on the control diet. An essential fatty acid deficiency decreased both amino acid and sugar transport by decreasing the rat transfer from tissue uptake sites to the serosal medium. The net transport of 3 mM valine (μmoles/500 mg) was 4.58 in fatty acid-deficient mice, (8.84 in controls), and transport of 5 mM methyl-D-glucoside was 4.11 in fatty acid-deficient mice (5.60 in controls). Vitamin E seemingly functions at tissue uptake levels of amino acid transport while fatty acids apparently function to maintain an optimum energy supply.

6349 LEUCINE ABSORPTION RATE AND NET MOVEMENTS OF SODIUM AND WATER IN HUMAN JEJUNUM. *(E.)*

Adibi, S. A. (U. Pittsburgh Sch. Med., Pa.). *J Appl Physiol* 28(6):753-757, 1970.

The net absorption or secretion rates of leucine, mannitol, sodium and water were studied during perfusion of jejunal segments (triple-lumen tube positioned in the upper jejunum) of 5 normal adult males with test solutions containing D-mannitol or L-leucine (20 mM) or L-leucine (100 mM) in combination with sodium chloride (140 mM), or L-leucine (20 mM) in combination with D-mannitol (280 mM). With the sodium chloride concentration held constant, net absorption rates of water (μmoles/min/cm) in the same subjects were higher with leucine (120 and 17, resp.) than with mannitol (31 and 6 resp.), although the luminal flow rate (ml/min) was slightly slower during the leucine-saline perfusion (10.7 compared to 13.2). When a large intraluminal concentration of leucine (63.7 mM) was maintained, a net absorption of water and sodium against the plasma to lumen gradient was observed (and sodium absorption was less during perfusion with leucine at 100 mM than at 20 mM). Wide variations (55 and 143 mM) in sodium concentrations within the test segment and net movement of water (either absorption or secretion) did not affect the leucine absorption rate.

6350 THE ROLE OF THE PARATHYROID GLANDS IN THE ABSORPTION OF CALCIUM FROM THE SMALL INTESTINE. *(E.)*

Winter, M. (U. Med. Sch., Budapest, Hungary), E. Morava, G. Simon and J. Sos. *J Endocr* 47(1):65-72, 1970.

The influence of diet on the effects of parathyroidectomy was studied in rat duodenal and jejunal loops. Parathyroidectomy, thyroidectomy or thyroparathyroidectomy was performed surgically and the animals fed on a diet of either normal (0.6%) calcium, high (1.8%) calcium or low (0.1%) calcium. After removal of the glands, intestinal absorption of calcium was studied *in vivo* using Ca^{45}-label. Removal of either parathyroids alone or with thyroidectomy reduced absorption of calcium. Parathyroidectomy alone produced a greater decrease (from 55 to 30%) of administered calcium than the combination (55 to 40%). Ca^{45} label was given intravenously to parathyroidectomized animals to test whether reduced absorption might be due to increased calcium secretion. The results negated this hypothesis, however, for calcium content in the parathyroidectomized rats was 540 cps/min as compared to 780 cps/min in sham-operated control animals. Parathyroidectomy followed by a high calcium diet for 6 weeks revealed a similar degree of calcium absorption in comparison with a control group. Thyroidectomy by itself was also found to decrease calcium absorption although the role of the thyroid in this regard requires further study.

6351 ASYMMETRY OF OSMOTIC FLOW IN FROG INTESTINE: FUNCTIONAL AND STRUCTURAL CORRELATION. *(E.)*

Loeschke, K. (Coll. Med. U. Kentucky, Lexington), C. J. Bentzel and T. Z. Csaky. *Amer J Physiol* 218 (6):1723-1731, 1970.

The asymmetry of osmotic water flow in the adult bullfrog small intestine was investigated by volume flow measurements, transmural potentials and morphological observations. Induction of transmural osmotic volume flow across bullfrog small intestine *in vitro* by pairs of isotonic-hypotonic Na_2SO_4 Ringer solution resulted in flows of different magnitudes depending on the direction. With hypotonic solution in the mucosal and isotonic solution in the serosal fluid compartments, flow rates were 6-fold larger than when solutions were interchanged and flow direction was reversed. This asymmetry or rectification of osmotic volume flow was found by gravimetric measurements and also when flow dependent potential differences across the intestine were recorded (mean -0.17mv). When water moved from mucosa to serosa, time invariant potentials of 7.0-9.0mV, serosal side positive, were measured, whereas opposite movement demonstrated small potential differences (1.0-2.5mV) of opposite sign. Functioning tissue fixed with glutaraldehyde showed widely distended intercellular spaces during the larger mucosal to serosal flow while spaces were closed during the opposite or zero net flow. The asymmetry may be a consequence of different osmotic permeabilities of the individual barriers, located in the epithelial cell layer, involved in transepithelial water flow.

6352 THE EFFECTS OF UNSATURATED DIETARY FATS ON ABSORPTION, EXCRETION, SYNTHESIS AND DISTRIBUTION OF CHOLESTEROL IN MAN. *(E.)*

Grundy, S. M. (Rockefeller U., New York, N. Y.) and E. H. Ahrens, Jr. *J Clin Invest* 49(6):1135-1152, 1970.

The mechanism by which unsaturated fats in the diet lower plasma cholesterol was investigated with cholesterol balance studies in 11 patients with hyperlipoproteinemia (familial hypercholesterolemia or hypertriglyceridemia) fed liquid formula containing low or moderate amounts (46 to 83 mg/day or 457 to 679 mg/day, resp.) of cholesterol. Total plasma cholesterol dropped (range of 39 to 368 mg/day) over periods ranging from 8 to 49 days in 10 of the patie when unsaturated fats replaced saturated fats in the diets while the excretion of neutral steroids genera ly remained unaffected (detection sensitivity analys revealed that the sterol balance method becomes less effective in picking up significant increases in fecal steroids as the period of time over which the change occurs is lengthened); and cholesterol absorption did not change (30 to 40%) in 3 out of 5 patients tested and increased significantly (30 to 45% and 40 to 64%) in 2 patients. The changeover in diet from saturated to unsaturated fats produced no consistent effect on total cholesterol balance (difference between daily intake and excretion) with the differences ranging from a positive 293 to a negative 403 mg/day; and specific activity-time curves of plasma cholesterol following pulse labeling (50-100 μC of cholesterol-4-^{14}C or cholesterol-1,2-^{3}H) showed no change in slope indicating that cholesterol synthesis was not affected by the change in dietary fats. Unsaturated fats may cause a redistribution of cholesterol between plasma and tissue pools.

6353 EFFECT OF AMINO ACIDS ON IRON ABSORPTION FROM A STAPLE VEGETABLE FOOD. *(E.)* Martinez-Torres, C. (Venezuelan Inst. Sci. Res., Caracas) and M. Layrisse. *Blood* 35(5):669-682, 1970.

The effect of fish or amino acids present in fish on iron absorption from vegetable food was investigated using black beans (a staple food consumed in large amounts in Central and South America) as a model. The iron absorption rate in 137 subjects showed an asymmetric distribution. The mean iron absorption was 2.6% and the limit of one standard deviation was from 0.8 to 8.2%. Iron absorption from black beans (2 to 3 mg. Fe) increased about twice when the food was administered with either fish (2.2% to 4.7%) or with amino acids (1.69 to 2.9%) in number and proportion as present in 100 gm of fish. Absorption was not enhanced if the black beans were mixed with either basic, aromatic or aliphatic amino acids (including aspartic and glutamic acid). However, either cysteine plus methionine (3.1% to 8.2%), or cysteine alone (3.7 to 6.9%) enhanced iron absorption from black beans in similar proportion as observed when this food was mixed with fish or total amino acids present in fish. Cysteine may form, in the lumen of the gut, a soluble chelate with iron which facilitates iron absorption.

6354 THE COMPARATIVE TRANSPORT OF K^+ AND Rb^+ IN NORMAL AND MALIGNANT RAT TISSUES *IN VIVO* AND IN LIVER SLICES, DIAPHRAGM, AND TUMOR SLICES *IN VITRO*. *(E.)* Gilbert, I. G. F. (Inst. Cancer Res., Sutton, Surrey, England). *J Membrane Biol* 2(4):277-299, 1970.

The selectivity in the steady state uptakes of Rb^+ and K^+ was studied in normal and malignant rat tissues *in vivo* and in liver slices, diaphragm, and tumor slices *in vitro*. The selectivity was minimal in erythrocytes and the 2 fastest growing of 4 transplantable tumors and ranged towards a maximum Rb^+ uptake in liver (Rb^+: K^+ discrimination ratio: 1.04, 1.09, 1.13, and 2.27, resp.). In each tissue, the selectivity was independent of Rb^+ concentration or of K^+ deficiency (except in skeletal muscle). In liver slices *in vitro*, reduction of energy metabolism by lowering the temperature (26°C) or by the addition of metabolic inhibitors (iodoacetate, dinitrophenol, cyanide, arsenate) reduced the Rb^+: K^+ discrimination proportionately much more than K^+ transport. Diaphragm and transplantable tumor slices gave similar results. With temperature reduction there is a logarithmic relation between the Rb^+: K^+ discrimination ratio and the respiration rate of liver slices. Simultaneous diffusion and metabolically coupled transport across a homogenous membrane in which Rb^+ transport is more closely coupled than that of K^+ to a metabolic flux across the membrane probably explains the results. The tissue differences in Rb^+: K^+ selectivity apparently originate in the different levels of the coupling metabolic flux in different cell types and thus of the energy expenditure on ion transport. In contrast to the differences in steady state selectivity between Rb^+ and K^+, the initial ratio of uptakes of trace ^{43}K and ^{86}Rb, in otherwise steady state conditions, was close to unity in both liver and tumor slices, in agreement with theoretical calculations.

6355 DISTRIBUTION OF ORALLY ADMINISTERED ^{45}Ca IN RAT INTESTINAL TISSUES AND VITAMIN D_3 EFFECT. *(E.)* Moriuchi, S. (Fac. Med., U. Tokyo, Japan), T. Watanabe and N. Hosoya. *J Vitamin* 16(1):58-63, 1970.

Using young vitamin D deficient rats (body weight 60 to 80 g), the effects of vitamin D_3 and actinomycin D on the radioactive calcium distribution were studied in the intestinal mucosa and muscle 5 and 30 min after the oral administration of ^{45}Ca. Serum ^{45}Ca concentration at 30 min was increased significantly in the vitamin D_3 treated rat, and this vitamin D_3 effect was inhibited by actinomycin D (the action of vitamin D_3 and actinomycin D was not observed at 5 min). ^{45}Ca was observed in the proximal intestinal mucosa (from pyloric end to 30 cm) at 5 min, and at 30 min was found in the distal mucosa (40 to 60 cm). The concentration of ^{45}Ca in the distal mucosa (at 30 min) was enhanced with vitamin D_3 and this action was partially inhibited by actinomycin D. ^{45}Ca in muscle was lower than in mucosa, and the distribution patterns were quite similar to the mucosal patterns. In the duodenal mucosa nuclei and cell debris (brush borders) ^{45}Ca was distributed in high concentration 5 min after administration whereas at 30 min ^{45}Ca of the subcellular fraction was significantly decreased, especially in nuclei, cell debris and mitochondria. This reduction was moderated by vitamin D_3 and actinomycin D inhibited this vitamin D_3 action in microsomes and supernatants. Calcium transport may involve a membrane permeable system (actinomycin D insensitive) and a system involving calcium carrier protein (actinomycin D sensitive).

6356 STUDIES ON HOG INTRINISC FACTOR: III. IMMUNOLOGIC EVIDENCE SUGGESTING THE ABSORPTION OF HOG INTRINSIC FACTOR FROM HUMAN INTESTINE. *(E.)* Inada, M. (Fac. Med. Kyoto U., Japan). *J Vitamin* 16(1):25-30, 1970.

One g of raw hog intrinsic factor (IF) was administered orally to each of 10 control subjects with no hematological disorders, 3 pernicious anemia patients, and 3 total gastrectomy patients. Eight hr later a vitamin B_{12}-binding substance from raw hog IF was detected, by radioimmunodiffusion technique, in the sera and urines of 7 control subjects. The sensitivity of the technique would indicate that immunoreactive hog IF equivalent to bind 5.0 μg/ml of hog IF existed in the control sera of positive cases. In the remaining 3 control subjects and in all cases with pernicious anemia or with total gastrectomy, the substance was not found in their sera and urines either before or after the oral administration of raw hog IF. Based on the finding that the detected substance was immunologically identified with the purified hog IF, it was concluded that "immunoreactive hog IF", or rather hog IF or its split fragment, was absorbed from human intestine.

6357 INFLUENCE OF SUCCINIC ACID ON ABSORPTION OF IRON STUDIED BY WHOLE-BODY MONITORING. *(E.)* Will, G. (Gateside Hosp., Greenock, Scotland) and K. Boddy. *Amer J Clin Nutr* 23(6):779-781, 1970.

Nineteen symptomless, nonanemic adult male volunteers were given two 10-day courses of oral ferrous succinate (each dose containing 37 mg elemental iron), one course being given with added free succinic acid and the other without, to determine if successive, rather than single, doses of succinic acid were effective in increasing whole-body absorption of iron. Labeling with 0.1 to 0.2 μC ^{59}Fe/dose enabled measurement of iron absorption (a whole-body monitor was used). The mean absorption and standard error of 37 mg iron as ferrous succinate alone was 5.7% with a range of 2.6 to 10.0%. The corresponding figures for the same dose of ferrous succinate given with 110 mg free succinic acid were virtually the same: mean and standard error, 5.7% with a range of 1.9 to 9.6%. In 9 subjects in whom the red cell incorporation of iron was measured, iron utilization was not increased by the addition of free succinic acid.

6358 STUDIES IN CARBOHYDRATE-INDUCED HYPERTRIGLYCERIDEMIA: ASPECTS OF FRUCTOSE METABOLISM. *(E.)* Kaufmann, N. A. (Hadassah U. Hosp., Jerusalem, Israel), J. Kapitulnik and S. H. Blondheim. *Israel J Med Sci* 6(1):80-85, 1970.

Blood levels of fructose, glucose, pyruvate, lactate and serum triglyceride were reported in 11 normal subjects and 8 patients with hypertriglyceridemia, after administration of an oral fructose load (1 g/kg). Serum fructose increased from about 5 mg/100 ml to 15 mg/100 ml in both normal and hyperglyceridemic patients. No differences in glucose, pyruvate or lactate changes were found between normals and patients. Both groups exhibited a transient decrease in serum triglycerides (mean 8.5 mg/100 ml in normals and mean 60.5 mg/100 ml in patients). However, the decrease relative to initial fasting triglyceride levels was about the same in both groups. From these results, intestinal absorption of fructose appears to be normal in patients with carbohydrate-induced hypertriglyceridemia.

6359 PERMEABILITY CHARACTERISTICS OF THE INTESTINAL EPITHELIUM AND HIBERNATION IN *TESTUDO HERMANNI HERMANNI* GMELIN. *(E.)* Gilles-Baillien, M. (Lab. Biochem., Inst. Leon Fredericq, U. Liege, Belgium). *Arch Int Physiol Biochim* 78(2):327-338, 1970.

6360 INTESTINAL ABSORPTION OF ESSENTIAL AMINO ACIDS IN THE PRESENCE AND ABSENCE OF VALINE IN THE ADULT RAT. *(Fr.)* Wellers, G. (Fac. Med. Paris, France), J. Chevan and N. Galent. *C R Soc Biol* 163(5): 1043-1046, 1969.

6361 EVALUATION OF O_2 AVAILABILITY DURING GLUCOSE TRANSPORT IN EVERTED SACS OF RAT SMALL INTESTINE. *(E.)* Pietra, P. (Inst. Gen. Physiol., U. Pavia, Italy) and V. Capelli. *Experientia* 26(5):514-515, 1970.

6362 THE EXCRETORY FUNCTION OF THE ISOLATED PERFUSED PIG LIVER. *(E.)* Winkler, K. (Govt. Hosp., Copenhagen, Denmark), R. Iversen Hansen, A. Schmidt and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):157-162, 1970.

6363 INTESTINAL TRANSPORT OF SUGARS AND AMINO ACIDS: INDEPENDENCE OR FEDERALISM? *(E.)* Alvarado, F. (U. Puerto Rico Sch. Med., San Juan). *Amer J Clin Nutr* 23(6):824-828, 1970.

6364 INTESTINAL ABSORPTION AND BLOOD FLOW. *(E.)* Mao, C. C. (U. Oklahoma Med. Ctr., Oklahoma City) and E. D. Jacobson. *Amer J Clin Nutr* 23(6):820-823, 1970.

6365 CORTICOSTEROID CLEARANCE BY THE GASTROINTESTINAL TRACT IN DOGS AND MONKEYS. *(E.)* Lien, W. M. (Boston U. Med. Ctr., Mass.), J. R. McCormick, M. W. Davies and R. H. Egdahl. *Endocrinology* 87(1):206-208, 1970.

6366 FUNDAMENTAL STUDIES ON ISONIAZID (INH) THERAPY: II. DECOMPOSITION OF INH DERIVATIVES *IN VITRO* AND ADSORPTION AT THE INTESTINAL LEVEL. *(Jap.)* Okudaira, M. (Saga Natl. Sanit., Japan), M. Kuchii and Y. Shimizu. *Iryo* 23(12):1511-1516, 1969.

6367 A STUDY OF GLUCOSE PERFUSIONS OF AN ISOLATED JEJUNAL LOOP IN THE CHRONICALLY TREATED RABBIT. *(Fr.)* Coullaud, D. (Fac. Med. Pharm., Angers, France) and J. Leveque. *C R Soc Biol* 163(12): 2683-2687, 1969.

6368 STUDIES ON INTESTINAL ABSORPTION OF PROTEOLYTIC ENZYMES. *(Jap.)* Yoshioka, Y. (Sapporo Med. Coll., Japan). *Sapporo Med J* 36(1-2):41-52, 1969.

59 RESORPTION AND METABOLISM OF 16-ACETYL GITOXIN AND ACETYL GITOXIN-α BY THE RAT INTESTINE VITRO. *(Ger.)* Pfordte, K. (Inst. Pharmacol. Toxicol, tin Luther U., Halle, Germany) and W. Foerster. *Acta l Med German* 24(1-2):83-88, 1970.

0 WATER AND ELECTROLYTE EXCHANGES IN THE RECTAL AMPULLA FOLLOWING THE ADMINISTRATION OF A URETIC AGENT. *(It.)* De Martino Rosaroll, G. (Central p., Rome, Italy) A. Bossini and E. Bologna. *Rass iopat Clin Ter* 41(6):575-584, 1969.

1 THE ACTION OF MILK IN HUMAN HEPATIC CLEARANCE. *(Fr.)* Charbonnier, A. (Ctr. U. Hosp. Cochin, is, France), J. Perrin and M. Lahellec. *Arq Gas- ent* 7(1):17-21, 1970.

2 SELECTIVE REGULATION OF AMINO ACID TRANSPORT BY THE INTESTINE OF GOLDFISH (*CARASSIUS AURA-* L.). *(E.)* Smith, M. W. (A. R. C. Inst. Anim. Physiol., raham, Cambridge, England). *Comp Biochem Biophys* 2):387-401, 1970.

3 TRANSPERITONEAL EXCHANGE: III. THE INFLUENCE OF TRANSPERITONEAL FLUID FLUX ON THE PERITONEAL SMA CLEARANCE OF SERUM ALBUMIN IN RABBITS. *(E.)* Aune, (Ulleval Hosp., Oslo, Norway). *Scand J Gastroent*):161-168, 1970.

6374 DIFFICULTIES IN DETERMINING VALID RATE CONSTANTS FOR TRANSPORT AND METABOLIC PROCESSES. *(E.)* Dietschy, J. M. (U. Texas Southwestern Med. Sch., Dallas). *Gastroenterology* 58(6):863-874, 1970.

6375 ABSORPTION AND MALABSORPTION OF VITAMIN B_{12}. *(E.)* Corcino, J. J. (Mount Sinai Sch. Med., New York, N. Y.), S. Waxman and V. Herbert. *Amer J Med* 48(5):562-569, 1970.

6376 INTERACTION OF DRUGS WITH POLYMERS: III. PHASE SEPARATION OF POLYACIDS BY O-BENZOYLTHIAMINE DISULFIDE HYDROCHLORIDE AND GASTROINTESTINAL ABSORPTION OF O-BENZOYLTHIAMINE DISULFIDE-POLYACID COMPLEXES. *(E.)* Tanaka, N. (Pharm. Res. Lab. Tanabe Seiyaku Co., Osaka, Japan), G. Hirata and I. Utsumi. *Chem Pharm Bull* 18(6):1083-1090, 1970.

6377 MEMBRANE TRANSPORT AND THE HEPATIC CIRCULATION. *(E.)* Goresky, C. A. (McGill U. Med. Clin., Montreal, Quebec, Canada) and G. G. Bach. *Ann NY Acad Sci* 170(1):18-47, 1970.

- P:Morph (6283)
- P:Motil (6390)
- P:Secr:Stom (6402)
- P:Secr:Hepatobil (6429)(6456)
- Diagproc (6517)
- D:Stomduo (6639)(6651)
- D:S.Intest:Malabs (6686)
- D:L.Intest (6699)
- D:L.Intest:Ulccol (6732)
- D:Livbil:Gallb (6922)
- D:Gen (6945)(6948)

MOTILITY

8 ELECTRICAL STIMULATION OF ISOLATED GUINEA PIG ILEUM. *(E.)* Scriabine, A. (Merck Inst. r. Res., West Point, Pa.) and G. J. Perlak. *J l Physiol* 28(6):860-862, 1970.

ifications of the technique of coaxial electrical mulation of isolated guinea pig ileum included stimulating electrodes with a fixed platinum wire, Multi-Pulser, a solid-state unit, designed to iver pulses generated by a stimulator simultansly to 6 isolated tissue preparations without lection of electrical loads back to the waveform rce. At the stimulation frequency of 0.1/sec, isolated ileum usually developed a slight ascend- staircase phenomenon. There was no statistically nificant change in the strength of contraction h the increase in the rate of stimulation from (1.89 g) to 0.4/sec (1.62 g). At the 0.1/sec quency the response to electrical stimulation ained stable for 1 hr. In experiments with glucose- e medium, addition of glucose (0.4 to 1.5 mg/ml) nificantly increased the force of contractions. gs known to depress the release of acetycholine rphine and tetrodotoxin) antagonized electrically induced contractions of isolated guinea pig ileum. In pharmacology, this technique is apparently useful in evaluating drugs which, like morphine, block the release of acetylcholine from the tissue without antagonizing the spasmogenic effects of exogenous acetylcholine.

6379 EFFECT OF SECRETIN AND CHOLECYSTOKININ ON GASTRIC EMPTYING AND GASTRIC SECRETION IN MAN. *(E.)* Chey, W. Y. (Temple U. Hlth. Sci. Ctr., Philadelphia, Pa.), S. Hitanant, J. Hendricks and S. H. Lorber. *Gastroenterology* 58(6):820-827, 1970.

The effects of secretin and cholecystokinin on gastric emptying (% emptying at 15 min) and on gastric acid secretion (mEq/5 min) stimulated by pentagastrin (0.12 μg/kg/hr iv.) or histamine (0.02 mg/kg/hr iv.) were determined in 21 fasted patients (2 with duodenal ulcers and 2 with a history of chronic pancreatitis although all 4 were asymptomatic at the time of the study). Secretin (1 U/kg i.v.) reduced gastric emptying from 85% to 41% and cholecystokinin (0.5 U/kg i.v.) reduced it from 80% to 44% while saline controls in 2 separate experiments averaged 85%. Pentagastrin-stimulated gastric secretion dropped from approximately 1.6 to 0.65 within 5 min of secretin administration (1 U/kg) and remained significantly depressed for 30 min, while histamine-stimulated secretion dropped from approximately 2.4 to 1.9 within 5 min of the secretin administration (1 U/kg) and dropped further to 1.1 after 15 min although the inhibition was no longer significant after 20 min; but when higher doses of pentagastrin (6 μg/kg/hr) or of histamine (0.04 mg/kg/hr) were used to stimulate acid secretion, secretin produced no significant inhibition. Cholecystokinin lowered the pentagastrin-stimulated secretion from 2.0 to 1.5 within 5 min with a maximal effect observed after 15 min (0.8) and with significant inhibition for 30 min, and lowered the histamine-stimulated secretion from 2.5 to 2.0 after 5 min although significant inhibition lasted only 15 min.

6380 THE SIGNIFICANCE OF THE ABDOMINAL ESOPHAGUS IN THE CLOSING MECHANISM OF THE ESOPHAGOGASTRIC JUNCTION. AN EXPERIMENTAL STUDY.

(Ger.) Kralik, J. (1st Surg. Clin. Palacky U., Olomouc, Czechoslovakia). *Thoraxchirurgie* 18(3):207-214, 1970.

Experiments in dogs were performed to test the possibility of maintaining a pressure barrier between the stomach and thoracic esophagus, under conditions of a non-functioning sphincter. In 9 dogs a left lateral thoracotomy was followed by separation of the phreno-esophageal membrane, the stomach and the upper part of the duodenum were pulled up into the left pleural cavity, and a pyloroplasty was carried out, after which a separation of the esophagus close to the cardia was effected, and closed. The large curvature in the cardiac end of the stomach was separated and a tube was inserted between this and the esophagus. The stomach was then replaced into the abdominal cavity and the terminal esophagus was resected and an anastomosis made with the stomach tube. After 14 days, the animals were able to eat normally. Difficulties in swallowing appearing during the first 2 post-operative weeks indicate esophageal reflux, and 3 dogs were thus eliminated (2 with bilateral pleural empyema, and one animal had to be sacrificed because of an excessively wide tube, causing mechanical difficulties). Of the 6 surviving animals, 2 suffered post-operative reflux, both due to a faulty construction of the tube (two too short, one too wide an opening of the cardia). The other 4 animals showed no signs of esophageal reflux. Another method for the reconstruction of the esophageal junction was applied in 8 dogs, in which left lateral thoracotomy was followed by bringing together the phrenoesophageal membrane and the adjoining peritoneum with the esophagus perimeter. A corner of the gastric fundus and the anterior surface of the esophageal gastric connection were pulled up into the pleural cavity, and myotomy of the terminal esophagus was effected. The corner of the gastric fundus was sutured into the large muscle slit in such a manner that the gastric serosa were brought close to the esophageal mucosa, thus hindering the coalescence of the myotomy. The pyloroplasty accomplished, the organs were replaced into the peritoneal cavity, and the left hiatal edge sutured to the esophagus. This "patch" method was successful in the attempt to reconstruct the esophagogastric junction.

6381 EFFICIENCY OF AN ANTIPERISTALTIC INTERPOSED SMALL BOWEL LOOP IN RELATION TO ITS LOCALIZATION.

(Ger.) Schima, E. (Surg. U. Clin. Vienna, Austria). *Langenbeck Arch Chir* 326(2-3):212-215, 1970.

An antiperistaltic interposition of 2 to 3 cm of the small bowel was made in colectomized rats either in the lowest ileum or in the middle of the small intestine. In control animals, the small segment was excised and then inserted in an *iso*peristaltic position. The mean bowel transit time in controls was 3.7 hr and 6.2 and 6.0 hr in the experimental animals. Since there was no difference in the retardation of the bowel transit time regardless of the location of the antiperistaltic segment, the braking effect appears to be limited to a portion of the bowel above the interposition.

6382 THE EFFECT OF VAGOTOMY ON FLOW RESISTANCE AT THE CHOLEDOCHO-DUODENAL JUNCTION. AN EXPERIMENTAL STUDY IN THE ANESTHETIZED CAT.

(E.) Liedberg, G. (Dept. Surg., U. Lund, Sweden) and M. Halabi. *Acta Chir Scand* 136(3):208-212, 1970.

Young cats (10) of both sexes were used in this study of the effects of vagotomy on the choledocho-duodenal sphincter. The resistance to continuous perfusion of the sphincter of Oddi with saline was measured in anesthetized animals before and after vagotomy with recordings made under basal conditions and after the injection of cholecystokinin (CCK). In 1 cat the effect of i.v. injection of the C-terminal octapeptide of CCK was observed. The damped curve showed only very small oscillations due to the influence of respiration and cyclic sphincter activity (about 4 to 5 cycles/min) and slow irregular waves representing the mean sphincteral resistance. Increased duodenal activity clearly raised the resistance. In all 10 cats i.v. injection of CCK (dose about 1 unit/kg) stopped the activity of the sphincter for 10 to 15 min. The injection clearly reduced the resistance to flow in 7 cats, including 2 in which the reduction was preceded by a transient increase due to strong duodenal contractions. Vagotomy had no influence on the rhythmical sphincter activity. All common duct pressure changes after vagotomy were slight and transient. The flow resistance always returned to the pre-vagotomy level within 15 to 20 min. In none of the cats was vagotomy followed by any change in the response to CCK. The injection of $0.7x10^{-4}$ mg of C-terminal octapeptide of CCK had an effect similar to that of 2 U CCK. The findings do not suggest any pumping mechanism in the sphincter. The response of the sphincter to physiological stimuli e.g. feeding, in the unanesthetized animal before and after vagotomy still is unknown.

6383 PYLORO-CORPORIC INHIBITORY REFLEX VIA VAGO-VAGAL PATHWAY.

(Jap.) Neya, T. (Okayama U. Med. Sch., Japan). *J Physiol Soc Jap* 31(8):505-511, 1969.

6384 EFFECTS OF SOME FOODSTUFFS UPON GASTRIC EMPTYING.

(Jap.) Nanba, R. (Okayama U. Med. Sch., and H. Siina. *J Physiol Soc Jap* 32(2):78-87, 1

385 THE EFFECT OF DEHYDROBENZPERIDOL, FENTANYL AND KETAMINE ON THE INTESTINAL MOTILITY OF IPPIES. *(Ger.)* Dick, W. (Inst. Anesth. Johann Gutenerg U., Mainz, Germany) and S. Hofman. *Anaesthesist* (6):205-208, 1970.

86 THE EFFECT OF TEMPERATURE ON THE SPONTANEOUS ACTIVITY OF THE GUINEA PIG TAENIA COLI. *(Ger.)* n Loh, D. (Physiol. Inst. U. Marburg, Germany) and K. lenhofen. *Pfluger Arch* 318(1):35-50, 1970.

87 ELECTRICAL ACTIVITY OF THE NORMAL HUMAN STOMACH; TOPOLOGICAL VARIATIONS. *(Fr.)* Couturier, D. losp. Bichat, Paris, France), C. Roze, J. Paolaggi and Debray. *C R Acad Sci* 270(23):2817-2820, 1970.

88 EFFECT OF NITROGEN MUSTARD ON THE ISOLATED GUINEA PIG ILEUM. *(E.)* Bartsokas, S. C. nst. Pharmacol., Athens U. Greece), C. Karageorgiou d D. Varonos. *Arzneimittelforschung* 20(5):713-714, 70.

6389 RESERPINE-OUABAIN ANTAGONISM IN THE GUINEA PIG ILEUM. *(E.)* Bartsokas, S. C. (Inst. Pharmacol., Athens U., Greece), C. Karageorgiou and D. Varonos. *Arzneimittelforschung* 20(5):724-725, 1970.

6390 VOLTAGE RESPONSE OF FROG GASTRIC MUCOSA TO DIRECT CURRENT. *(E.)* Noyes, D. H. (Med. Ctr., U. Alabama, Birmingham) and W. S. Rehm. *Amer J Physiol* 219(1):184-192, 1970.

6391 THE INFLUENCE OF ORAL DIAZEPAM ON GASTROINTESTINAL MOTILITY. *(E.)* Birnbaum, D. (Hadassah U. Hosp., Jerusalem, Israel), J. Ben-Menachem and A. Schwartz. *Amer J Proctol* 21(4): 263-266, 1970.

● P:Morph (6328)(6339)
● P:Absorp (6351)
● P:Gen (6498)
○ Diagproc (6517)
● D:Esoph (6601)
○ D:Stomduo (6627)
● D:Gen (6948)

SECRETION AND METABOLISM

Stomach

392 SITE OF ORIGIN OF THE HORMONE RESPONSIBLE FOR GASTRIC HYPERSECRETION ASSOCIATED WITH RTACAVAL SHUNT. *(E.)* Orloff, M. J. (U. California h. Med., San Diego), H. Villar-Valdes, A. G. bott, R. J. Williams and H. Rosen. *Surgery* (1):202-208, 1970.

is study is an attempt to localize the site of igin of the intestinal phase hormone responsible r gastric hypersecretion associated with portaval shunt. Dogs (24) prepared with Thiry-Vella ops of jejunum, ileum or colon and with portaval shunts were used in the investigation. Stanrd test meals instilled into the isolated segments re employed to stimulate secretion and the volume d acid content from Heidenhain pouches measured. sal secretion (1.10 to 1.40 ml/hr) increased maredly (10.50 to 16.84 ml/hr) in response to food in e isolated jejunal pouch and basal acidity (0.10 0.13 mEq/hr) increased to 1.18 to 2.04 mEq/hr. e secretory response to ileal installation of the st meal was minimal (0.79 to 1.44 ml/hr to 4.65 5.29 ml/hr) as was the acid response. Installaon of food into the isolated colon did not stimute gastric secretion either with or without rtacaval shunt. The jejunum therefore appears to the main site of the hormone responsible for the intestinal phase of gastric secretion and for the hypersecretion associated with portacaval shunt.

6393 IMMUNOCHEMICAL MEASUREMENT OF THE VAGAL RELEASE OF GASTRIN. *(E.)* Jaffe, B. M. (Washington U., Sch. Med., St. Louis, Mo.), J. E. McGuigan and W. T. Newton. *Surgery* 68(1):196-201, 1970.

The measurement of gastrin following vagal stimulation by insulin (0.7 unit/kg, i.v.) was made in an attempt to confirm and categorize the vagal release of this hormone. Stamm gastrostomies were performed in 7 dogs (12.8 to 17.8 kg) under light pentobarbital anesthesia and Levin tubes passed and positioned. Peripheral venous samples were analyzed for blood glucose and portal vein samples withdrawn for serum gastrin analysis by radioimmunoassay. Initial blood glucose levels (54 to 100 mg%) fell to between 15 to 43 mg% after 1 hr following insulin administration, and acid secretion rose from an initial 0.12 mEq/hr to 0.64 mEq/hr after stimulation. Gastrin from portal blood first increased at a mean 25 min after insulin administration and there appeared to be a specific blood glucose level of 34 to 55 mg% (43 mg%) at which gastrin was first released. Basal portal vein gastrin levels of 20 pg/ml or less rose to a mean peak concentration of 225 pg/ml. Vagal release of gastrin has thus been documented by direct measurement of the hormone.

6394 BASAL AND HISTAMINE-INDUCED GASTRIC ACID AND PEPSIN SECRETION IN THE CONSCIOUS MINIATURE PIG.

(E.) Merritt, A. M. (Sch. Vetr. Med., Kennett Square, Pa.) and F. P. Brooks. *Gastroenterology* 58(6):801-814, 1970.

Examination was made of the porcine stomach in relation to its basal gastric secretion and maximal secretory potential. Female miniature swine between 8 and 26 weeks of age were fitted surgically with a gastric cannula and chronic intravenous catheter. Volume, pH and acid output during the interdigestive secretory period and the gastric response to histamine (0.12 to 4.0 μg/kg, i.v) were measured in 6 dogs and, in addition, body weight was followed as an index of growth and to normalize the output data. The average acid output during basal secretion was 0.240 mEq/kg/hr and the output pattern was unpredictable in that marked changes during collection periods were not unusual. The pepsin output generally corresponded with acid output. Maximal acidity was achieved with histamine doses between 1.0 and 4.0 μg/kg/min and the mean output averaged 1.409 mEq/kg/hr. The mean pepsin response was also maximal at doses of 1.0 μg/kg/min or above. No significant differences were found between the histamine response of animals weighing under 8 kg and the same pigs between 14 to 18 kg at a later date. The fundal mucosal weight of the miniature pigs was concluded to be an accurate index of their parietal cell mass.

6395 BASAL AND HISTAMINE-STIMULATED HUMAN GASTRIC ACID SECRETION.

(E.) Winship, D. H. (Marquette Sch. Med., Milwaukee, Wisc.) and G. C. Bernhard. *Gastroenterology* 58(6):762-765, 1970.

The effect of indomethacin administration (75-100 mg/day p.o.) for 1 month on gastric acid secretion was determined using the augmented histamine test of Kay on 22 patients with arthritic diseases (classic rheumatoid arthritis, osteoarthritis, Reiter's syndrome, or ankylosing spondylitis) and on 11 normal subjects. In arthritic patients the basal acid output (mEq/hr) and the peak acid output (mEq/hr) were 0.7 and 13.7, resp., before treatment and 0.9 and 15.1, resp., after treatment, while in normal subjects the basal and peak outputs were 0.9 and 17.6, resp., in the first test and 1.5 and 20.4, resp., in a second test run 3 to 6 weeks later. No significant differences are apparent in either group.

6396 THE ACUTE EFFECT OF VARIOUS PHARMACOLOGICAL SUBSTANCES UPON ACID SECRETION IN RESPONSE TO GASTRIC STIMULATION IN THE HUMAN.

(Ger.) Mertz, D. P. (Med. Polyclin. U. Freiburg, Germany), T. Wick, T. Thongbhoubesra and C. Walloschek. *Klin Wschr* 48(13):821-822, 1970.

Experiments in humans without organic lesions of the gastric mucosa are described in which the influence of an intravenous injection of 170 mg 7-(β-hydroxyethyl) theophylline and 100 mg theophylline, of 300 mg 1-(β-hydroxypropyl)-theobromine, of 10 mg phentolamine, of 25 mg prednisolone, of 8 mg oxyfedrine and of the beta-adrenergic blocking agent LB46, resp., on gastric acid secretion has been measured during maximal stimulation with histalog. Gastric acid secretion has been found to be increased (24%) after injection of prednisolone and phentolamine due to an enhancement of the volume rate. The other substances did not alter significantly the gastric acid output. Cyclic 3',5'-AMP may play a part in the secretory mechanism of gastric acid.

6397 GASTRIN: OBLIGATORY INTERMEDIATE FOR ACTIVATION OF GASTRIC HISTIDINE DECARBOXYLASE IN THE RAT.

(E.) Aures, D. (VA Hosp., Sepulveda, Calif.), L. R. Johnson and L. W. Way. *Amer J Physiol* 219(1):214-216, 1970.

The role of endogenous gastrin in the activation of gastric mucosal histidine decarboxylase (assayed by the method of Aures and Clark) was studied in antrectomize (removes main source of gastrin) and normal rats. Histidine decarboxylase activity (pmoles CO_2/mg tissue) dropped from 0.9 in sham-operated animals to 0.2 in antrectomized animals after bethanechol administration (10 mg/kg i.p.) and fell to nonmeasurable levels from 2.1 and 1.1 after insulin (4U/kg i.p.) and 2-deoxy-D-glucose (200 mg/kg i.p.), resp. Substances structurally similar to gastrin, pentagastrin (250 mg/kg i.p.) and cholecystokinin (75 U/kg i.p.) produced similar hi tidine decarboxylase activities in both the sham-operated and antrectomized rats (1.4 and 1.3, resp. with pentagastrin and 1.2 and 1.1, resp. with cholecystokin although saline injection produced only very low activ ity (0.4) in the sham-operated rats and nondetectable activity in the antrectomized rats. Gastrin and struc turally similar substances may be responsible for histidine decarboxylase stimulation.

6398 RESPONSE TO DUODENAL ACIDIFICATION IN MAN: II. EFFECTS ON THE GASTRIC SECRETORY RESPONSE TO PENTAGASTRIN.

(E.) Wormsley, K. G. (Roy. Infirm., Sheffield, England). *Scand J Gastroent* 5(3):207-215, 1970.

The effects of infusion of hydrochloric acid (10 or 11 mEq) into the duodenum on gastric secretory response to pentagastrin (0.2 μg/kg/hr i.v.) were determined in 4 normal subjects and in 22 patients with indirect inguinal hernia, duodenal ulcer, or gastric ulcer. Reflux into the stomach from the duodenum was not significantly different in any of the groups and was not correlated to the response to pentagastrin. All the subjects had steady responses to pentagastrin alone and there were no significant differences from control levels (range 7.5 to 26 mEq/30 min) in the overall acid outputs when acid was infused over a 30 min period (range of 8 to 25 mEq/30 min) although there was a decrease when acid was infused over a 10 min period (range of 0 to 27 mEq/30 min) ; but gastric acid secretion was depressed below the control levels during the acidification periods (range of 0 to 25 mEq/30 min) efore returning to the higher levels (pepsin output ollowed the same patterns). The overall acid esponse to secretin (0.25 U/kg/hr i.v.) was less han to acidification (14.0 and 15.1 mEq/30 min, esp.) and the overall pepsin response to secretin as higher than to acidification (35.75 and 33.05 /30 min, resp.).

399 THE PROTEOLYTIC ENZYME IN GASTRIC JUICE AND THE INHIBITORY FACTOR OF THE ENZYME IN SER- M. *(Jap.)* Nishihara, T. (Sapporo Med. Coll., Japan). *apporo Med J* 36(3-4):53-67, 1969.

400 STUDIES ON GASTRIC SECRETION WITH TETRA- GASTRIN. *(Jap.)* Okabe, M. (Kumamoto U. ed. Sch., Japan). *J Kumamoto Med Soc* 44(4):329- 44, 1970.

401 EFFECT OF CERTAIN INORGANIC IONS ON THE SECRETION OF GASTRIC CHITINASE. *(Fr.)* Dandri- osse, C. (Lab. Biochem., Inst. Leon Fredericq, U. Liege, elgium). *Arch Int Physiol Biochim* 78(2):339-346, 1970.

402 STUDIES OF SYNTHETIC RADIOACTIVE GASTRIN (^{131}I OR ^{125}I) INJECTED INTRAVENOUSLY INTO HE RAT. *(Fr.)* Accary, J. P. (Hosp. Bichat, Paris, rance), P. C. Sizonenko, M. Dubrasquet and S. Bon- ils. *C R Soc Biol* 163(12):2538-2541, 1969.

403 HISTAMINE BIOSYNTHESIS IN GASTRIC TISSUE IN THE PYRIDOXINE-DEFICIENT RAT, STUDIED WITH ABELED HISTIDINE. *(Fr.)* Garbag, M. (Hosp. Broussais, aris, France). *C R Soc Biol* 163(12):2514-2519, 1969.

6404 NEW ASPECTS OF THE FORMATION AND FUNCTION OF HISTAMINE, 5-HYDROXYTRYPTAMINE AND DOPAMINE IN GASTRIC MUCOSA. *(E.)* Hakanson, R. (Dept. Pharmacol., U. Lund, Sweden). *Acta Physiol Scand* (supp. 340):1-134, 1970.

6405 CLINICOPHARMACOLOGICAL STUDY OF GASTRIXON. *(E.)* Javor, T. (U. Med. Sch. Debrecen, Hungary), A. Gyorffy and G. Mozsik. *Ther Hung* 18(1): 20-22, 1970.

6406 SINGLE SUBCUTANEOUS DOSES OF HISTAMINE AND PENTAGASTRIN IN GASTRIC FISTULA CHICKENS. *(E.)* Burhol, P. G. (U. Alabama Med. Ctr., Birmingham) and B. I. Hirshowitz. *Amer J Physiol* 218(6):1671- 1675, 17

6407 GASTRIC ACIDITY IN YOUNG AND ADULT MICE. *(E.)* Helander, H. F. (Dept. Anat., U. Umea, Sweden) *Scand J Gastroent* 5(3):221-224, 1970.

6408 CEREBRAL RELEASE OF GASTRIC ACID INHIBITOR. *(E.)* Reigel, D. H. (Marquette Sch. Med., Milwaukee, Wisc.), S. J. Larson and A. Sances, Jr. *Surgery* 68(1):217-221, 1970.

● P:Morph (6285)(6288)(6304)(6308)
● P:Motil (6379)(6384)(6387)
● Diagproc (6521)(6524)(6542)
● D:Stomduo (6612)(6628)(6652)
○ D:Stomduo:Peptulc (6659)

SECRETION AND METABOLISM

Pancreas

409 PANCREOZYMIN BIOASSAY IN MAN BASED ON PANCREATIC ENZYME SECRETION: POTENCY OF PECIFIC AMINO ACIDS AND OTHER DIGESTIVE PRODUCTS. E.) Go, V. L. W. (Mayo Clin., Rochester, Minn.), . F. Hofmann and W. H. J. Summerskill. *J Clin nvest* 49(8):1558-1564, 1970.

hysiologic intraduodenal concentrations of saline, extrose, micellar fatty acid, an amino acid mixure, and various essential and nonessential amino cids were perfused through the stomachs and duoenums of 45 healthy volunteers and outputs of pancreatic lipase, trypsin, and amylase were determined. nzyme outputs (represented by trypsin U x 10^3) in response to perfusion during the second hr with dextrose (1.75) was not significantly different from the saline control (1.2) while fatty acid (3.4) and the amino acid mixture (5.6) perfusates significantly raised the trypsin outputs. Pancreozymin (0.35 U/kg/min i.v.) was infused while perfusion with saline was maintained and the trypsin output was measured (28.0). A mixture of essential amino acids in the perfusate caused a trypsin output (24.2) similar to that of the pancreozymin but a mixture of nonessential amino acids evoked no greater output (7.8) than the saline control, and individually the essential amino acids (phenylalanine, valine, and methionine) evoked outputs (12.3, 8.4, and 8.1, resp.) only slightly greater than the saline controls while the other amino acids tested (tryptophan, isoleucine, leucine, lysine, and threonine) produced saline-like responses. Perfusion with the original amino acid mixture at various concentrations (18, 182, and 272 mM) produced similar results (16.4, 17.4, and 16.5) and i.v. infusion of the original mixture produced a trypsin output (8.5) similar to that achieved with the saline control

6410 • PANCREATIC ENZYME PATTERN IN RATS AS AFFECTED BY DIETARY SOYBEAN FLOUR. *(E.)*

Konijn, A. M. (Hebrew U. Hadassah Med. Sch., Jerusalem, Israel), Y. Birk and K. Guggenheim. *J Nutr* 100(3):361-368, 1970.

Adaption of the exocrine pancreatic enzymes to soybean flour was studied in male rats fed diets containing heated or unheated soybean flour. The animals were fed their respective diets for 3 weeks and following an 18-hr period of either fasting or continued feeding, were sacrificed, the pancreas was removed and weighed, and tryptic and chymotryptic enzyme assays were determined. The pancreas of rats fed diets with unheated soybean flour and then fasted had an amylolytic activity of 1410 U, a tryptic activity of 241 U and a chymotryptic activity of 3488 U, while the pancreas of rats receiving heated soybean flour and then fasted showed amylolytic activity of 2640 U, a tryptic activity of 164 U, and chymotryptic activity of 155 U. Lipase and esterase activities were similar for these two groups. In the pancreas of fed rats adapted to heated soybean flour, the lipolytic activity (457 U) and the esterolytic activity (1004 U) were higher than in those fed rats adapted to unheated soybean flour, which had a lipolytic activity of 117 U and an esterolytic activity of 239 U. More amylase was found in the pancreas of rats adapted to heated soybean flour than in those adapted to unheated soybean flour, and amylase activity was greater in the pancreas of fasted rats than in the fed rats. Tryptic and chymotryptic activities in unfasted rats were not affected by diet. Diets containing unheated soybean flour induced a response of the pancreas similar to that elicited by pancreozymin. Fractionation of pancreatic extracts showed that the total protein content of anionic proteins (carboxypeptidases A and B, trypsinogens I and II, chymotrypsinogen and procarboxypeptidases A and B) was significantly lower in the pancreas of rats fed unheated soybean flour than in those receiving heated soybean flour, and was more enhanced in the nonfasted than in the fasted state.

6411 PANCREATIC DOSE-RESPONSE CURVES TO INTRAVENOUS SECRETIN IN MAN. *(E.)*

Konturek, S. J. (Med. Acad. Cracow, Poland). *Gastroenterology* 58(6):828-832, 1970.

Volume, bicarbonate concentration and bicarbonate output of duodenal content were measured after the infusion of secretin in successively increasing doses (0.1, 0.3, 0.9 and 2.7 U/kg i.v.) and the resulting dose-response curves were compared to those obtained after single rapid injections (i.v.) in 6 volunteer women. All 3 parameters rapidly rose immediately following the start of infusion (0.1 U/kg/hr) in all the subjects with the mean maximal bicarbonate output (12 mEq/30 min) and the highest bicarbonate concentration (87 mEq/l) reached at a dose of 0.9 U/kg/hr, and the volume plateauing (73 ml/15 min) at the highest dose tested (2.7 U/kg/hr). Single rapid injections immediately raised the 3 parameters with the mean maximal bicarbonate output (11 mEq/30min) and the highest bicarbonate concentration (95 mEq/l) occurring at 0.9 U/kg and the volume maximum (63 ml/15min) at 2.7 U/kg. Both dose-response curves are similar and there is no statistical difference in the 30 min peak volume and bicarbonate output whether secretin is infused continuously or injected in single doses.

6412 SIGNIFICANCE OF CYCLIC AMP IN THE REGULATION OF EXOCRINE PANCREAS SECRETION. *(E.)*

Knodell, R. G. (U. Pennsylvania Med. Sch. Hosp., Philadelphia), P. P. Toskes, H. A. Reber and F. P. Brooks. *Experientia* 26(5):515-517, 1970.

The effects of bathing rabbit pancreas with N^6-2-0-dibutyryl cyclic adenosine-3'5'-monophosphate (DcAMP) and theophylline singly and in combination on trypsin and chymotrypsin concentration, and output (determine by titrating hydrolysates) and volume were determined Control values for trypsin concentration (52.3) and output (56.0), for chymotrypsin concentration (57.2) and output (62.8), were significantly increased when DcAMP (1×10^{-5}M) was added (98.6, 107.2, 96.4, and 104.9, resp.), when theophylline (1×10^{-2}M) was added (99.7, 127.8, 101.0, and 129.5, resp.), and when DcAMP (1×10^{-5}M) and theophylline (1×10^{-3}M) were added in combination (85.8, 114.0, 79.2, and 110.8, resp.). Theophylline alone (1×10^{-3}M) significantly increased only trypsin output (97.1), and all the additions except DcAMP alone significantly increased the volumes from the control value (105.0).

6413 THE INFLUENCE OF SODIUM TAUROCHOLATE ON TH PANCREATIC LIPASE-SUBSTRATE ADSORPTION AND ACTIVITY. *(E.)*

Schoor, W. P. (Louisiana St. U. Med. Ctr.) and P. Melius. *Biochim Biophys Acta* 212(1):173-175, 1970.

The role of sodium taurocholate in pancreatic enzyme-substrate interaction and enzymatic lipolytic activity was investigated using a Sephadex G-200 treated water-soluble preparation of porcine pancreatic lipase. One unit of enzymatic activity was equal to the amount of enzyme that would liberate 1 μEq of fatty acid per min from olive oil and diolein, as determined by NaOH titration. Adsorption activity was measured in assay solutions with added enzyme (26 U) which were centrifuged for 30 min at 100,000 X *g*. Adsorbed and unadsorbed activities were defined as those found after centrifugation in the olive oil top part and in the aqueous bottom part of the tube, resp. The amount of sodium taurocholate did not significantly affect the adsorption of the enzyme to the substrate surface. Enzymatic lipolytic activity increased linearly with increased sodium taurocholate concentration and reached maximum of 25 U activity with a 33 mM substrate concentration and a sodium taurocholate concentration of 3.0 mM.

maximum was reached for each substrate concentra-
ion (range: 3.3 to 33 mM), but there was no simple
elation between the maxima and the amount of sub-
trate. The adsorption of pancreatic lipase was
eversible and was not dependent upon the sodium
aurocholate concentration, while the lipolytic
ctivity was dependent upon it.

14 A MODIFIED TECHNIC OF ISOLATED PANCREATIC PERFUSION. *(E.)* Elmslie, R. G. (Queen
lizabeth Hosp., Woodville, Australia) and M. Mohan.
Surg Res 10(8):357-362, 1970.

15 THE EFFECT OF SYNTHETIC TRYPSIN INHIBITORS UPON THE KININ RELEASING ACTION OF TRYPSIN
D PANCREATIC KALLIKREIN. *(Ger.)* Markwardt, F.
Med. Acad. Erfurt, Germany), P. Walsmann and J.
rawert. *Acta Biol Med German* 24(3):401-404, 1970.

16 ACTION OF ACETYLCHOLINE, ALONE AND COMBINED WITH CARBONATED WATER, UPON THE EXTERNAL
ILIARY AND PANCREATIC SECRETIONS IN THE RAT. *(Fr.)*
ebray, C. (Hosp. Bichat, Paris, France), J. De La
our, C. Vaille, C. Roze and M. Souchard. *Therapie*
5(3):599-610, 1970.

6417 EFFECT OF 5,7-DICHLOR-8-HYDROXYQUINALDINE AND 5,7-DIBROM-8-HYDROXYQUINOLINE ON THE ACTIVITY OF PANCREATIC ENZYMES IN ENZYME-SUBSTITUTED PREPARATIONS (DYSENTROZYM). *(Ger.)* Berndt, W. (1st Med. U. Clin., Hamburg, Germany) and U. Staudt. *Z Gastroent* 8(3):150-152, 1970.

6418 THE EFFECT OF DIET ON THE CATALYTIC PROPERTIES OF PANCREATIC AMYLASE. *(Fr.)* Firquet, M. P. (Lab. Biochem., Inst. Leon Fredericq, U. Liege, Belgium) and G. Dandrifosse. *Arch Int Physiol Biochim* 78(2):347-355, 1970.

● P:Morph (6303)
○ D:Pancreas (6740)
● D:Gen (6936)

SECRETION AND METABOLISM

Hepatobiliary Tract

419 METABOLISM OF GLYCOCHOLIC ACID IN MAN. *(E.)* Norman, A. (Danderyds' Hosp., Sweden).
cand J Gastroent 5(3):231-236, 1970.

he metabolism of glycocholic acid was studied by
solating labeled conjugates (ethyl acetate and bu-
anol extractions and column chromatography) from
ile of patients (with normal enterohepatic circu-
ation) given 24-^{14}C-cholyl-1-^{14}C-glycine (6 μC p.o.).
fter 25 to 26 hr, 43 to 75% of the isotope in the
ile acids was present as double-labeled glycoholic
cid and dropped to 5 to 6% after 73 to 74 hr. When
holyl-1^{14}C-glycine (5 μC p.o.) was given to two
atients, only 0.3 to 0.5% of the isotope was pre-
ent as glycodeoxycholic acid with the remaining as
lycocholic acid after 24 to 26 hr. Bile acids are
leconjugated as they pass through the intestinal
ract and unconjugated cholic acid appears to be the
rincipal substrate for 7α-dehydroxylation.

420 A STUDY OF SOME POSSIBLE MECHANISMS BY WHICH MAGNESIUM ACTIVATES HEPATIC MICROSOMAL DRUG
ETABOLISM *IN VITRO*. *(E.)* Fouts, J. R. (Coll. Med. U.
owa, Iowa City) and M. A. Peters. *J Pharmacol Exp*
her 173(2):233-241, 1970.

Livers from male rats pre-treated with chlortetracycline (50 mg/kg i.p. daily for 5 days) or phenobarbital (75 mg/kg/day i.p. for 3 days), or nothing at all, were used to study some possible mechanisms of activation of hepatic microsomal drug metabolism *in vitro* by magnesium ion. The activities of microsomal reduced nicotinamide adenine dinucleotide phosphate (NADPH) oxidase, NADPH-cytochrome c reductase and cytochrome P-450 reductase enzymes were increased in the Mg^{++} activated suspensions. There was also a slight but consistent alteration in the substrate P-450 interaction as seen by a change in the spectral dissociation constant with benzphetamine (type I substrate) but not with aniline (type II substrate). A study of enzyme kinetics showed that Mg^{++} caused an increase in both the Km and V_{max} with benzphetamine as the substrate, but with aniline as the substrate only V_{max} was increased with no change in the K_m. High concentrations of Mg^{++} (50 mM) inhibited microsomal NADPH oxidase but only further increased microsomal NADPH-cytochrome c and P-450 reductase activities. High concentrations of Mg^{++} appeared to offer *in vitro* conditions where cytochrome P-450 reductase was not the rate-limiting step in certain drug metabolisms by hepatic enzymes.

6421 EFFECT OF NICOTINAMIDE ON THE REGULATION OF CARBOHYDRATE METABOLISM IN RAT LIVER.

(E.) Talke, H. (Med. U. Clin., Freiburg, Germany), J. Keller and F. W. Schmahl. *Horm Metab Res* 2(3):147-152, 1970.

The effect of a decreased fatty acid supply following nicotinamide injection (500 mg/kg, i.p.) on the carbohydrate metabolism in rat liver *in vivo* was investigated. After injection the ratios of lactate/pyruvate, glycerol-1-phosphate/dihydroxyacetonephosphate and malate/oxaloacetate decreased (from 11.0, 6.4, and 77 to 7.1, 3.7, and 44, resp.) leading to a more positive redox state of the cytosolic nicotinamide adenine dinucleotide system. The changes of these ratios are probably related to a diminished supply of fatty acids to the liver as a consequence of lipolysis inhibition. Accumulation of nicotinamide adenine dinucleotide had no effect on the redox state of the cytosolic NAD system. The sums of the redox pairs, lactate + pyruvate, glycerol-1-phosphate + dihydroxyacetonephosphate and malate + oxaloacetate decreased (from 1270, 240, 340 nmole/g to 715, 160, and 165 nmole/g, resp.) in treated animals. These decreases together with an increased glycogenolysis (glycogen content decreased from 262 to 33 µmole glucose/g liver) seem to be related to a lack of substrates, possibly as a consequence of inhibition of gluconeogenesis.

6422 CORTISONE INDUCED GLUCONEOGENESIS IN RAT LIVER: ENZYME ACTIVITIES AND SUBSTRATE CONCENTRATIONS.

(Ger.) Stormer, B. (Inst. Physiol. Chem. U. Dusseldorf, Germany), W. Janssen, H. Reinauer, W. Staib and S. Hollmann. *Hoppe-Seyler Z Physiol Chem* 351(3):296-304, 1970.

Gluconeogenesis was studied in fed and starved male rats, which were hydrocortisone treated (5 mg/100 g body wt i.p., single dose), betamethasone treated (5 mg/100 g body wt i.p., single dose), or adrenalectomized. Blood sugar and metabolite levels in the liver as well as enzyme activities (liver) were determined in samples taken 6 hrs after treatment. Liver acetyl-CoA (23 nmoles/g) increased with starvation in normal animals (55 nmoles/g) and in adrenalectomized animals (34 nmoles/g). Starvation also increased pyruvate carboxylase activity (0.0252 U/mg protein vs 0.0167 U/mg protein) and phosphopyruvate carboxylase activity (0.130 U/mg protein vs 0.038 U/mg protein) in both normal and adrenalectomized animals and decreased pyruvate kinase (18.1 U/g ml vs 61.3 U/g) and blood sugar levels (80 mg/100 ml vs 111 mg/100 ml). Glucocorticoid induced an increase in blood sugar levels (139 mg/100 ml) and liver glycogen content (4.5 mg/g vs 1.06 mg/g in starved animals) and a decrease in pyruvate kinase activity (0.148 U/mg protein vs 0.36 U/mg protein) and slightly increased pyruvate carboxylase (21.3 U/g vs 20.1 U/g in starved animals and 6 U/g in control animals). Since glucocorticoid administration led to decreased acetyl-CoA (34 nmole) when compared to the starved specimens and decreased the lactate/pyruvate ratio while increasing pyruvate kinase and pyruvate dehydrogenase activities, these factors should be excluded as effectors of glucocorticoid induction of gluconeogenesis in starvation.

6423 FACTORS INVOLVED IN CHANGES IN HEPATIC LIPOGENESIS DURING DEVELOPMENT OF THE RAT.

(E.) Lockwood, E. A. (Dept. Biochem., U. Sheffield, England), E. Bailey and C. B. Taylor. *Biochem J* 118(1):155-162, 1970.

Changes in the livers of developing Wistar rats from late fetal life to maturity were followed by measuring the activities of acetyl-CoA-carboxylase, phosphofructokinase, aldolase, extramitochondrial aconitate hydratase and NADP-dependent isocitrate dehydrogenase. Also studied was the effect of altering the weaning time on some enzymes associated with lipogenesis. Weaning rats at 15 days of age instead of 21 days produced an immediate increase in the activity of malic enzyme whereas the activities of glucose-6-phosphate dehydrogenase and ATP citrate lyase did not increase until 4 or 5 days and acetyl-CoA carboxylase 2 or 3 days after early weaning. Weaning rats on to an artificial-milk diet led to a complete repression of the rise in activity of hepatic enzymes associated with lipogenesis normally found on weaning, except for malic enzyme which increased in activity after 20 days. The i.p. injection of thyroxine produced a 20-fold increase in malic enzyme activity and a 2-fold increase in ATP citrate lyase activity; glucagon, cortisol and growth hormone had no effect. The activities of hepatic glucose-6-phosphate dehydrogenase and malic enzyme were higher in adult female than in adult male rats which is due to both male and female sex hormones.

6424 A COMPARATIVE STUDY OF RNA SYNTHESIS IN RAT HEPATIC NUCLEI AND MITOCHONDRIA UNDER THE INFLUENCE OF CORTISONE.

(E.) Yu, F. L. (Coll. Physicians Surgeons, Columbia U., New York, N.Y.) and P. Feigelson. *Biochim Biophys Acta* 213(1):134-141, 1970.

The nature of RNA synthesis in hepatic nuclei and mitochondria was studied in adrenalectomized male rats given cortisone acetate (5 mg/100 g i.p.) 10 min or 4 hr prior to sacrifice and also a mixture of 200 µC 5-^{3}H-uridine (U) and 40 µC 8-^{14}C-guanine (G) given i.p. 10 min prior to sacrifice. Specific activity measurements 10 min after cortison treatment indicated that the U/G base labeling ratio of the RNA in all cellular fractions was elevated relative to controls as a consequence of a concurren stimulation of U-rich RNA synthesis and a diminution of G-rich RNA synthesis. The U/G base labeling ratio of the hepatic RNA of all fractions was shifte downward 4 hr after cortisone treatment, with a 10 min pulse labeling period, as a consequence of enhancement of G-rich ribosomal precursor RNA synthesis in the nucleus. A 10 min cortisone treatment stimulated mitochondria to actively synthesize U-ric RNA, but there was no reversal of the RNA labeling pattern 4 hr after hormone treatment, as indicated by an unchanged high U/G base labeling ratio. It was concluded that the mitochondrial ribosomal RNA genome is under a different mechanism of control than its nuclear counterpart. After a 10 min pulse incorporation the U/G base labeling ratio of the RNA species was low in nuclei and high in cytoplasm, indicating that U-rich RNA synthesized in nuclei was rapidly transported into the cytoplasm leaving behin

he immature G-rich ribosomal RNA, whereas mitochondria
etained their U-rich RNA. The U/G ratios of the
cid-soluble precursor pools were relatively insensi-
ive to cortisone both in nuclei and mitochondria
fter either 10 min or 4 hr of hormonal treatment.

425 INHIBITION OF HEPATIC GLUCONEOGENESIS
AND FATTY ACID OXIDATION BY PENT-4-ENOIC
CID. *(E.)* Ruderman, N. B. (Harvard Med. Sch.,
oston, Mass.), C. J. Toews, C. Lowy, I. Vreeland
nd E. Shafrir. *Amer J Physiol* 219(1):51-57, 1970.

he effects of pent-4-enoic acid on gluconeogenesis,
atty acid oxidation and the redox state of the per-
used rat liver were studied by enzyme and metabolite
ssays. Pent-4-enoic acid (0.5-1.0 mM) inhibited
luconeogenesis from alanine and ketone body produc-
ion from linoleate by 80% in isolated perfused rat
iver. It also inhibited gluconeogenesis from
spartate (75%) but did not diminish either glycerol
fructose conversion to glucose. Octanoate in
ace of linoleate had little effect on gluconeogenesis
om alanine or ketone body production. Following
nt-4-enoic acid (1mM) tissue levels of 3-phospho-
ycerate, phophoenolpyruvate, and pyruvate increased
control 336, 70, 27; treatment 874, 232, 943 nmoles/
t wt, resp.). The lactate:pyruvate ratio in tissue
d β-hydroxbutyrate:acetoacetate ratio in the
rfusate also decreased, suggesting that intra-
llular NADH levels were diminished. Pyruvate
rboxylase and phosphoenolpyruvate carboxykinase
tivities when assayed directly were unchanged,
dicating that pent-4-enoic acid did not irreversibly
activate these enzymes. Pent-4-enoic acid probably
ppresses gluconeogensis by inhibiting long-chain
tty acid oxidation.

426 BIOSYNTHESIS OF 3-HYDROXY-3-METHYLGLUTARATE
AND MEVALONATE BY RAT LIVER HOMOGENATES *IN
TRO. (E.)* White, L. W. (Case Western Reserve U.,
ept. Pharmacol., Cleveland, Ohio) and H. Rudney.
ochemistry 9(13):2713-2724, 1970.

egulation of 3-hydroxy-3-methylglutaryl-coenzyme A
IMG-CoA) and mevalonate biosynthesis was studied
fractionated rat liver homogenates and three sys-
ems were developed for assay of HMG-CoA condensing
zyme. In the first system, the soluble fraction
as fully competent with respect to HMG formation;
th CoA and ATP were required for optimal activity.
1-^{14}C-acetate concentration of 7 x 10^{-4}M gave
aximum incorporation of HMG. The rate of incor-
ration was directly proportional to the amount
soluble supernatant added. Effects of Mg^{++} and
TA on acetoacetate formation were opposite to
ose on incorporation of HMG. In the second system
icrosomal system), when ^{14}C-acetyl-CoA was the
bstrate, incorporation into HMG occurred readily
ith whole microsomes or an EDTA microsomal extract;
P was not required. A TPNH generating system or
ddition of Mg^{++} or the omission of EDTA resulted
decreased activity. In the third system (soluble
ystem), incorporation of ^{14}C-acetyl-CoA into HMG
as decreased by the addition of Mg^{++} or omission
EDTA but, addition of a TPNH generating system
d no effect. Three systems were also developed
r the assay of HMG-CoA reductase. These included
the incorporation of labeled acetate into HMG and mevalonic acid requiring both soluble fraction and microsomes, incorporation of labeled acetyl-CoA into mevalonic acid also requiring microsomes. A method for determining the rate of synthesis of HMG and mevalonate, as contrasted with ^{14}C incorporation from labeled precursors, was described. Very little of the HMG formed was bound to protein and data supporting the role of HMG-CoA as an intermediate in mevalonate synthesis were presented.

6427 METABOLIC CHARACTERIZATION OF ACTIVELY PHAGOCYTIZING ISOLATED RAT KUPFFER CELLS. *(E.)* Pisano, J. C. (Tulane U. Sch. Med., New Orleans, La.) and N. R. DiLuzio. *J Reticuloendothel Soc* 8(1):25-36, 1970.

The phagocytic and metabolic activity of the Kupffer cell in rat liver was evaluated. The Kupffer cells, isolated by enzymatic digestion of rat liver, were actively phagocytic, responding to pH changes (optimum pH for phagocytosis of either gelatinized reticuloendothelial test lipid emulsion or colloidal gold lies between 6.5 and 7.0), incubation time (the amount of colloidal gold uptake progressively increased) and alterations of the particle-to-cell ratio (any increase in the particle concentration or the number of cells resulted in an increased Kupffer cell uptake). While the cells oxidized glucose and acetate, no significant increases in the amount of these substrates oxidized occurred during phagocytosis. The Kupffer cells utilized, to some degree, the hexosemonophophate shunt for glucose metabolism but the degree of participation of this pathway to total glucose metabolism was not altered during phagocytosis. During phagocytosis there was a decrease (control 0.39 ± 0.06; treatment 0.22 ± 0.02 μg substrate/10^{6} cells) in the oxidation of exogenous acetate. These findings suggest a unique phagocytic metabolism for Kupffer cells and emphasize the metabolic differences among the various macrophage populations of the reticuloendothelial system.

6428 HORMONE ACTION AT THE MEMBRANE LEVEL: I. PROPERTIES OF ADENYL CYCLASE IN ISOLATED PLASMA MEMBRANES OF RAT LIVER. *(E.)* Ray, T. K. (U. Rochester Sch. Med. Dent., N. Y.), V. Tomasi and G. V. Marinetti. *Biochim Biophys Acta* 211(1):20-30, 1970.

The properties of membrane bound adenyl cyclase in rat liver and its interactions with hormones and metal ions were studied. Optimum membrane protein concentration was found to be 60-70 μg and with 1 mM Mg^{+2} and 85 μg membrane protein, 0.3 mM ATP was needed to attain maximum velocity. The effect of Mg^{+2} on adenyl cyclase was also studied and its optimum concentration was found to be 4 to 5 mM in the presence of added 2.5 mM ATP. Ca^{+2} stimulated the basal activity of the enzyme at 0.03 to 0.3 mM, Na^{+} inhibited the enzyme, and K^{+} at 50 mM gave moderate stimulation. The effects of various detergents causing membrane solubilization showed enzyme stimulation by Triton X-100 and sodium dodecyl sulfate whereas deoxycholate caused slight inhibition. Ca^{+2} enhanced the epinephrine stimulation of adenyl cyclase and epinephrine enhanced Ca^{+2} binding to the membrane. The glucagon stimulation was enhanced by Ca^{+2} at 10^{-3} mM but inhibited by Ca^{+2} at 5×10^{-4} mM. Insulin inhibited adenyl cyclase activity as well as the glucagon stimulation of the enzyme.

6429 NEW CHOLERETICS: ELIMINATION AND EFFECT ON BILIRUBIN EXCRETION IN RATS. *(Ger.)*

Beck, K. (Med. U. Clin. Freiburg, Germany) and J. Bierwisch. *Arzneimittelforschung* 20(5):693-699, 1970.

Choleresis by 1-phenyl-1-hydroxy-n-pentane (PC 1) 1-(5,6-dihydropyranyl-3)-2-phenyl-ethanol-(1)(C-29) and O-(2-hydroxy-3-hexyl-oxy-propoxy)-sodium benzoate(DCh21) was compared with sodium dehydrocholate induced bile secretion in rats. Intraduodenal administration of equimolar amounts of the choleretics (0.5 mmoles/kg body weight) showed C29 to have the highest bile secretory effect (186%) without affecting bilirubin excretion. Highest bilirubin excretion occurred following i.v. and intraduodenal sodium dehydrocholate. The choleretics were excreted into the bile as glucuronides, hence becoming choleretically ineffective, while sodium dehydrocholate still maintained choleretic activity after enterohepatic circulation. Choleretic activity of the conjugated compounds was recovered only by β-glucuronidase action.

6430 REDUCTION OF THE Δ^4-3-KETOSTEROIDS BY NORMAL AND HYPERTENSIVE RAT LIVER. *(E.)*

Silah, J. G. (Dept. Path. Chem., U. Toronto, Ontario, Canada). *Endocrinology* 87(1):90-98, 1970.

The effect of high blood pressure on the rate of hepatic inactivation (Δ^4-hydrogenation) of Δ^4-3-ketosteroids by the soluble microsomal fraction was investigated *in vitro* with liver homogenates from experimentally prepared renal hypertensive male rats. The *in vitro* capacity for the reduction of ring A by livers from operated hypertensive rats (mean pressure 174 mm) was remarkably greater than that by livers from normal rats for cortisol (2.1-fold) and corticosterone (2.4-fold) and livers of operated rats that did not become hypertensive behaved similarly to normals. Differences in the Δ^4-hydrogenase activity seen in hypertensive rats may be explained as differences in enzyme content and/or activity of the liver, because all incubations were carried out in the presence of excess TPNH. Hence high blood pressure or its causative factors probably affects the enzymatic activity of the liver and possibly other tissues including the adrenal.

6431 METHIONINE TOXICITY AND ORNITHINE δ-AMINOTRANSFERASE IN CHANG'S LIVER CELLS. *(E.)*

Strecker, H. J. (Albert Einstein Coll. Med., Yeshiva U., New York), U. B. Hammar and P. Volpe. *J Biol Chem* 245(13):3328-3334, 1970.

Chang's liver cells grown in Eagle's minimum essential medium and containing 10% horse serum were used to study methionine toxicity and ornithine δ-aminotransferase. The addition of excess L-methionine to the culture media resulted in inhibition of cell multiplication, accumulation of cellular protein, and, relative to the latter, an excessive increase of ornithine δ-aminotransferase activity. Activity of ornithine δ-aminotransferase per cell increased about 250% and specific activity about 65% during 3 days of growth under these conditions. Glycine, serine, histidine, tyrosine, and tryptophan also inhibited cell multiplication and brought about an accumulation of cellular protein, but did not increase ornithine δ-aminotransferase activity relative to other protein. Incorporation of ^{14}C-leucine into cellular protein was also inhibited by excess methionine and the degree of inhibition roughly paralleled the inhibition of cell multiplication. Addition of homocysteine to the culture medium produced the same effects as methionine at about one-tenth the concentration. The toxic manifestations of excess dietary methionine, which in thi case were growth retardation and protein accumulation, were not antagonized by glycine or arginine as they are *in vivo*. Excess arginine in the medium did not inhibit cell multiplication appreciably nor cause accumulation of cellular protein, but it did elevate ornithine δ-aminotransferase activity, suggesting the increase of ornithine δ-aminotransferase activity was probably unrelated to inhibition of cell division and accumulation of cellular protein.

6432 COMPARATIVE EFFECT OF EXPERIMENTAL INJURY AND HYDROCORTISONE INJECTION ON LIVER AND PLASMA COMPOSITION OF RATS. *(E.)*

Gilder, H. (Cornell U. Med. Coll., New York, N.Y.), M. Valcic, V. DeLeon and D. Sternberg. *Metabolism* 19(8):562-568, 1970.

The catabolic response to injury was compared with that after i.m. injections of hydrocortisone in 100 male rats on a diet constant in nitrogen and calories but varying in fat and carbohydrate. Injur by femur multiple fracture or 5 mg of hydrocortisone day resulted in a reduction of weight gain and after 2 days the anabolic activity after both treatments wa evident in the enlargement of the liver and an increase of liver nitrogen and ribonucleic acid. There was relatively much greater elevation of RNA nitroge than of total nitrogen in the livers of the injured rats than in the hydrocortisone treated rats. Total liver glycogen and plasma non-esterified fatty acids were reduced in the injured rats but were elevated to extremely high levels in the hydrocortisone rats. Total liver fat was elevated by both treatments in rats on the normal and high carbohydrate diets but not in those on the high fat diet.

6433 *N*-HYDROXY-2-ACETYLAMINOFLUORENE SULFOTRA FERASE: ITS PROBABLE ROLE IN CARCINOGENES AND IN PROTEIN-(METHION-*S*-YL) BINDING IN RAT LIVER. *(E.)*

DeBaun, J. R. (U. Wisconsin Med. Ctr., Madiso E. C. Miller and J. A. Miller. *Cancer Res* 30(3):577-595, 1970.

1- and 3-Methylmercapto-2-acetylaminofluorene were identified as degradation products of hepatic prote bound methionyl derivatives after the administratio of 2-acetylaminofluorene (AAF) or *N*-hydroxy-AAF to rats. The amounts of *o*-methylmercapto-AAF obtained from liver protein were proportional to the i.p. do of *N*-hydroxy-AAF and appeared to be a measure of th

ount of ester-like metabolites of the carcinogen
rmed *in vivo*. 1- and 3-Methylmercapto-2-amino-
uorene were not obtained as degradation products of
e liver proteins of rats, mice, hamsters or guinea
gs given *N*-hydroxy-AAF or of rats given *N*-hydroxy-
aminofluorene. The soluble proteins of rat liver
ntained sulfotransferase(s) which synthesize AAF-*N*-
lfate from *N*-hydroxy-AAF and 3'-phosphoadenosine
-phosphosulfate; magnesium and manganous ions
imulated the system. Under a variety of conditions,
e *N*-hydroxy-AAF sulfotransferase activity in rat
ver, as assayed *in vitro*, paralleled the amounts
o-methylmercapto-AAF which could be released from
e livers of similarly treated rats after administra-
on of *N*-hydroxy-AAF and the susceptibility to liver
mor induction by *N*-hydroxy-AAF. Adult male rat
ver contained considerably more *N*-hydroxy-AAF sul-
transferase activity and formed considerably more
otein-bound 1- and 3-(methion-*S*-yl)-AAF *in vivo*
an did the livers of female rats or of male mice,
msters, rabbits or guinea pigs. Female rats and
e latter species were relatively resistant to
patic carcinogenesis with *N*-hydroxy-AAF. The
creased hepatocarcinogenicity of 2-aminofluorene
rivatives in female gonadectomized rats given
stosterone and the marked inhibition of hepato-
rcinogenesis with *N*-hydroxy-AAF in hypophysecto-
zed or thyroidectomized male rats were mirrored by
rresponding changes in hepatic sulfotransferase
tivity for *N*-hydroxy-AAF and the formation of
otein-bound methionyl-AAF derivatives *in vivo*. AAF-
sulfate appeared to be one of the ultimate reactive
d carcinogenic metabolites of AAF and *N*-hydroxy-AAF
rat liver.

34 REGULATION OF LIPOGENESIS: STIMULATION OF FATTY ACID SYNTHESIS *IN VIVO* AND *IN VITRO* THE LIVER OF THE NEWLY HATCHED CHICK.

(E.) Good-
dge, A. G. (Banting Best Dept. Med. Res., U. Toronto,
nada). *Biochem J* 118(2):259-263, 1970.

patic lipogenesis was stimulated *in vivo* and *in*
tro in liver and in liver slices from newly hatched
icks by forced feeding (stomach intubation) of
ml of a 20% glucose solution as the sole diet.
ver slices were incubated in a buffered Krebs-
nger solution and total fatty acids, CO_2, protein
nthesis and glycogen accumulation were measured
standard techniques. The single glucose meal
imulated the incorporation of acetate into fatty
ids in liver slices, but addition of glucose *in*
tro had no effect. Labeled acetate incorporation
g atoms incorporated/hr/100 mg wt) into fatty
ids was 0.7 in unfed control chicks, 145 in glu-
se-fed chicks; and when chicks were force-fed
lutions of fructose or glycerol, the acetate-fatty
id incorporation values were 7.9 and 5.0, resp.
vitro addition of fructose and glycerol markedly
imulated fatty acid synthesis from acetate. Fatty
id incorporation (ng atoms incorporated/hr/100 mg
) from labeled acetate in liver slices from un-
d chicks was 1.8 in the untreated controls, 48 in
ices treated with 11 mM fructose and 29 in slices
eated with 20 mM glycerol. Stimulation of fatty
id synthesis caused by fructose did not require
e synthesis of enzyme, indicating the presence of
tent fatty-acid synthesizing enzymes in livers of
e unfed chicks.

6435 INDUCTION OF LIVER TYROSINE AMINOTRANSFERASE BY THEOPHYLLINE AND ITS REPRESSION BY PHENTOLAMINE AND GLUCOSE IN ADRENALECTOMIZED RATS.

(E.) Kato, K. (Sch. Med. U. Nagoya, Japan). *FEBS Letters* 9(2):105-107, 1970.

Evidence is presented in this study for existence of a specific adrenotropic receptor controlling rat liver tyrosine aminotransferase. Theophylline (10 mg), 1-epinephrine (100 μg), phentolamine (2 mg), propranolol (0.7 mg) or cycloheximide (1 mg) were injected intraperitoneally into fasted rats (about 150 g). After sacrifice, the livers were removed, homogenized and tyrosine aminotransferase assayed. Theophylline increased enzyme activity several-fold while cycloheximide inhibited the increase, suggesting that the elevation was caused by *de novo* formation. The induction caused by theophylline was inhibited by phentolamine, an inhibitor of tyrosine aminotransferase induction by aromatic carboxylic acids. This induction was also repressed by glucose and epinephrine although simultaneous epinephrine and propranolol injection caused a marked increase of enzyme activity. The induction of tyrosine aminotransferase may result from an elevation of cyclic AMP.

6436 BINDING AND KINETIC STUDIES OF LIVER ALCOHOL DEHYDROGENASE-COENZYME-PYRAZOLE.

(E.) Shore, J. D. (Henry Ford Hosp., Detroit, Michigan) and M. J. Gilleland. *J Biol Chem* 245(13):3422-3425, 1970.

Liver alcohol dehydrogenase (from horse liver) complexes with pyrazole and the coenzyme nicotinamide adenine dinucleotide (NAD$^+$) or analogues nicotinamide hypoxanthine dinucleotide (NHD$^+$) or acetyl pyridine adenine dinucleotide (AcPyAD$^+$) were studied by spectral, kinetic, and equilibrium binding techniques. The dissociation constant for NHD$^+$ (709 μM) from alcohol dehydrogenase was higher than that for NAD$^+$ (110 μM) due to decreased rates of association indicating that the modified adenine ring has not affected substrate binding. Spectra for ternary complexes peaked at 290 nm with NAD$^+$ and NHD$^+$ and at 308 nm with AcPyAD$^+$ suggesting involvement of the pyridine ring in the formation of the complex. Dissociation constants of coenzyme from the ternary complexes were higher for NHD$^+$ (5.7 μM) and for AcPyAD$^+$ (2.7 μM) than for the NAD$^+$ (0.65 μM) coenzyme, while dissociation constants of pyrazole from the ternary complex were similar for NAD$^+$ (0.142 μM) and NHD$^+$ (0.091 μM) but was much higher for AcPyAD$^+$ (1.17 μM).

6437 INTERACTIONS BETWEEN MALONDIALDEHYDE AND RAT LIVER MITOCHONDRIA.

(E.) Horton, A. A. (Dept. Biochem., U. Birmingham, England) and L. Packer. *J Geront* 25(3):199-204, 1970.

Malondialdehyde metabolism and increased resistance of mitochondria to Triton disruption were investigated in rat liver. At low concentrations (4 to 6%) malondialdehyde did not result in trapping mitochondrial protein configurational states but did have a stabilizing effect on the mitochondrial membrane. This process may be related to organelle aging processes since aldehyde metabolizing systems may be a protective mechanism decreasing the accumulation of potentially destructive aldehydes.

6438 EFFECT OF MAGNESIUM DEFICIENCY IN GROWING RATS ON SYNTHESIS OF LIVER PROTEINS AND SERUM ALBUMIN. *(E.)* Scwartz, R. (Dept. Nutr., U. Connecticut, Storrs), N. A. Woodcock, J. D. Blakely, F. L. Wang and E. A. Khairallah. *J Nutr* 100(1):123-218, 1970.

The effect of dietary magnesium deficiency on protein synthesis in male weanling rat liver was investigated. *In vivo* incorporation of L-^{14}C-valine into serum albumin was significantly ($p < 0.01$) reduced in livers of rats fed a 36% casein diet with .008, .04, .08% magnesium. Rate of disappearance of labeled albumin from the livers of deficient rats, however, was lower ($t_{1/2}$ of 18.4 hr) than that in pair fed controls fed adequate magnesium ($t_{1/2}$ of 11.4 hr). *In vitro* rate of incorporation of L-^{14}C-valine by free and membrane-bound polysomes into total protein and serum albumin was consistently depressed in preparations from magnesium-deficient rats. No structural or functional changes were found in the polysomes. Most of the albumin synthesized *in vitro* was formed by membrane-bound polysomes and constituted 75% of the protein synthesized on this fraction. The change in protein synthetic capacity appeared to reside entirely in the supernatant fraction and the magnesium concentration of the supernatant fraction was significantly reduced ($p < 0.01$), but this reduction probably was not the major cause of the change in rate of protein synthesis.

6439 FACTORS THAT MODIFY THE METABOLISM OF ETHANOL IN RAT LIVER AND ADAPTIVE CHANGES PRODUCED BY ITS CHRONIC ADMINISTRATION. *(E.)* Videla, L. (Dept. Pharmacol., U. Toronto, Ontario, Canada), and Y. Israel. *Biochem J* 118(2):275-281, 1970.

The factors affecting metabolism of ethanol including chronic administration were investigated in rat liver slices. In the presence of 18% O_2, the rate of ethanol disappearance was 16.1 µmole/hr/g tissue and 37.5 µmole/hr/g with 95% O_2. Cyanide strongly inhibited the metabolism of ethanol (10 µmole/hr/g), but its effect was more marked at lower partial pressure of O_2. In the presence of 18% O_2, 0.1 mM 2,4-dinitrophenol produced a 160% increase in the rate of ethanol metabolism, but there was no significant dinitrophenol effect on ethanol with 95% O_2. In another experiment, arsenate at a concentration of 10mM increased ethanol metabolism by 80%, although at 37 and 50 mM, it inhibited the rate of ethanol metabolism. Chronic administration of ethanol for 3 to 4 weeks, in doses of 3 to 8 g/kg per day, increased by 70 to 90% the ability of the liver to metabolize ethanol (controls, 16.1 vs 29.9 µmole/hr/g). Dinitrophenol added to the medium did not further increase the metabolism of ethanol. If chronic administration of ethanol was discontinued for 2 weeks, the rate of ethanol metabolism was lowered to control values and the activating effect of dinitrophenol was recovered. No change in alcohol dehydrogenase activity was found in rat livers in which the metabolism of ethanol had been increased as a result of chronic ethanol treatment, although a 40% increase in the activity of succinate dehydrogenase was observed.

6440 HEPATIC PROTEIN METABOLISM IN THE INFANT RA *(E.)* Czajka, D. M. (Coll. Human Med., Michigan St. U., East Lansing), S. A. Miller and A. B. Browning. *J Nutr* 100(3):309-314, 1970.

Anabolic activity in the infant rat was measured by incorporation of ^{14}C-leucine (0.05 µC) into the liver and into isolated microsomes. The lowest rate of leucine incorporation into the microsomal proteins occurred in 1- and 2-day old rats while the peak of incorporation occurred in 6-day-old rats. The turnover of microsomal protein appeared to increase with age since the 1-day-old rats lost 10% of the microsomal protein radioactivity while the 11-day-old rats lost 60% radioactivity. However, the low turnover of protein seen in younger animals may be due rather to a high rate of reutilization of leucine. Cathepepsin activity which was monitored as a measure of catabolic activity was highest during the neonatal period, indicating a probable high rate of leucine reutilization.

6441 INFLUENCE OF PYRIDOXINE ON TYROSINE TRANSAMINASE ACTIVITY IN MATERNAL AND FETAL RAT LIVER. *(E.)* Susten, S. S. (Food Nutr. Dept., Purdue U., Lafayette, Ind.) and A. Kirksey. *J Nutr* 100(3):369-374, 1970.

The effect of pharmacological doses of pyridoxine (100 mg/100 g wt) on holotyrosine transaminase (HTA) and total tyrosine transaminase activity (TTA) in maternal and fetal rat liver was studied. Intact and adrenalectomized groups received saline injections, cortisol (0.125 mg/100 g wt) or pyridoxine and the animals were sacrificed after 5 hr and tyrosine transaminase activity and total protein concentrations measured. HTA was only slightly higher in control pregnant rats compared to nonpregnant animals while adrenalectomy did not appear to affect holoenzyme activity. TTA levels in pregnant rats were higher than in nonpregnant animals (383, 539 and 613 µmoles/g/hr in intact, nonpregnan animals compared to 572, 839 and 792 for intact pre nant rats for saline, cortisol and pyridoxine treat resp.). Pyridoxine administration tended to raise HTA and TTA except in the adrenalectomized animals. The observation that TTA and HTA were raised in fetuses of rats treated with pyridoxine suggests that the stimulatory mechanism of the enzyme by pyridoxi is active in fetal liver.

6442 LIPID BIOSYNTHESIS IN RAT LIVER SLICES: EFFECTS OF IONS, ATP AND SUBSTRATE CONCENTRATION ON GLYCEROL INCORPORATION. *(E.)* Libert J. P. (Med. Coll. Virginia, Richmond), and P. F. Jezyk. *Biochem Biophys Acta* 210(2):221-229, 1970.

effects of ion (Na^+,K^+,HCO_3^-,HPO_4^{-2},Ca^{++}) com-
ition and ATP and related compounds as well as
strate concentration on glycerol metabolism by
liver slices were studied via ^{14}C-glycerol incor-
ation and chromatographic analysis of lipid extracts.
the ions tested, HCO_3^- (0.5 normal Krebs-Ringer
O_3^-]) decreased label incorporation into lipid
e than 50% but had little effect on label incor-
ation into glycogen; these effects were markedly
centration dependent. Ca^{+2}(3mM) stimulated
lative incorporation 135%) glycerol incorporation
o total lipid in all cases. ATP and related
leotides decreased (relative incorporation 100,
to 62, 53%, resp.) this incorporation in Krebs-
ger solution buffered with Tris or phosphate but
reased it in the presence of HCO_3^- (relative
orporation 8% to 19%). Inclusion of either HCO_3-
ATP in the incubation medium resulted in an
reased percentage of label in the acidic lipid
ction. At saturating substrate concentrations,
e label appeared in lecithin and less in neutral
ids than at low concentrations. Changes in ionic
position or substrate concentration within physio-
ical limits apparently can alter metabolic patterns
erved in isolated tissues, suggesting that such
ameters may be important in the regulation of
id metabolism *in vivo*.

3 COMPARATIVE SENSITIVITY OF THE NUCLEAR AND
MITOCHONDRIAL DNA SYNTHESES TO X-IRRADIA-
N AND TO THE ADMINISTRATION OF A SULFHYDRL RADIO-
TECTOR (AET) IN NORMAL AND REGENERATING RAT LIVER.
) Baugnet-Mahieu, L. (Ctr. Study Nucl. Energy,
, Belgium), R. Goutier and C. Baes. *Biophysik*
):357-366, 1970.

influence of radiation and of a sulfhydryl radio-
tector, aminoethylisothiouronium bromide hydrobro-
e (AET), on synthesis of nuclear (N-) and mito-
drial (M-) DNA in rat liver was studied. Partial
atectomy was performed on rats which later received
ingle X-ray dose (500 or 1,500 R). Rats treated
n AET were injected (150 mg/kg, i.p.) 15 minutes
ore irradiation. Nuclear and mitochondrical DNA
thesis was monitored via ^{14}C-thymidine incorporation
o DNA of livers of normal animals and those killed
to 24 hr after partial hepatectomy. Inhibition of
midine uptake into N-DNA developed rapidly and was
ater than for M-DNA but maximum inhibition was
ched 4 hours post-irradiation for both DNAs. Dose
endency was evidenced with inhibition of M-DNA, the
ibition being greater after 1,500 R than after a
R dose. Time of recovery was also found to be
e-dependent for N-DNA synthesis but the rate of re-
ery was not. AET, which exerts only small inhibi-
y effects on DNA synthesis in normal liver, was
n to inhibit synthesis of both DNA's in regenerating
er. No radioprotection was noted against a 1,500
ose. Irradiation appears to interfere with enzyma-
processes of M- and N-DNA synthesis, but the per-
tence of N-DNA inhibition may be due to a temporary
ck in the cellular cycle.

4 OXIDATIVE PHOSPHORYLATION: THE SPECIFIC BINDING
OF TRIMETHYLTIN AND TRIETHYLTIN TO RAT LIVER
OCHONDRIA. *(E.)* Aldridge, W. N. (Med. Res. Council, Carshalton, England) and B. W. Street. *Biochem J* 118(1):171-179, 1970.

Mitochondria from rat liver homogenates were used to study the binding of trimethyltin and triethyltin to the mitochondria. Scatchard plot analysis showed one binding site having the correct characteristics for the site to which trimethyltin and triethyltin are attached when they inhibit oxidative phosphorylation. For each compound the concentration of the site was 0.8 nmole/mg of protein and the ratios of their affinity constants were the same as the ratio of the concentrations inhibiting oxidative phosphorylation. The binding site was present in a Triton X-100 fraction derived from mitochondria containing only 15% of the original protein. In this preparation ultrasonication rapidly destroyed the site. Dimethyltin and diethyltin did not prevent binding of triethyltin to rat liver mitochondria, whereas triethyl-lead did. Trimethyltin and triethyltin were bound to mitochondria from brown adipose tissue and the results indicated a binding site similar to that in rat liver mitochondria.

6445 STUDIES ON THE METABOLISM OF C_{19} STEROIDS IN RAT LIVER: VII. 18-HYDROXYLATION OF 17-OXO-C_{19} STEROIDS IN RAT LIVER MICROSOMES. *(E.)* Gustafsson, J. A. (Karolinsia Inst., Stockholm, Sweden) and B. P. Lisboa. *Steroids* 15(6):723-735, 1970.

An 18-hydroxylase active on 17β-hydroxy-C^{19} steroids in rat liver microsomes was found to be active on 17-oxo-C_{19} steroids also. Incubation of rat liver microsomes with 4-androstene-3,17-dione, 5α-androstane-3, 17-dione, 3α-hydroxy-5α-androstan-17-one, 3β-hydroxy-5α-androstan-17-one, 17β-hydroxy-4-androsten-3-one, and 17β-hydroxy-5α-androstan-3-one, resulted in the production of 18-hydroxy-4-androstene-3,17-dione, 18-hydroxy-5α-androstane-3,17-dione, 3α,18-dihydroxy-5α-androstan-17-one and 3β,18-dihydroxy-5α-androstan-17-one which were isolated and characterized by thin layer and gas chromatography and mass spectroscopy. The liver may have an important role in extra-adrenal 18-hydroxylation of steroids.

6446 PROTEIN SYNTHESIS IN LIVER AND BRAIN MICROSOMES ISOLATED FROM RATS FED A HIGH PHENYLALANINE DIET. *(E.)* Rudolph, N. (Maimonides Med. Ctr., Brooklyn, N. Y.) and J. J. Betheil. *J Nutr* 100(1): 21-29, 1970.

Rats (21 days old) were fed a diet high in phenylalanine and liver and brain microsomes were studied for their capacity to incorporate amino acid. After appropriate treatment, determination of leucine and phenylalanine pool sizes in microsomes was made by isotope dilution technique. Liver microsomes from rats fed a high phenylalanine diet revealed a 55 and 60% increase in incorporation of labeled leucine and phenylalanine compared with controls. Brain microsomal pools of leucine and phenylalanine showed no differences in size between experimental and control animals. RNA content of liver microsomes and amino acid incorporation by brain microsomes was similar in all groups.

6447 HORMONE ACTION AT THE MEMBRANE LEVEL: II. THE BINDING OF EPINEPHRINE AND GLUCAGON TO THE RAT LIVER PLASMA MEMBRANE.

(E.) Tomasi, V. (U. Rochester Sch. Med. Dent., New York), S. Koretz, T. K. Ray, J. Dunnick and G. V. Marinetti. *Biochim Biophys Acta* 211(1):31-42, 1970.

The binding of glucagon and epinephrine to the different membranes of the rat liver cell was studied and an attempt was made to correlate the hormone binding with adenyl cyclase activity. Both hormones have a 5- to 20-fold higher affinity for the plasma membrane than for nuclear, mitochondrial, or microsomal membranes. The binding of glucagon to the plasma membrane was more rapid than the binding of epinephrine, which was inhibited (control 70 pmoles epinephrine/mg protein/hr, treatment 51) by 100 μg propanolol. A study of several epinephrine analogs (phenylalanine, norepinephrine, DOPA) showed that the 2 ring hydroxyl groups are important in the binding of epinephrine to the membrane. *p*-Chloromercuribenzoate and 5',5'-dithiobis-2-nitrobenzoic acid both inhibited epinephrine binding (control 30; treatment 0.5 and 2, resp.) and glucagon binding, thus implicating SH groups on the receptor proteins. Heating membranes for 1 min at 100° did not affect hormone binding but nearly inactivated the adenyl cyclase. Heating for 5 min at 100° abolished the hormone binding (control 30; treatment 2); hence hormone receptor proteins are probably separate from the adenyl cyclase. Extraction of membrane-bound epinephrine with chloroform-methanol removed 20-25% of the bound hormone, indicating at least 2 types of membrane-bound epinephrine. The receptor proteins were eluted just ahead of the void volume (following isolation by column chromatography on Sephadex G-200) and were separated from the major adenyl cyclase activity.

6448 QUANTITATIVE AND METABOLIC CHANGES OF HEPATIC COLLAGENS IN RATS AFTER CARBON TETRACHLORIDE POISONING.

(E.) Hirayama, C. (Fac. Med., Kyushu U., Fukuoka, Jap.), I. Morotomi and K. Hiroshige. *Biochem J* 118(2):229-232, 1970.

Quantitative and metabolic changes of hepatic collagens were studied in rats following carbon tetrachloride poisoning. Hepatic collagen was composed of 3.5% neutral-soluble collagen, 4.9% acid-soluble collagen and 91.6% insoluble collagen. During subacute poisoning with carbon tetrachloride, hepatic contents of insoluble collagens expressed as μg/g liver) was markedly increased (control 132 vs 458 and 550 for 4 and 8 weeks, resp.), whereas those of soluble collagens did not change. In labeling studies with $[^{14}C]$-proline *in vitro*, specific radioactivities of neutral soluble, acid soluble and insoluble collagens of the liver were 233,000, 69,000 and 830 dpm/μmole of hydroxyproline, resp., after 1 hr. After 8 weeks of carbon tetrachloride poisoning, specific radioactivities (dpm/μmole of hydroxyproline) increased (neutral-soluble, control, 233 vs 772; acid-soluble, control 69 vs 461) while that of insoluble collagen decreased (control 0.83 ± 0.16 vs 0.50 ± 0.04). During recovery from poisoning, increased specific radioactivities of soluble collagen decreased towards the normal range and insoluble collagen further decreased. Hepatic collagenolytic activity solubilizing insoluble collagen, which differs from mammalian collagenase, decreased under conditions of subacute poisoning and also during recovery from subacute poisoning.

6449 EFFECT OF CARBON TETRACHLORIDE AND OTHER INHIBITORS OF DRUG METABOLISM ON THE METABOLISM AND ACTION OF ESTRADIOL-17β AND ESTRONE IN THE RAT.

(E.) Levin, W. (Hoffmann-La Roche, Nutley N. J.), R. M. Welch and A. H. Conney. *J Pharmacol Exp Ther* 173(2):247-255, 1970.

The effect on the metabolism of estradiol-17β-6,7-H^3 or estrone-6,7-H^3 of CCl_4 treatment on immature fema rats was studied *in vivo* and *in vitro*. The administ tion of 0.67 ml of CCl_4 inhibited by 75 to 80% the ability of the liver microsomes to metabolize estradiol-17β and estrone to more polar metabolites. The inhibitory effect of CCl_4 administration on estrogen metabolism *in vitro* was reflected *in vivo* by an alte ed total body metabolism of estradiol-17β and estron by potentiation of the uterotropic action of these estrogens and by an increased concentration of these estrogens in the uterus. Pretreatment of rats with tetrachloroethylene did not influence the action of estrone. SKF 525A or desmethylimipramine potentiate the uterotropic action of estrone and increased the concentration of estrogen in the uterus.

6450 SYNTHESIS AND SECRETION OF α_2-(ACUTE PHAS GLOBULIN BY THE ISOLATED PERFUSED LIVER FROM INJURED ADULT RATS.

(E.) Sarcione, E. J. (Roswell Park Mem. Inst., Buffalo, N. Y.). *Biochemistr* 9(15):3059-3062, 1970.

The synthesis and secretion of α_2-(acute phase) globulin was studied by the following DL-^{3}H-leucine (100 μC) incorporation in isolated perfused liver from normal and injured (1 ml s.c. commercial grade steam-distilled wood turpentine) rats. Perfusion o livers from the injured animals with blood from injured animals produced a rapid increase (after an initial 45 min delay) in ^{3}H-leucine incorporation into α_2-(acute phase) globulin (specific activity of 175 dpm/mg protein at 45 min to 1575 dpm/mg protein at 180 min) while livers and blood from normal animals produced only slight increases in incorporation (88 dpm/mg protein at 45 min to 175 dpm/mg protein at 180 min) and normal livers perfused wit blood from injured animals produced no measurable incorporation (formed elements in the blood are no the source of the globulin). Incorporation of the radioactivity into plasma albumin during the same perfusions was rapid with the specific activity of albumin from plasma perfusing the livers of injure rats consistently higher than that from plasma perfusing the livers of normal animals (specific acti ranges over 45 to 180 min were 1000 to 49000 dpm/m protein and 500 to 4100 dpm/mg protein, resp.). I munoelectrophoresis of the plasma perfusates using monospecific rabbit antiserum reagent to the rat α_2-(acute phase) globulin produced only 1 precipit arc in the slow α_2 region and radioautography of t immunoelectrophoretic patterns revealed labeling o of the perfusate from injured rats indicating that the incorporation is not a nonspecific binding of

-leucine to the precipitin arc. The appearance of
-(acute phase) globulin after injury is apparently
e to *de novo* synthesis and secretion rather than to
e release of stored globulin.

1 INHIBITION BY α-AMANITIN OF INDUCTION OF
TYROSINE TRANSAMINASE IN RAT LIVER BY
TISOL. *(E.)* Sekeris, C. E. (Physiol. Chem. Inst.,
burg, Germany), J. Niessing and K. H. Seifart.
S Letters 9(2):103-104, 1970.

of α-amanitin, an inhibitor of mammalian RNA
ymerase, was made to study whether the induction
tyrosine transaminase by cortisol is dependent on
synthesis or is independent of transcription.
r groups of male rats were used in the study: one
eiving amanitin (120 μg) and cortisol (2 mg), a
ond receiving amanitin alone, a third cortisol
y and the fourth group served as control. Tyro-
e transaminase was assayed by a radiochemical
hod. Cortisol administration led to a rapid
mulation of tyrosine transaminase, whereas pre-
atment with amanitin suppressed hormonal induction
the enzyme. Amanitin alone caused a decline of
enzyme level which was reversible by cortisol.
nitin suppressed RNA synthesis up to 85% within 3
4 hr after administration and abolished hormonal
uction of the liver enzyme. Induction of tyro-
e transaminase appears to be dependent on *de*
o synthesis of RNA.

2 DISTRIBUTION OF RADIOACTIVE HEMOPROTEIN
AND CO-BINDING PIGMENT IN ROUGH AND SMOOTH
OPLASMIC RETICULUM OF RAT LIVER. *(E.)* Levin, W.
llcome Res. Lab., Tuckahoe, N. Y.), A. P. Alvares
R. Kuntzman. *Arch Biochem Biophys* 139(1):230-235,
).

incorporation of radioactivity into the hemo-
teins of the rough and smooth endoplasmic reti-
m (isolated by the method of Dallner) after the
nistration of ^{3}H-δ-aminolevulinic acid (0.24 mg/
.v.) or L-leucine-4,5-^{3}H (0.01 mg/kg i.v.) was
lied in the microsomal fraction of rat liver.
in 5 min after aminolevulinic acid administration
oactivity appeared in the CO-binding particles
oth endoplasmic reticulum fractions and reached
ximum in 30 min with the rates of incorporation
same in the rough and smooth fractions; ^{3}H-leucine
rporation was rapid with maximum specific acti-
(cpm/mg protein) for rough endoplasmic reticulum
rring at 10 min (14000) and for smooth endoplasmic
culum at 20 min (15000). The decrease of radio-
vity with time from these fractions was biphasic
of the fast phase was 7 hr and of the slow phase
r) indicating the presence of at least 2 hemopro-
s. An excellent correlation between the ratios
adioactivity and CO-binding pigment in rough/
th fractions (0.70 and 0.68, resp.) supports the
thesis that the radioactivity found in the CO-
ing particles is incorporated only into the CO-
ing pigment.

PROGESTERONE METABOLISM IN REGENERATING
RAT LIVER. *(E.)* Crane, M. (Harvard Med.
, Boston, Mass.), J. Loring and C. A. Villee.
crinology 87(1):80-83, 1970.

The activities of specific hepatic enzymes (female rat) concerned with the metabolism of progesterone were examined following partial hepatectomy during the process of regeneration. The activities of these enzymes decreased 10% within 16 hr following partial hepatectomy and became undetectable 4 to 5 days postoperatively. Enzymatic activities began to reappear at about the 7th day (60%) and had reached normal levels by the 60th day of regeneration. Hence, following hepatectomy, all the metabolic energy of the liver is probably turned toward the regenerative process. The fraction of the radioactivity present in the several metabolites from incubations of progesterone with liver tissue 7 days postoperatively suggests that ring A reductases appear earlier than the 20α-steroid reductase.

6454 KINETICS OF INDOCYANINE GREEN REMOVAL FROM THE BLOOD. *(E.)* Paumgartner, G. (Clin, U. Vienna, Austria), P. Robst, R. Kraines and C. M. Leevy. *Ann NY Acad Sci* 170(1):134-147, 1970.

The kinetics of the removal of indocyanine green (ICG) dye from the blood were studied in 29 male rats which received one of 6 doses of dye (0.25, 0.5, 1.0, 1.5, 2.0 and 2.5 mg/100 g), injected through a jugular catheter. Blood samples were collected at 0, 2, 3, 4, 5, 6, 9, 12 and 15 min after injection and were analyzed by spectrophotometric methods for ICG concentration and clearance rate. Initial fractional clearance decreased progressively from 0.447 mg/min to 0.100 mg/min, when the dose of ICG was increased from 0.25 to 2.5 mg/100 g. Removal of ICG increased with the dose of dye administered in a nonlinear fashion. Application of the Michaelis-Menten equation to the data obtained a maximum initial dye removal rate of 0.29 mg/100 g/min and a Km of 0.39. Intragastric administration of 0.2 ml of carbon tetrachloride produced a 70% decrease (from 0.29 to 0.09 mg/100 g/min) in the maximum initial dye removal rate, which returned to normal within 8 days. Hepatic uptake of ICG was directly measured by injection of I^{131}-serum albumin prior to dye injection, and by determination of radioactivity in blood and in liver homogenates. Application of the Michaelis-Menten equation to the data showed a maximum hepatic dye uptake of 6.54 mg/100 g liver/min, and a Km of 0.44. In rats injected with crystalline bilirubin (2mg/100 g i.v.) or with rifamycin SV (3 mg/100 g), there was no significant change in the maximum hepatic uptake of the dye. The Km in rats receiving bilirubin increased to 1.29 compared to a control value of 0.42, and increased in rats receiving rifamycin SV to 3.02 from a control value of 0.40 The Km increase indicates a competitive inhibition of dye uptake.

6455 INFLUENCE OF FIBRINOLYTIC PRODUCTS ON HEPATIC RELEASE AND SYNTHESIS OF FIBRINOGEN. *(E.)* Barnhart, M. I. (Wayne St. U. Med., Detroit, Mich.), D. C. Cress, S. M. Noonan and R. T. Walsh. *Thromb Diath Haemorrh* (supp 39):143-159, 1970.

6456 BILIRUBIN IN THE FETAL SHEEP. *(E.)* Alexander, D. P. (St. Mary Hosp. Med. Sch., London, England), W. H. H. Andrews, H. G.

Britton and D. A. Nixon. *Biol Neonate* 15(1-2):103-111, 1970.

6457 UPTAKE OF LABELED HISTONES BY ISOLATED PERFUSED RAT LIVER AND BY VARIOUS ORGANS OF THE INTACT MOUSE. *(E.)* Rudiger, W. (Inst. Biochem., U. Saarlandes, Saarbrucken, Germany) and W. Klose. *Experientia* 26(5):496-498, 1970.

6458 RNA POLYMERASE ACTIVITY IN LIVER NUCLEI OF INTACT AND ADRENALECTOMIZED γ-IRRADIATED MICE. *(E.)* Yatvin, M. B. (U. Wisconsin Med. Sch., Madison). *Experientia* 26(5):490, 1970.

6459 ACTIVITY OF HISTONE DEACETYLASE IN RAT LIVER AND NOVIKOFF HEPATOMA. *(E.)* Libby, P. R. (Roswell Park Mem. Inst., Buffalo, N. Y.). *Biochim Biophys Acta* 213(1):234-236, 1970.

6460 METABOLISM OF LYNESTRENOL TO NORETHISTERONE BY LIVER HOMOGENATE. *(E.)* Mazaheri, A. (Roy. Postgrad. Med. Sch., London, England), K. Fotherby and J. R. Chapman. *J Endocr* 47(2):251-252, 1970.

6461 TRIELAIDIN INGESTION AND THE FATTY ACID COMPOSITION OF LIVER AND PLASMA LIPIDS IN THE RAT. *(Fr.)* Munsch, N. (Inst. Sci. Res. Cancer, Villejuif, France). *Ann Nutr* 24(3):21-40, 1970.

6462 THE CHANGES IN GLUCOSE PRODUCTION AND THE ACTIVITIES OF ASPARTATE AND ALANINE AMINOTRANSFERASES IN CHICKEN LIVERS AS A FUNCTION OF AGE. *(E.)* Sarkar, N. K. (Anim. Res. Inst., Canada Dept. Agric., Ottawa). *Life Sci* 9(12):667-673, 1970.

6463 CHOLESTEROL SYNTHESIS IN THE GUINEA PIG GALL BLADDER. *(E.)* Scott, A. J. (U. Otago Med. Sch., Dunedin, New Zealand). *Proc Univ Otago Med Sch* 48(1):21-22, 1970.

6464 ON THE METABOLIC HETEROGENEITY OF RAT LIVER PHOSPHATIDYLINOSITOL. *(E.)* Akino, T. (Sapporo Med. Coll., Japan), and T. Shimojo. *Biochim Biophys Acta* 210(2):343-346, 1970.

6465 DEHYDROGENATION OF GLUCOSE AND XYLOSE CATALYZED BY RAT AND SHEEP LIVER MICROSOMAL AND SOLUBLE FRACTIONS. *(E.)* Metzger, R. P. (Dept. Phys. Sci., San Diego St. Coll., Calif.), E. F. F. Copp, S. A. Metzger and A. N. Wick. *Metabolism* 19(8):587-597, 1970.

6466 THE REGULATION OF RAT LIVER XANTHINE OXIDASE: CONVERSION OF TYPE D (DEHYDROGENASE) INTO TYPE O (OXIDASE) BY A THERMOLABILE FACTOR, AND REVERSIBILITY BY DITHIOERYTHRITOL. *(E.)* Stirpe, F. (Inst. Gen. Path., U. Bologna, Italy) and E. Della Corte. *Biochim Biophys Acta* 212(1):195-197, 1970.

6467 INVESTIGATIONS OF THE TOXIC EFFECT OF OBIDOXIM (TOXOGONIN) IN HUMAN LIVER. *(Ger.)* Boelcke, G. (Med. Clin. Polyclin., U. Gottingen, Germany), W. Creutzfeldt, W. D. Erdmann, J. W. Gaaz and G. Jacob. *Deutsch Med Wschr* 95(21):1175-1178, 1970.

6468 THE VARIATION IN THE ACTIVITIES OF HEPATI RIBONUCLEASE AND RIBONUCLEASE INHIBITOR I CHICKEN LIVERS AS A FUNCTION OF AGE. *(E.)* Sarkar, N. K. (Anim. Res. Inst., Canada Dept. Agric., Ottaw *Life Sci* 9(12):675-681, 1970.

6469 TIRANDAMYCIN: INHIBITION OF OXIDATIVE PHOSPHORYLATION IN RAT LIVER MITOCHONDRI *(E.)* Reusser, F. (Upjohn Co., Kalamazoo, Mich.). *Infect Immun* 2(1):82-88, 1970.

6470 INHIBITORY PROPERTIES OF RAT LIVER HOMOGENATE ON GLYCOGEN SYNTHESIS. *(E.)* Figueroa, E. (Sch. Med. U. Chile, Santiago) and P. Vega. *Acta Physiol Lat Amer* 20(1):43-53, 1970.

6471 LIVER FUNCTION AND BLOOD FLOW AT HIGH ALTITUDE. *(E.)* Ramsoe, K. (U. Hosp. Copenhagen, Denmark), S. Jarnum, R. Preisig, J. Tauber, N. Tygstrup and H. Westergaard. *J Appl Physiol* 28(6):725-727, 1970.

6472 RETICULOENDOTHELIAL STIMULATION AND DRUG METABOLISM. *(E.)* Barnes, D. W. (Med. Coll. Virginia, Richmond) and W. R. Wooles. *J Reticuloendothel Soc* 7(6):684-694, 1970.

6473 FACTORS AFFECTING NET FIBRINOGEN BIOSYNTHESIS BY THE ISOLATED PERFUSED RAT LIVER: EFFECTS OF BOVINE THROMBIN GIVEN PARENTERA TO LIVER DONORS, AND EFFECTS OF SIX-DAY FAST, HOR AND AMINO ACID SUPPLEMENTS. *(E.)* Miller, L. L. (U. Rochester Sch. Med. Dent., N. Y.) and D. W. John. *Thromb Diath Haemorrh* (supp 39):127-141, 1970.

6474 DEOXYRIBONUCLEIC ACID BIOSYNTHESIS IN MITOCHONDRIA: PURIFICATION AND GENERAL PROPERTIES OF RAT LIVER MITOCHONDRIAL DEOXYRIBONUCLEIC ACID POLYMERASE. *(E.)* Meyer, R. R. (Dept. Biol. Sci., U. Cincinnati, Ohio) and M. V. Simpson. *J Biol Chem* 245(13):3426-3435, 1970.

5 THE INFLUENCE OF ALANINE ON THE GLUTAMATE/OXOGLUTARATE X NH_4^+ RATIO IN THE
NEA PIG LIVER. *(E.)* Haeckle, R. (Med. Coll.
nover, Germany) and H. Haeckle. *FEBS Letters*
):15-16, 1970.

6 THE CHARACTERIZATION AND STEREOCHEMISTRY OF BIOSYNTHESIS OF DOLICHOLS IN RAT LIVER.
) Gough, D. P. (Dept. Biochem., U. Liverpool,
land) and F. W. Hemming. *Biochem J* 118(1):163-166,
0.

7 AN ELECTRON MICROSCOPIC STUDY ON REGENERATING RAT LIVER AFTER PARTIAL
ATECTOMY: I. ULTRASTRUCTURAL ALTERATIONS OF
ATOCYTES IN EARLY POST-OPERATIVE STAGE. *(Jap.)*
ura, A. (Sapporo Med. Coll., Japan). *Sapporo*
J 35(4):265-288, 1969.

8 INHIBITORS OF CHOLESTEROL BIOSYNTHESIS: II. EFFECTS OF BENZOQUINONE AND NAPHTHO-
NONE DERIVATIVES ON THE INCORPORATION OF ACETATE-
⁴C INTO CHOLESTEROL IN RAT LIVER HOMOGENATES.
p.) Ozawa, H. (Pharm. Inst., Tohoku U., Sendai,
an) and H. Ichikawa. *J Pharm Soc Jap*
4):480-485, 1970.

9 HORMONAL AND DIETARY CONTROL OF ENZYMES IN THE RAT: I. ROLES OF THE PANCREAS
ADRENALS IN REGULATION OF LIVER SERINE DE-
RATASE ACTIVITY. *(E.)* Ishikawa, E. (Inst.
tein Res., Osaka U., Japan) and K. Nakajima.
iochem 67(5):685-692, 1970.

0 METABOLISM OF ISOLATED PERFUSED RAT LIVER FOLLOWING IRRADIATION *IN VITRO*.
r.) Strahler, F. (Inst. Biophys., Radiat.
l., U. Hamburg, Germany) and I. Sinn.
ahlentherapie 139(4):496-505, 1970.

1 HORMONAL REGULATION OF TRANSFER RNA IN HEN LIVER. *(Fr.)* Beck, G. (Fac. Sci.
asbourg, France), D. Hentzen and J. P. Ebel.
chim Biophys Acta 213(1):55-67, 1970.

2 HORMONAL REGULATION OF TRANSFER RNA IN THE RAT LIVER. *(Fr.)* Beck, J. P. (Fac.
. Strasbourg, France), F. Stutinsky, G. Beck,
Tambiah and J. P. Ebel. *Biochim Biophys Acta*
(1):68-76, 1970.

3 FUNCTIONAL DIFFERENTIATION OF THE FETAL LIVER OF THE RAT. EFFECT OF HYDROCORTISONE
N THE GLYCOGEN SYNTHESIS BY FETAL HEPATOCYTES IN
ULTURE. *(Fr.)* Plas, C. (Fac. Sci. Marne, France),
Chapeville and R. Jacquot. *C R Acad Sci*
(23):2846-2849, 1970.

6484 PYRIDOXINE EFFECTS ON CYSTATHIONINE SYNTHASE IN RAT LIVER. *(E.)* Finkelstein, J. D. (George Washington U. Sch. Med., Washington, D. C.) and F. T. Chalmers. *J Nutr* 100(4):467-469, 1970.

6485 MECHANISTIC STUDIES OF BEEF LIVER MITOCHONDRIAL AMINE OXIDASE: XVIII. AMINE OXIDASE. *(E.)* Yasunobu, K. T. (Dept. Biochem. Biophys., U. Hawaii, Honolulu), S. Oi, K. Shimade and M. Inamasu. *Arch Biochem Biophys* 139(1):28-37, 1970.

6486 INSULIN, FREE FATTY ACIDS, AND STIMULATION OF HEPATIC GLUCONEOGENESIS DURING FASTING. *(E.)* Schimmel, R. J. (U. Pittsburgh Sch. Med., Pa.) and E. Knobil. *Amer J Physiol* 218(6):1540-1547, 1970.

6487 *IN VIVO* STUDIES ON THE METABOLISM OF PHOSPHATIDYLETHANOLAMINE: II. THE DETERMINATION OF POOL SIZES AND SPECIFIC ACTIVITIES OF ETHANOLAMINE, PHOSPHORYLETHANOLAMINE AND GLYCERYLPHOSPHORYLETHANOLAMINE IN MOUSE TISSUES AFTER THE INTRAPERITONEAL ADMINISTRATION OF ^{14}C-ETHANOLAMINE. *(Jap.)* Okabe, H. (Sapporo Med. Coll., Japan). *Sapporo Med J* 36(3-4):84-94, 1969.

6488 THE METABOLISM OF PROGESTERONE IN RABBIT LIVER. *(Jap.)* Nishimura, T. (no affil). *Advances Obstet Gynec* 22(2):93-104, 1970.

6489 EFFECT OF LINOLEATE DEFICIENT DIET ON LIPID METABOLISM OF MOUSE LIVER. *(Jap.)* Matsuda, S. (Sapporo Med. Coll., Japan). *Sapporo Med J* 36(3-4):105-110, 1969.

6490 ESTROGENS AND HEPATIC FUNCTION. *(Fr.)* Bercovici, J. P. (Hosp. Paris, France) and P. Mauvais-Jarvis. *Presse Med* 78(22):1013-1018, 1970.

6491 PERFUSION OF THE ISOLATED LIVER: VARIATIONS IN ORGANOCELLULAR ENZYMATIC ACTIVITY AS A FUNCTION OF TIME. *(It.)* Tenconi, L. (Med. Clin., U. Milan, Italy), C. Santambrogio, F. Civardi, N. Massari and U. Samaja. *Minerva Med* 61(32):1711-1714, 1970.

- P:Morph (6290)(6291)(6292)(6293)(6300)(6303)(6307)(6309)(6312)(6313)(6315)(6316)(6317)(6318)(6320)(6323)(6324)(6325)(6327)(6329)(6331)(6335)(6336)(6337)(6338)(6339)(6341)(6343)(6347)
- P:Absorp (6362)(6377)
- P:Secr:Panc (6416)
- Diagproc (6565)
- D:Livbil (6761)(6767)(6772)(6774)(6781)(6794)(6814)(6821)(6823)(6826)
- D:Livbil:A.Nonv.Hep (6831)(6832)(6839)(6840)(6843)(6845)(6848)(6849)(6852)
- D:Livbil:Cirrh (6902)
- D:Livbil:Gallb (6911)
- D:Gen (6934)(6939)(6990)(7000)(7003)
- D:Gen:Parasit (7018)

SECRETION AND METABOLISM

Intestine

6492 STUDIES ON THE PHOSPHOLIPASES OF RAT INTESTINAL MUCOSA. *(E.)* Subbaiah, P. V. (Dept. Biochem. Indian Inst. Sci., Bangalore, India) and J. Ganguly. *Biochem J* 118(2):233-239, 1970.

Subcellular distribution and some characteristics of the phospholipases of rat intestinal mucosa were studied by following their activity levels (phospholipase B and lysolecithinase activities were determined by the method of Skidmore and Entenmann and phospholipase A activity was determined by the method of Subbaiah, Raghavan, and Ganguly). Whole mucosal homogenates were active (μEq/hr/mg protein) against lecithin (0.40), lysolecithin (3.50), and cephalin (2.10) substrates, and when the homogenates were fractionated, 62.3% of total phospholipase A activity was found in the microsomal fraction while both phospholipase B and lysolecithinase activities were divided between the microsomal (26% and 34%, resp.) and soluble (47% and 45%, resp.) fractions. Mucosa fractionation revealed 43.2% and 42.0% of phospholipase A activity in the brush border and brush-border-free particulate, and 25% and 37% of phospholipase B activity and 40% and 45% of lysolecithinase activity in the brush-border-free particulate and soluble fractions, resp. Phospholipase A pH optimum was 8.6 (Tris-maleate buffer) and phospholipase B and lysolecithinase both had an optimum of 6.5 (phosphate buffer). Effects of deoxycholate, potassium oleate, calcium ion, EDTA, p-hydroxymercuribenzoate, heating and acetone-butanol drying in activating and inhibiting the enzymes showed phospholipase A and phospholipase B activities to be markedly different while phospholipase B and lysolecithinase activities were more similar. When lecithin with 1-^{14}C-oleic acid in the β-position was used as substrate for phospholipase A (*Crotalus adamenteus* venom) 94.5% of the radioactivity appeared in the free fatty acids released (thin layer separation), indicating the specificity of phospholipase A for the β-ester linkage.

6493 FATTY ACIDS IN THE LUMEN OF THE SMALL INTESTINE OF MAN FOLLOWING A LIPID-CONTAINING MEAL. *(E.)* Eastwood, M. A. (Roy. Infirm., Edinburgh, Scotland) and D. Hamilton. *Scand J Gastroent* 5(3):225-230, 1970.

The concentration patterns of fatty acids along the small intestine were studied for 3 hr following the ingestion of a triglyceride-containing meal in 6 normal human subjects, aged 21 to 34 years. The test meal was an emulsion of skim milk, cream, whole milk products incubated with rennet, and 2.0 g of polyethylene glycol added for protein absorption measurements. Gastric emptying time was measured and determination of amount of dietary lipid, α-amino nitrogen and polyethylene glycol from intestinal aspirates were made. In 2 subjects, the rate for gastric emptying of lipids was not uniform, but in all subjects there was nearly 100% gastric emptying within 3 hr. The initial concentrations of free fatty acids diminished over the 3 hr at all levels of the intestine, and decreased with the distance of the sample site from the nose. In one subject, the concentration (μmoles/ml) of free fatty acids, sampled at a site 190 cm from the nose decreased from a value of 22 at the first hour to 9 at the second hour and to 4 at the third hour; and at a sample site 225 to 260 cm from the nose, the three respective hourly values were 7.9, 1.3 and 3.0 μmoles/ml. At all sampling sites in all subjects, there was only a small concentration of glycerides (range: 0.10 to 2.12 μmoles/ml) due to efficient absorption. There was also a significant correlation between the proportions of individual free fatty acids in the small intestine and the fatty acids of the dietary triglycerides. The molar ratio of oleic acid to stearic acid in the test meal was 2.3 and a sample site distance of 80 to 100 cm from the nose the ratio was 2.0 at the first hour, 1.8 at the second hour and 1.8 at the third hour following meal ingestion, showing that oleic acid is more efficiently absorbed than stearic acid, although at a sample site distance of 200 to 270 cm, the ratio values for these three times were 1.1, 1.3 and 1.0, resp.

6494 EFFECT OF DIETARY PROTEIN ON THE ENZYME FROM RAT AND HUMAN INTESTINE WHICH CONVERTS β-CAROTENE TO RETINAL. *(E.)* Gronowska-Senger, A. (Dept. Hyg., Warsaw Agric. U., Poland) and G. Wolf. *J Nutr* 100(3):300-308, 1970.

The influence of dietary protein on carotene dioxygenase, the intestinal enzyme which converts β-carote to retinal, was studied in intestinal mucosal extrac from young male human subjects and also from rats fe normal diets and diets with varying protein concentr tions. Rats were maintained on a normal 20% protein diet, or on a 5, 10, or 40% protein diet with casein replacing sucrose. Human subjects were fed either a *ad lib* diet or a low protein diet for 8 to 9 days. Both human subjects and experimental animals were fasted for 12 hr before duodenal mucosal specimens w obtained and assayed for carotene dioxygenase (Goodm method). Enzyme levels for male rats pair-fed on 5, 10, 20 and 40% protein intake were resp., 1.24, 3.36 2.10, and 1.60 μmoles/mg protein from the supernatan fractions. Enzyme levels for female rats fed *ad lib* were 5.20 and 3.34 μmoles/mg protein from the supernatant fraction. In both sexes and in pair-fed and *ad lib* feedings, the maximal activity of enzyme leve per total mucosa and per DNA cell content was reached at a 10% protein intake level rather than at the normal 20% protein dietary level. The possibili of an existing coenzyme or of a decreased pancreati secretion was ruled out by subsequent testing. Prot synthesis and polyribosome aggregations were highest in rats fed a 10% protein diet. The maximum protei incorporation value of ^{14}C-leucine at 15 min incubation was 2200 cpm for microsomal preparations from on the 10% protein diet, and for rats on the 20% an 40% diets the corresponding values were 1200 cpm an 800 cpm, resp. Duodenal mucosa obtained from norma human volunteers on the protein-free diet showed sp cific enzyme activity similar to that in rat mucosa but there was no significant difference in enzyme activity between the protein-free and the control s jects.

6495 THE SUPERSENSITIVITY TO 5-HYDROXYTRYPTAMI INDUCED BY COCAINE IN TERMINAL PART OF GUINEA PIG ILEUM. *(E.)* Dzoljic, M. (Fac. Med. Rij

ugoslavia), B. Benazic and T. Miculinic. *Pharmacol-
y* 3(5):282-290, 1970.

96 EXPERIENCE WITH AN ARTIFICIAL SPHINCTER.
(Ger.) Grunert, R. D. (Elzweg, Germany)
erapiewoche 20(26):1265-1266, 1970.

- P:Morph (6296)(6310)(6344)(6346)
- P:Absorp (6349)(6350)(6358)(6361)(6363) (6364)(6368)(6369)(6370)
- P:Motil (6388)
- P:Secr:Stom (6392)
- P:Secr:Hepatobil (6487)
- P:Gen (6511)
- D:Stomduo (6608)

GENERAL

97 THE ANAEROBIC BACTERIAL FLORA OF THE MOUSE
CECUM. *(E.)* Gordon, J. H. (Rockefeller U.,
d R. Dubos. *J Exp Med* 132(2):251-260, 1970.

e anaerobic species of bacterial flora present in
e cecum of specific-pathogen-free mice (COBS-CD-1
rain) were studied using refinements of a method
sed on Moore's modification of Hungate's anaerobic
lture technique. The main modifications of this
y anaerobic culture technique utilize a prereduced
ar culture medium and also the removal of all
aces of oxygen from the gases used by passage
rough a hot copper oven. The most common morpho-
gic type of bacteria observed by this method were
tapered rods, which formed characteristic "speck-
d" or "mosaic" colonies on agar plates. The
rphologic forms of bacteria observed included large
ered rods, tapered rods with visible flagella,
oreformers, "doughnut-shaped" rods, and "spiral"
ganisms. Bacteria species of the genera *Fuso-
terium*, *Eubacterium* and *Clostridium* were iden-
ied, but most of the anaerobic cultures belonged
species that have not yet been identified. This
, modified process yielded a greater variety of
terial types and more numerous colonies than did
older, previously used method. With the old
hod, only the smaller tapered organisms appeared
the agar plates, although larger ones, with and
hout spores, were observed under the phase micro-
pe. The new technique allowed cultivation of two
the larger tapered varieties and also of a tapered
with spores.

8 INTESTINAL VASCULAR RESPONSES TO GUT PRESSURE
AND ACETYLCHOLINE *IN VITRO*. *(E.)* Brobmann,
F. (U. Oklahoma Med. Ctr., Oklahoma City), E. D.
obson and G. A. Brecher. *Angiologica* 7(3):129-139,
0.

effect on blood flow of active and passive eleva-
n of intraluminal pressure, and acetylcholine in
denervated gut was studied in an *in vitro* prepara-
n of ileum segments from mongrel dogs of both sexes
to 20 kg), where the vessels were perfused with
or blood from a reservoir. Blood flow increased
n acetylcholine and decreased with elevated gut
ssure whether induced actively or passively.
thmical alterations of intraluminal pressure
sively did not increase blood flow by a "massage
ect" over that existing at a corresponding constant mean pressure. With each rhythmical pressure rise arterial inflow decreased and venous outflow increased whereas the reverse occurred with each pressure drop. Loss of vascular and visceral tonus by poisoning the tissue with sodium azide resulted in a marked increase in blood flow. Stepwise pressure elevations in the lumen of the poisoned gut counteracted the flow systematically. Resistance to intestinal blood flow apparently is consistently raised by active as well as passive gut pressure elevations, and the vasodilation induced by acetylcholine is opposed by these mechanical effects to varying degrees.

6499 MESENTERIC VASOACTIVITY ASSOCIATED WITH EATING AND DIGESTION IN THE CONSCIOUS DOG. *(E.)* Vatner, S. F. (Dept. Med., U. California, San Diego), D. Franklin and R. L. Van Citters. *Amer J Physiol* 219(1):170-174, 1970.

Mesenteric blood flow, arterial pressure and cardiac output were studied in conscious dogs at rest and after feeding to elucidate the mechanisms involved in the vascular changes associated with eating. Ultrasonic or electromagnetic flowmeters were placed around the ascending aorta and mesenteric artery and systemic pressure monitored by chronically implanted gauges so that recordings were made both before and for 2 to 7 hr following feeding. Anticipation and ingestion of food produced increases in cardiac output (63%), heart rate (78%) and aortic pressure (31%) whereas mesenteric flow transiently fell (10%). Within 5 to 15 min after ingestion, mesenteric flow began to rise and continued to increase until 50 to 60 min post-prandially when it returned to control values. Mesenteric postprandial dilatation was evident both after adrenergic blockade from phenoxybenzamine (15 mg/kg, i.v.) and propranalol (3 mg/kg), but did not occur following atropine administration (0.1 to 0.2 mg/kg).

6500 EFFECTS OF DISTENSION AND ACETYLCHOLINE ON INTESTINAL BLOOD FLOW *IN VIVO*. *(E.)* Brobmann, G. F. (U. Oklahoma Med. Ctr., Oklahoma City), E. D. Jacobson and G. A. Brecher. *Angiologica* 7(3):140-146, 1970.

Determination of blood flow changes with mechanical inflation of the intestine and the effects of acetylcholine (ACh) on blood flow *in vivo* were investigated in dogs (15 to 20 kg). Blood flow was measured by electromagnetic flowmeter in a branch of the superior mesenteric artery to an ileal segment and arterial pressure and venous outflow was also recorded from the segment. ACh (0.4 μg) was injected at a close intra-arterial site. An air pump was connected to the isolated segment, tied at both ends, to provide mechanical distension. At 0 intraluminal pressure, arterial inflow and venous outflow were 8 ml/min. With a rise in gut pressure to 40 mm Hg, both arterial and venous flow decreased (to 6 ml/min) at first (for 1/2 min) following which arterial flow began to rise although without a return to control values. ACh produced hyperemia during gut distension and enhanced blood flow for several minutes. These findings correlate with results from similar *in vitro* experiments.

6501 THE LYMPHATIC PUMP OF THE INTESTINAL VILLUS OF THE RAT. *(E.)* Collan, Y. (2nd Dept. Path., U. Helsinki, Finland) and T. V. Kalima. *Scand J Gastroent* 5(3):187-196, 1970.

The structure of the lymphatic system of the intestinal villus was studied by electron microscopy in 5 rats. In the apical part of the villus, semicircular folds with no fibrillar structure in the outer walls were observed and when the visible portions of 18 lymph vessels were examined, the 72 junctions were found which could be classified as valve-like or more complicated. A thick network of collagen fibers in the subepithelial capillary system extended into the lamina propria and joined the network of fibers surrounding the lymphatics, and anchoring filaments were attached to fibroblasts, Schwann's cells, muscle cells, macrophages, and mast cells while mobile cell components had no fibrillar structures surrounding them. Muscle cells were always located perilymphatically and seemed to be connected to the lymphatic cells in some places through anchoring filaments, further substantiating the lymphatic pump concept.

6502 DECREASED ESTERIFICATION OF [^{3}H] CHOLESTEROL BY SERUM FROM PARTIALLY HEPATECTOMIZED RATS *IN VITRO*. *(E.)* Fex, G. (Dept. Chem., U. Umea, Sweden), and L. Wallinder.

The esterification of [^{3}H] cholesterol by serum from partially hepatectomized and intact control rats *in vitro* was compared. Less [^{3}H] cholesterol was esterified by serum from partially hepatectomized rats compared with the unoperated control rats, the esterification after a 4 hr incubation time being 2.69 ± 0.23 and 3.97 ± 0.15%, resp. Surgical trauma did not influence the capacity of the serum to esterify cholesterol, as the inclusion of sham operated rats into the experiment gave similar results. The decreased cholesterol esterifying activity of serum from partially hepatectomized rats probably explains why these rats have a low concentration of plasma cholesterol ester.

6503 *IN VITRO* ASSAY OF THE EFFECT OF ANTIBACTERIAL TREATMENT OF THE INTESTINAL FLORA ON BONE MARROW CELL PROLIFERATION: I. UPTAKE BY BONE MARROW CELLS OF ^{3}H-THYMIDINE AND SOME OTHER RADIOACTIVE PRECURSORS. *(E.)* Kivilaakso, E. (Dept. Path., U. Helsinki, Finland), T. Rytomaa and E. Niskanen. *Acta Path Microbiol Scand* 78(1):96-103, 1970.

6504 *IN VITRO* ASSAY OF THE EFFECT OF ANTIBACTERIAL TREATMENT OF THE INTESTINAL FLORA ON BONE MARROW CELL PROLIFERATION: II. AN AUTORADIOGRAPHIC ANALYSIS. *(E.)* Kivilaakso, E. (Dept. Path., U. Helsinki, Finland), T. Rytomaa and E. Niskanen. *Acta Path Microbiol Scand* 78(1):104-109, 1970.

6505 THE LYMPHATICS OF THE DOG COLON: A STUDY OF THE LYMPH DRAINAGE PATTERNS BY INDIRECT LYMPHOGRAPHY IN THE DOG UNDER NORMAL AND ABNORMAL CONDITIONS. *(E.)* Sterns, E. E. (Surg. Res. Lab., Queen's U., Kingston, Ontario, Canada) and G. E. R. Vaughan. *Cancer* 26(1):218-231 1970.

6506 UROGRAPHIC EVIDENCE THAT URINE ENTERS TH RECTUM AND CECA OF THE ROADRUNNER (*GEOCOCCYX CALIFORNIANUS)* AVES. *(E.)* Ohmart, R. D. (Dept. Zool., U. California, Davis), L. Z. McFarland and J. P. Morgan. *Comp Biochem Physiol* 35(2):487-489, 1970.

6507 ARTERIOVENOUS SHUNTING IN ISOLATED PERFUSED RAT UPPER GASTROINTESTINAL TRACT. *(E.)* Johnson, R. C. (U. California Med. Ctr., San Francisco). *Amer J Physiol* 219(1):17-22, 1970.

6508 AN INVESTIGATION OF THE REVERSAL OF THE HEPATIC VENOUS CIRCULATION IN THE ISOLAT PERFUSED DOG LIVER. *(E.)* Field, C. D. (Biophys. Group, U. Queensland, St. Lucia, Brisbane, Austral *Aust J Exp Biol Med Sci* 48(3):343-350, 1970.

6509 VASOPRESSIN AND ANGIOTENSIN ON RESISTAN VESSELS OF SPLEEN, INTESTINE, AND LIVER. *(E.)* Cohen, M. M. (Dept. Pharmacol. Ther., U. Manitoba, Winnipeg, Canada), D. S. Sitar, J. R. McNeill and C. V. Greenway. *Amer J Physiol* 218(6):1704-1706, 1970.

6510 CIRCULATORY DYNAMICS IN EXPERIMENTAL DISTENSION OF THE STOMACH, INTESTINE AN ABDOMINAL CAVITY. *(Ger.)* Hahnloser, P. B. (Canto Hosp., Zurich, Switzerland), G. P. Burns, S. Tibb and W. G. Schenk, Jr. *Helvetia Chir Acta* 37(1-2):259-265, 1970.

6511 THE TRANSMISSION OF R-FACTORS IN THE HUMAN INTESTINAL FLORA. *(Ger.)* Wiedema B. (Hyg. Inst., Johann Wolfgang Goethe U., Frankf Germany), H. Knothe and E. Doll. *Zbl Bakt* 213(2):183-193, 1970.

512 THE CECAL BACTERIA OF NYSTATIN-NEOMYCIN-TREATED RATS AND THEIR FATTY ACID COMPONENTS. *E.)* Grigor, M. R. (U. Otago Med. Sch., Dunedin, New ealand) and G. W. Tannock. *Proc Univ Otago Med Sch* 8(1):10-11, 1970.

513 BIOCHEMISTRY OF *VIBRIO CHOLERAE* VIRULENCE I. PURIFICATION AND BIOCHEMICAL PROPERTIES F PF/CHOLERA ENTEROTOXIN. *(E.)* Richardson, S. H. Bowman Gray Sch. Med., Wake Forest U., Winston-alem, N. C.), D. G. Evans and J. C. Feeley. *Infect mmun* 1(6):546-554, 1970.

14 EFFECT OF FORMALIN TREATMENT ON ELECTROPHORETIC MOBILITY OF CHOLERA TOXIN. *(E.)* posito, V. M. (Natl. Inst. Hlth., Bethesda, Md.) d J. C. Feeley. *Infect Immun* 2(1):120-122, 1970.

6515 FEEDING STUDIES ON SODIUM CYCLAMATE, SACCHARIN AND SUCROSE FOR CARCINOGENIC AND TUMOR-PROMOTING ACTIVITY. *(E.)* Roe, F. J. C. (Roy. Cancer Hosp., London, England), L. S. Levy and R. L. Carter. *Food Cosmet Toxic* 8(2):135-145, 1970.

- P:Morph (6322)
- P:Absorp (6352)(6364)
- P:Secr:Stom (6392)
- P:Secr:Hepatobil (6419)(6471)(6479)
- D:Livbil (6762)
- D:Livbil:Cirrh (6890)
- D:Gen (6955)(6966)(6995)(6998)
- D:Gen Parasit (7009)

DIAGNOSTIC PROCEDURES

6516 ENDOSCOPIC CANNULATION OF THE AMPULLA OF VATER. *(E.)* Takagi, K. (Cancer Inst. Hosp., Tokyo, Japan), S. Ikeda, Y. Nakagawa, K. Kumakura, M. Maruyama, N. Someya, T. Takada, T. Takekoshi and T. Kin. *Endoscopy* 2(2):107-115, 1970.

Endoscopic cannulation of the ampulla of Vater was attempted in 20 patients under general anesthesia, using a fiberduodenoscope and X-ray television fluoroscopy. In 13 of the 20 patients the ampulla of Vater was successfully observed, and in 9 of these patients, the ampulla was cannulated with a polyethylene tubing and 5 cc of 60% Urografin was injected as contrast medium. Confirmation of the ampulla of Vater was made by observing the excretion of clear pancreatic juice and bile following an i.v. injection of pancreozymin. In 9 patients undergoing the cannulation, pancreatography was done in 3 patients, and in 6 cases both pancreatography and cholangiography was performed. In all 9 cases stones were observed in the common bile duct or in the gallbladder. Of the 7 cases in which the ampulla was not observed, 4 had cancer of the head of the pancreas and duodenum which compressed the duodenum and made observation of the ampulla difficult; in 2 of the 4 cases the lesion could be observed and was diagnosed as cancer. Following examination, many patients had abdominal inflation but no bleeding or perforation of the digestive tract. Following pancreatography, 5 patients had an increased serum amylase value of 1000 to 3000 U, which returned to a normal level within 5 to 7 days.

6517 FIBERDUODENOSCOPIC OBSERVATION ON THE DYNAMICS OF THE DUODENAL PAPILLA. *(E.)* Kozu, T. (Tokyo Women's Med. Coll., Japan), I. Oi., S. Suzuki and T. Takemoto. *Endoscopy* 2(2):99-102, 1970.

The dynamics of bile excretion and localized changes in the duodenal papilla were directly observed in patients by endoscopic examination, using the fiberduodenoscope. The patients were premedicated with an epilocaine solution for localized pharyngeal anesthesia and by 20 mg of Buscopam (i.m.), prior to examination. With the patient in the left lateral position, the fiberduodenoscope was inserted deep into the duodenal canal to observe the duodenal papilla. The characteristic appearance of the duodenal papilla is a hemispheric protrusion on the longitudinal fold associated with proximal circular folds and distal frenulum-like longitudinal folds. The papilla has an orifice on the summit and is distinguished from the surrounding tissue by its reddish to pale white discoloration. During the endoscopic examination of patients treated with pancreozymin (1 U/kg), the papilla was observed to exhibit spontaneous alternating, contracting and relaxing movements, with opening and closing of the orifice. Following this, there was a vigorous excretion of thick bile in large amounts and the orifice opened widely and became flaccid, and there was periodic deepening of color. In some cases a volvular protusion believed to be a septum between the bile duct and the pancreatic duct was observed protruding from the orifice during excretion phase. Patients with normally functioning gall bladders showed initiation of bile secretion 2 min after injection with pancreozymin, and bile continued to flow for 10 min.

6518 SERUM HEPATITIS ANTIGEN (SH): RAPID DETECTION BY HIGH VOLTAGE IMMUNOELECTROOSMOPHORESIS. *(E.)* Prince, A. M. (New York Hosp.-Cornell Med. Ctr., New York) and K. Burke. *Science* 169(3945):593-595, 1970.

An immunoelectroosmophoretic technique (IEOP) for rapid detection of antigen (SH) associated with serum hepatitis virus is presented. The technique maintains the specificity characteristic of the Ouchterlony gel-diffusion method, yet detects in 1 to 2 hr, one tenth the amount of antigen required for gel diffusion. The Ouchterlony technique currently in use, has two disadvantages in the present application in that it is relatively insensitive, detecting only 20-30% of serum hepatitis carriers in blood donor group populations and is a relatively slow test, requiring 1-7 days for definitive interpretation. Now in the high voltage electroosmophoretic technique, the antigen is caused to migrate in an electric field through a suitable medium of diffusion against a stream of antibodies migrating in opposite directions as a result of endosmotic flow. The IEOP test and standard Ouchterlony technique were compared using 1023 serums and in all instances, serums were positive for SH antigen by both techniques. The IEOP technique detected additional carriers in most populations tested. The IEOP test offers a practical, rapid, sensitive, and highly specific approach to screening blood donors for carriers of serum hepatitis virus.

6519 ENDOSCOPIC PANCREATOCHOLANGIOGRAPHY. *(E.)* Oi, I. (Tokyo Women's Med. Coll., Japan), S. Kobayashi and T. Kondo. *Endoscopy* 2(2):103-106, 1970.

The Machida Fiberduodenoscope has been successfully used to perform endoscopic pancreatocholangiography in the diagnosis of cancer of the pancreas and biliary system in 50 patients. With the patient in the left lateral position, the fiberduodenoscope was inserted into the duodenum under local pharyngeal anesthesia. Then, under fluoroscopic control, a catheter was cannulated into the duodenal papilla and 2 to 4 ml of 60% Urographin was injected into the pancreatic duct as a radiocontrast medium. The cannulated catheter was then directed to the common bile duct and the biliary system was directly opacificed. The use of endoscopic cholangiography in 50 patients resulted in diagnoses of 4 cases of cancer of the pancreas head, 3 cases of cancer of the bile duct, 2 cases of cancer of the pancreas body, one case of hepatoma, and several cases of gallstones in the common bile duct or gallbladder.

6520 SYSTEMATIC RECTOSIGMOIDOSCOPY IN THE DETECTION OF RECTAL CANCER. *(Fr.)* Muller, C. A. (Lausanne, Belgium). *Lyon Med* 65(5):708-712, 1969.

Fifty-three adenomatous polyps and 25 carcinomas of the rectosigmoid region were discovered in the proctosigmoidoscopic examination of 710 patients aged forty or above. Analysis of the results indicate that adenomatous polyps of this type tend to develop approximately 10 yr earlier than was the case a quarter of a century ago. Diagnosis of corectal malignancies in the preclinical stages would seem to be greatly abetted by testing for occult blood in stools of doubtful color from asymptomatic patients and by rectosigmoidoscopic examinations.

6521 A SPECTROPHOTOMETRIC METHOD FOR THE ANALYSIS OF PEPSIN. *(E.)* Robinson, L. A. (U. Washington Sch. Med., Seattle) and T. T. White. *Gastroenterology* 58(6):798-800, 1970.

A rapid spectrophotometric method for the analysis of pepsin in gastric secretion, using p-nitrophenyl sulfite as a synthetic substrate, has been developed. P-Nitrophenyl sulfite is rapidly hydrolyzed by incubation with pepsin and the rate of increase of absorbance of the breakdown product, p-nitrophenol, is maximal at 320 nm and is directly (linearly) proportional to the enzyme concentration. The maximal rate of change of absorbance is taken as a measure of the total amount of pepsin activity in the sample cuvette. A dual beam spectrophotometer is used to reduce the artifact of nonenzymatic hydrolysis of the ester. A standard pepsin solution is prepared by dissolving crystalline pepsin (1 mg/ml) in 50% glycine and 50% 0.01 N HCl (pH 2). A sample of 10 µg of pepsin changes the absorbance at a constant rate of 0.305 per min. One determination can be performed in 3 to 4 min and a sample containing as little as 1 µg of pepsin can be assayed accurately. This method is more rapid than the standard Anson and Mirsky (hemoglobin digestion) assay for pepsin, and a comparison of the two methods by the simultaneous assay of 50 gastric specimens showed both methods to be equally accurate.

6522 THE VALUE OF EEG FREQUENCY ANALYSIS IN HEPATIC ENCEPHALOPATHY. *(E.)* Hawkes, C. H. (Roy. Infirm., Edinburgh, Scotland), A. I. S. Macpherson, H. Pryor and H. R. A. Townsend. *J Roy Coll Surg Edinb* 15(3):151-157, 1970.

Frequency analyses of electroencephalographic recordings were regularly obtained from a 67 year old housewife with severe hepatic dysfunction and portal hypertension, and were used to indicate the onset of encephalopathy before it became clinically or biochemically manifest. The EEG was continuously recorded from the right temporo-occipital area and autocorrelograms were obtained by computer analysis o indicate the change in mean dominant frequency. n normal patients the mean dominant frequency of he EEG is always greater than 8 cycles per sec. When pre-coma was clinically evident in this patient, he mean dominant frequency levels reached levels f 2 to 3 cps (delta range) and when it was clinically latent", the values were in the 4 to 8 cps range theta range). It was observed that a slowing of he mean dominant frequency to the theta range ccurred 48 hr before the clinical symptoms of ncephalopathy. Treatment with neomycin (6g/day) esulted in an increase in the pre-coma mean domiant frequency from a value of 3 cps to 9 cps.. hen neomycin therapy was stopped and protein dietary intake was re-introduced at 30 g/day, the mean dominant frequency dropped from a value of 9 cps to 7 cps in 5 days, and with the renewal of neomycin therapy at a lower dose of 3 g/day there was a gradual recovery of the mean dominant frequency to 8 cps in 7 days. Lactulose (30 ml t.i.d.) was gradually substituted for neomycin therapy, and even when the protein intake was raised to 40 g/day, the mean dominant frequency was maintained at a normal level of 8 to 9 cps until the patient was discharged.

6523 GLUCOSE TOLERANCE TEST AND SIMULTANEOUS SERUM AMYLASE DETERMINATION IN THE DIAGNOSIS OF PANCREATIC DISEASES: A STUDY IN 100 PATIENTS. *(Fr.)* Thomas, M. (Hosp. Bichat, Paris, France), A. Lapegue and Y. Le Quintrec. *Ann Med Intern* 121(4):421-430, 1970.

Oral glucose tolerance tests and serum amylase determinations were performed on 37 controls, 25 verified pancreatic disease affected patients (chronic pancreatitis, cancer), and 38 patients whose pancreatic disorders could not be established (lack of calcifications or surgical evidence). A slightly modified Ermini's technique was used. The tests were negative in 3 cases and positive in 16 out of 25 cases with confirmed pancreatic disease. Out of 37 controls, 4 gave false positive results while 19 cases were negative. The test explores the functional condition of the pancreas whose alterations preceed macroscopic changes (radiologically visible calcifications).

6524 A STUDY OF THE MAXIMAL GASTRIC ACID OUTPUT IN SOME SUBJECTS. *(E.)* Dutt, B. (Makerere Coll. Med. Sch., Kampala, Uganda), S. K. Kajubi and S. Sharma. *E Afr Med J* 47(3):163-167, 1970.

6525 ANGIOGRAPHIC DIAGNOSIS OF TUMORS OF THE LEFT HYPOCHONDRIUM IN CHILDREN. *(E.)* Hassan, M. (Hosp. Child Dis., Paris, France), A. Bonnemazou and M. Blery. *Ann Radiol* 13(3-4):177-187, 1970.

6526 HEPATIC ARTERY ANGIOGRAPHY IN PORTAL HYPERTENSION. *(E.)* Kreel, L. (Roy. Free Hosp., London, England), N. Gitlin and S. Sherlock. *Amer J Med* 48(5):618-623, 1970.

6527 POLYMERIC CONTRAST MEDIA FOR ROENTGENOLOGIC EXAMINATION OF GASTROINTESTINAL TRACT. *(E.)* Bjork, L. (U. Hosp. Uppsala, Sweden), U. Erikson and B. Ingelman. *Invest Radiol* 5(3):142-148, 1970.

6528 CARMINE AS AN INDEX OF TRANSIT TIME IN CHILDREN WITH SIMPLE CONSTIPATION. *(E.)* Dimson, S. B. (Sydenham Child. Hosp., England). *Arch Dis Child* 45(240):232-235, 1970.

6529 PROGRESS IN ESOPHAGOSCOPY. *(E.)* Hirschowitz, B. I. (Div. Gastroent, U. Alabama, Birmingham). *Endoscopy* 2(2): 75-77, 1970.

6530 PERORAL SMALL BOWEL BIOPSY. *(E.)* Koch, H. (Dept. Med., U. Erlangen-Nuremberg, Germany) and M. Classen. *Endoscopy* 2(2):130-133, 1970.

6531 FINE-NEEDLE ASPIRATION BIOPSY OF HUMAN LIVER FOR ENZYMATIC DIAGNOSIS OF GLYCOGEN STORAGE DISEASE AND GARGOYLISM. *(E.)* Lundquist, A. (U. Hosp. Lund, Sweden) and P. A. Ockerman. *Acta Paediat Scand* 59(3):293-296, 1970.

6532 A CLINICAL EVALUATION OF ELECTROMYOGRAPHY OF THE ANAL SPHINCTER. *(E.)* Bailey, J. A. (Emory U. Sch. Med., Atlanta, Ga.), J. J. Powers and G. W. Waylonis. *Arch Phys Med* 51(7):403-408, 1970.

6533 ANAL SPHINCTER ELECTROMYOGRAPHY IN ADULTS. *(E.)* Waylonis, G. W. (Coll. Med., Ohio St. U., Columbus) and K. C. Krueger. *Arch Phys Med* 51(7):409-412, 1970.

6534 IMPROVED ENDOSCOPIC DIAGNOSIS OF GASTRO-ESOPHAGEAL MALIGNANCY: COMBINED USE OF DIRECT VISION BRUSHING CYTOLOGY AND BIOPSY. *(E.)* Winans, C. S. (U. Chicago Pritzker Sch. Med., Ill.), S. Kobayashi, J. C. Prolla and J. B. Kirsner. *JAMA* 212(12):2086-2089, 1970.

6535 PANCREAS SCINTOGRAPHY WITH ELECTRONIC SUBTRACTION OF THE LIVER IMAGE. *(Fr.)* Prior, C. (Genes, France) and U. Valente. *Lyon Chir* 66(2):87-90, 1970.

6536 TRANSCATHETER BIOPSY OF ESOPHAGEAL LESIONS. *(E.)* Fennessy, J. J. (Dept. Radiol. U. Chicago, Ill.), D. V. S. F. Hidvegi and D. Variakojis. *Radiology* 96(1):123-126, 1970.

6537 GASTROCAMERA INVESTIGATION AND DIRECTED GASTRIC BIOPSY. *(Ger.)* Stadelmann, O. (Med. Polyclin. U. Bonn, Germany). *Deutsch Med Wschr* 95(27):1459-1460, 1970.

6538 THE SEROLOGIC DIAGNOSIS IN TYPHOID AND PARATYPHOID-B-CARRIERS. *(Ger.)* Knothe, H. (Hyg. Inst., Johann Wolfgang Goethe U., Frankfurt, Germany) and H. Pichler. *Arch Hyg Bakt* 153(6):552-555, 1970.

6539 LEADING SYMPTOM OF FEVER IN THE DIFFERENTIAL DIAGNOSTIC PROBLEMS OF ABDOMINAL LYMPHOGRANULOMATOSIS. *(Ger.)* Hartwich, G. (Med. Clin. Polyclin, U. Erlangen-Nuremberg, Germany) and O. Stadelmann. *Fortschr Med* 88(12):504-506, 1970.

6540 ANGIOGRAPHIC STUDIES FOR THE CHILD WITH PORTAL HYPERTENSION. *(E.)* Soleymani, Y. (Meadowbrook Hosp., East Meadow, Long Island, N.Y.) and C. Pochedly. *Med Times* 98(8):175-181, 1970.

6541 DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF RETROPERITONEAL INJURIES. *(Ger.)* Meyer-Furst, P. (Canton Hosp., Luzerne, Switzerland) and M. Matthey. *Helvetia Chir Acta* 37(1-2):190-194, 1970.

6542 PENTAGASTRIN (ICI 50,123) AS A "MAXIMAL" STIMULANT FOR GASTRIC SECRETION. *(E.)* Zaterka, S. (San Paulo Med. Sch., Brazil). *Arq Gastroent* 7(1):3-5, 1970.

6543 FIBEROPTIC ESOPHAGOSCOPIC EXAMINATION OF THE CARDIA AND UPPER STOMACH. *(E.)* Sullivan, B. H. (Cleveland Clin., Ohio). *Amer J Gastroent* 54(1):44-48, 1970.

6544 THE HEPATIC CIRCULATION AND PORTAL HYPERTENSION: RADIOLOGIC EVALUATION. *(E.)* Ruzicka, F. F., Jr. (St. Vincent's Hosp. Med. Ctr., New York, N. Y.) and P. Rossi. *Ann NY Acad Sci* 170(1):148-163, 1970.

6545 GASTRO-FIBERSCOPIC BIOPSY ON EARLY GASTRIC CANCER. *(E.)* Kawai, K. (Kyoto Prefect. U. Med., Japan), Y. Akasaka, F. Misaki, K. Murikami and M. Masuda. *Endoscopy* 2(2):82-87, 1970.

6546 GASTROSCOPIC CYTOLOGY. *(E.)* Witte, S. (Diakonissen Hosp., Karlsruhe, Germany). *Endoscopy* 2(2):88-93, 1970.

6547 RADIOLOGY OF BILIARY-DIGESTIVE COMMUNICATIONS. *(Fr.)* Jouve, P. (Marseilles, France) J. F. Huguet, J. N. Blanc and J. M. Beziat. *J Radiol Electr* 50(10):669-674, 1970.

6548 DIAGNOSIS AND THERAPY OF PANCREATIC DISEASES WITH SPECIAL CONSIDERATION OF THE PHYSIOLOGICAL PRINCIPLES. *(Ger.)* Ammann, R. (Canton Hosp. Zurich, Switzerland). *Praxis* 59(22):792-795, 1970.

6549 INTRAGASTRIC PHOTOGRAPHY WITH THE GASTROCAMERA: TECHNIQUE AND FILM ORIENTATION. *(Ger.)* Oshima, H. (Steglitz Clin., Free U. Berlin, Germany). *Deutsch Med J* 21(9):585-594, 1970.

6550 SEROLOGICAL TEST FOR VIRAL HEPATITIS (HIM-TEST). *(Ger.)* Tilz, G. P. (Med. U. Clin. Graz, Austria), R. Heschl and S. Sailer. *Klin Med* 65(27):1302-1304, 1970.

551 DIFFERENTIAL DIAGNOSIS OF UPPER ABDOMINAL PAIN. *(Ger.)* Herfort, K. (Med. Polyclin. arl U., Prague, Czechoslovakia). *Deutsch Med J* 1(9):594-600, 1970.

552 THE LABORATORY DIAGNOSIS OF MALABSORPTION. *(E.)* McCarthy, L. J. (Straub Clin., onolulu, Hawaii). *Straub Clin Proc* 35(4):124-126, 970.

553 THE PRESENT STATE OF LIGHT GUIDE TYPE FIBERGASTROSCOPE AND CHARACTERISTICS OF ASTRIC BIOPSY UNDER DIRECT VISION. *(E.)* Takemoto, . (Tokyo Women's Med. Coll., Japan), K. Tsuneoka, . Oi, T. Fujita and T. Kondo. *Endoscopy* 2(2):77- 2, 1970.

54 PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY. *(E.)* Inamoto, K. (Ctr. Adult Dis., Osaka, pan) and T. Kondo. *Nippon Acta Radiol* 29(10:1349- 64, 1970.

55 STUDY ON FEASIBILITY OF DIAGNOSIS IN INDIRECT MASS SURVEY OF THE STOMACH. *(E.)* yonari, H. (Fac. Med. Kyushu U., Japan). *Nippon ta Radiol* 30(1):1-22, 1970.

56 PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY BY VARIOUS CONTRAST MEDIA. *(Jap.)* Endo, (2nd Tokyo Natl. Hosp., Japan), K. Ishiyama and Ebine. *Iryo* 24(1):60-65, 1970.

57 THE CLINICAL IMPORTANCE OF CHOLANGIOSCOPY. *(E.)* Shore, J. M. (Cedars-Sinai Med. Ctr., s Angeles, Calif.) and G. Berci. *Endoscopy* 2):117-120, 1970.

58 EMERGENCY PERITONEOSCOPY: REPORT ON 160 CASES. *(E.)* Fahrlander, H. (Med. Surg. in. U. Basel, Switzerland), G. Engelhardt and Baerlocher. *Endoscopy* 2(2):120-122, 1970.

59 THE INSERTION OF FIBERCOLONOSCOPE INTO THE CECUM AND THE DIRECT OBSERVATION OF ILEOCECAL VALVE. *(E.)* Nagasako, K. (Tokyo men's Med. Coll., Japan), M. Endo, T. Takemoto T. Kondo. *Endoscopy* 2(2):123-126, 1970.

0 CLINICAL APPLICATIONS OF CINEGASTROSCOPY. *(E.)* Colcher, H. (no affil). *Endoscopy*):127-130, 1970.

1 DUODENOJEJUNOSCOPY. *(E.)* Demling, L. (Dept. Med., U. Erlangen-Nuremberg, Ger- y) and M. Classen. *Endoscopy* 2(2):115-117, 1970.

6562 A DOUBLE EXAMINATION IN PANCREATIC EXPLORATION: ARTERIOGRAPHY AND SCINTILLOGRAPHY. *(Fr.)* Dubarry, J. J. (Bordeaux, France), P. Blanquet, J. Tavernier, C. Beraud, C. Beck, M. Le Bras, A. Pigneux and A. Quinton. *J Radiol Electr* 50(10):703-706, 1969.

6563 TRANSHEPATIC PRESSURE MEASUREMENTS. *(E.)* Vennes, J. A. (VA Hosp., Minneapolis, Minn.). *Ann NY Acad Sci* 170(1):193-201, 1970.

6564 THE PATHOLOGICAL-ANATOMICAL DIFFERENTIAL DIAGNOSIS BETWEEN MORBUS CROHN AND ULCERATIVE COLITIS. *(E.)* Johansen, A. (Bispebjerg Hosp., Copenhagen, Denmark), and C. Axelsson. *Acta Path Microbiol Scand* 78(1):36-48, 1970.

6565 LIVER CHOLINESTERASE IN HEPATIC, BILIARY AND GASTRIC DISEASES. *(Ger.)* Wolff, H. (Surg. Clin. Karl Marx U., Leipzig, Germany). *Zbl Chir* 95(19):589-591, 1970.

6566 INDICATIONS AND UTILITY OF LIVER NEEDLE BIOPSY IN PEDIATRICS. *(Sp.)* Gentile-Ramos, I. (Fac. Med. Montevideo, Uruguay). *Arch Pediat Uruguay* 41(1):3-12, 1970.

6567 LYMPHANGIOGRAPHY IN THE DIAGNOSIS OF CHRONIC PANCREATITIS. *(It.)* Ciccolini, A. (Maria Vittoria Hosp., Turin, Italy). *Arch Sci Med* 126(9):656-658, 1969.

6568 METHOCLOPRAMIDE DYNAMICS IN THE RADIOLOGICAL STUDY OF PYLORIC STENOSIS AND GASTROJEJUNOSTOMY. *(It.)* Farinet, G. (St. Lazarus Hosp., Alba, Italy) and D. Piasco. *Minerva Radiol* 14(12):529-543, 1969.

6569 ENDOSCOPY IN GASTRIC POLYPOID LESIONS: DIFFERENTIAL DIAGNOSIS. *(Jap.)* Yajima, H. (Gunma U. Sch. Med., Maebashi, Japan). *Kitakanto Med J* 19(4):357-372, 1969.

6570 THE ACID PERFUSION TEST IN THE DIAGNOSIS OF REFLUX ESOPHAGITIS. *(Ger.)* Keel, H. J. (Med. U. Clin. Zurich, Switzerland) and W. Blattler. *Deutsch Med Wschr* 94(1):31-33, 1970.

6571 GASTROCAMERA INVESTIGATION AND DIRECTED GASTRIC BIOPSY. *(Ger.)* Oshima, H. (Steglitz Clin., Free U. Berlin, Germany). *Deutsch Med Wschr* 95(21):1178-1180, 1970.

6572 PERITONEAL AMMONIA LEVELS IN ACUTE ABDOMINAL DISEASE. *(Fr.)* Sawa, A. (Acad. Med. Lublin, Poland). *Lyon Med* 65(5):747-753, 1969.

6573 LAPAROSCOPY IN THE CRUVEILHIER-BAUMGARTEN SYNDROME. *(Ger.)* Henning, H. (Fohrenkamp Treatment Clin., Molln, Lauenberg, Germany) and D. Look. *Z Gastroent* 8(3):133-139, 1970.

6574 THE DIFFERENTIAL DIAGNOSIS OF POSTOPERATIVE, PARALYTIC AND ADHESION ILEUS. *(Ger.)* Eigler, F. W. (Surg. U. Clin. Cologne, Germany), A. Kallenberg and V. Zumtobel. *Therapiewoche* 20(26):1288-1292, 1970.

6575 PREOPERATIVE BILE DUCT VISUALIZATION BY MEANS OF GALLBLADDER PUNCTURE UNDER LAPAROSCOPIC VISION. *(Ger.)* Ruchti, C. (Dist. Hosp. Solothurn, Switzerland) and R. Berchtold. *Helvetia Chir Acta* 37(1-2):140-142, 1970.

6576 RADIOLOGIC DIFFERENTIAL DIAGNOSIS OF COLONIC DIVERTICULOSIS AND ITS COMPLICATIONS. *(Ger.)* Van Kaick, G. (Surg. U. Clin. Heidelberg, Germany), F. J. Roth and W. Michel. *Therapiewoche* 20(26):1252-1255, 1970.

6577 DIAGNOSIS AND THERAPY OF RADIATION STENOSIS OF THE SIGMOID COLON. *(Ger.)* Overbeck, W. (Surg. U. Clin. Freiburg, Germany) and H. Birzle. *Therapiewoche* 20(26):1256-1260, 1970.

6578 THE CLINICAL VALUE OF HEPATIC SCINTILLOGRAPY WITH ^{198}Au FOR THE DIAGNOSIS OF HYDATID CYSTS OF THE LIVER. *(It.)* Leggeri, A. (Dept. Surg., U. Rome, Italy) and A. Bertolotti. *Policlinic* 77(2):92-115, 1970.

- P:Morph (6321)(6342)
- P:Secr:Hepatobil (6454)
- D:Esoph (6581)
- D:Stomduo (6609)
- D:L.Intest (6694)(6703)(6726)
- D:L.Intest:Ulccol (6734)
- D:Pancreas:Pancreat (6755)
- D:Livbil (6820)
- D:Livbil:A.V.Hep (6862)
- D:Livbil:Cirrh (6907)
- D:Gen (6940)

GASTROINTESTINAL DISEASES

ESOPHAGUS

5579 PRIMARY MALIGNANT MELANOMA OF THE ESOPH-
AGUS ASSOCIATED WITH MELANOSIS OF THE
ENTIRE ESOPHAGUS: FIRST CASE REPORT. *(E.)* Piccone,
/. A. (Brooklyn VA Hosp., N. Y.), R. Klopstock,
I. H. LeVeen and J. Sika. *J Thor Cardiovasc Surg*
59(6):864-870, 1970.

he fourth reported case of primary malignant
elanoma of the esophagus associated with esoph-
geal melanosis and the first with melanosis of
he entire esophagus is reported. An esophagram
f a 70 yr old white man with a history of heavy
thanol intake and episodic anterior chest pains
ssociated with the swallowing of solid food
howed a 4 cm polypoid mass at the junction of the
id and distal thirds of the esophagus. Bluish-
lack pigmented areas throughout the esophagus
nd a 2 to 3 cm polypoid lesion 35 cm from the
ncisor teeth were seen on esophagoscopy. A
iopsy and permanent sections showed squamous
ucosa with the underlying tissue infiltrated by
he pleomorphic polygonal and spindle-shaped cells
aving vesicular nuclei and granules of brown non-
ron containing pigment. No melanoma-like skin
esions were found and none had been removed in
he past. Esophagogastrectomy was performed and
he distal half of the esophagus, the upper third
f the stomach and the left gastric nodes were
esected. Microscopic examination of the resected
pecimen showed malignant melanoma of the esophagus
ith metastasis to the submucosa and to the para-
sophageal lymph nodes. The patient was asymptomatic
or 6 months. Postmortem examination revealed meta-
tatic melanoma in the esophagus, stomach, mediastinal
ymph nodes, thoracic vertebrae, lungs, pleura, left
reter, kidney, liver, diaphragm and skin.

580 ROTATORY IRRADIATION OF ESOPHAGEAL CAR-
CINOMA. *(Ger.)* Werner, H. (Radiol. Clin.
Kiel, Germany) and R. Lucks. *Strahlentherapie*
39(5):517-526, 1970.

sophageal carcinoma in 155 patients (average age
.7 years) treated by rotatory irradiation under
nventional intense care conditions was followed
from 1958 through 1966. Esophagoscopic control
as carried out in 87% of the cases, while 76% had
stologically ascertained carcinomas; 93% under-
ent uninterrupted therapy. A one year survival
ate was achieved in 36% of cases, 2 years in 20%
patients, 3 years in 9%, 4 years in 9%, 5 years
9% and 6 years survival was achieved in 8% of
is population. Rotatory irradiation therapy
ould occupy an important place comparable to
balt therapy in cases of esophageal carcinoma.

81 ESTIMATION OF AVERAGE DENSITY OF LUNG BY A
RADIOGRAPHIC TRANSIT DOSE METHOD AND COR-
CTION FACTORS FOR A LESION IN THE MIDTHORACIC ESO-
AGUS TREATED WITH ROTATION OF 4.3 MV X-RAYS AND
BALT-60 γ-RAYS. *(Jap.)* Onai, Y. (Cancer Inst.,
kyo, Japan), T. Tomaru, T. Irifune and I. Uchida.
ppon Acta Radiol 29(11):1397-1404, 1970.

6582 THE PROGNOSIS AND MANAGEMENT OF BLEEDING ESOPHAGEAL VARICES. *(E.)* Conn, H. O. (Yale U. Sch. Med., New Haven, Conn.). *Ann NY Acad Sci* 170(1):345-357, 1970.

6583 SUCCESSFUL THERAPY OF NUMEROUS COMPLICATIONS IN THE RECONSTRUCTION OF THE ESOPHAGUS, USING COLONIC INTERPOSITION. *(Ger.)* Helmer, F. (2nd Surg. U. Clin., Vienna, Austria) and E. Zweymuller. *Z Kinderchir* 8(3):218-224, 1970.

6584 AN APPRAISAL OF THE METHODS FOR TREATING HIATUS HERNIA AND ITS COMPLICATIONS. *(E.)* Collis, J. L. (United Reg. Birmingham Hosp.). *Ann Roy Coll Surg England* 46(6):338-349, 1970.

6585 A GASTRIC BUTTRESS FOR THE MANAGEMENT OF ACUTE PERFORATION OF THE LOWER ESOPHAGUS IN DOGS. *(E.)* Dagher, F. J. (Dept. Surg., American U., Beirut, Lebanon), S. Mamoun, S. Khuri and G. D. Zuidema. *Europ Surg Res* 2(3):233-240, 1970.

6586 PEDUNCULATED ESOPHAGEAL HAMARTOMA IN A CHILD: A CASE REPORT. *(E.)* Dieter, R. A., Jr. (Glen Ellyn, Ill.), W. L. Riker and P. Holinger. *J Thor Cardiovasc Surg* 59(6):851-854, 1970.

6587 SPONTANEOUS INTRAMURAL ESOPHAGEAL PERFORATION. *(E.)* Borrie, J. (Otago Med. Sch., Dunedin, New Zealand) and J. Sheat. *Thorax* 25(3):294-300, 1970.

6588 SURGICAL MANAGEMENT OF TRACHEOESOPHAGEAL FISTULA AND ESOPHAGEAL ATRESIA: RESULTS AT A UNIVERSITY HOSPITAL. *(E.)* Hoppenstein, J. (West Virginia U. Med. Ctr., Morgantown), R. A. Currie, T. J. Tarnay, H. E. Warden, B. Zimmerman and J. R. Lancaster. *W Virginia Med J* 66(8):243-247, 1970.

6589 ESOPHAGOGASTRIC RECONSTRUCTION WITH A SINGLE LAYERED ANASTOMOSIS SUTURE. *(Ger.)* Schwartz, H. (Surg. U. Clin. Zurich, Switzerland). *Helvetia Chir Acta* 37(1-2):131-134, 1970.

6590 EPIPHRENIC DIVERTICULA OF THE ESOPHAGUS WITH AN ESOPHAGOBRONCHIAL FISTULA. *(Ger.)* Schamaun, M. (Canton Hosp., Chur, Switzerland) and K. Infanger. *Helvetia Chir Acta* 37(1-2):69-73, 1970.

6591 DISRUPTURE OF THE ANASTOMOSIS IN ESOPHAGEAL ATRESIA. *(E.)* Eklof, O. (Karolinska Inst., Stockholm, Sweden), A. Livaditis and L. Okmian. *Ann Radiol* 13(3-4):297-303, 1970.

6592 A JOINING TUBE IN ESOPHAGEAL ANASTOMOSIS. *(Jap.)* Daido, R. (Maizuru Natl. Hosp., Kyoto, Japan), M. Kano, K. Hilotani, M. Funada and M. Nakamura. *Iryo* 24(1):15-20, 1970.

6593 MORPHOLOGICAL STUDIES OF ESOPHAGITIS. *(Ger.)* Wundisch, H. (Inst. Path. Anat., U. Erlangen-Nuremberg, Germany) and K. Elster. *Z Gastroent* 8(3): 153-162, 1970.

6594 SURGICAL REINTERVENTION AFTER THE HELLER OPERATION FOR ESSENTIAL MEGA-ESOPHAGUS: IN 5 OBSERVATIONS. *(Fr.)* Saubier, E. (no affil), J. F. Chalencon and J. Beaulieux. *Lyon Med* 223(17):883-891, 1970.

6595 ANEMIAS AND THROMBOSES IN ADULTS WITH HIATAL HERNIAS: INCIDENCE OF THERAPEUTIC INDICATIONS. *(Fr.)* Favre-Gilly, J. (no affil). *Lyon Med* 223(17):893-899, 1970.

6596 ESOPHAGEAL ATRESIA. *(E.)* Henrikson, B. (Dept. Pediat. Surg., U. Goteburg, Germany) and G. Petterson. *Z Kinderchir* 8(3):209-217, 1970.

6597 ESOPHAGEAL DIVERTICULA IN INFANTS AND CHILDREN. *(E.)* Meadows, J. A., Jr. (Child. Hosp., Birmingham, Alabama) *Southern Med J* 63(6):691-694, 1970.

6598 SOME OBSERVATIONS ON ESOPHAGEAL CARCINOMA IN CEYLON, INCLUDING ITS RELATIONSHIP TO BETEL CHEWING. *(E.)* Stephen, S. J. (Gen. Hosp., Ratnapura, Ceylon) and C. G. Uragoda. *Brit J Cancer* 24(1):11-15, 1970.

6599 TECHNIQUE OF GASTRIC MOBILIZATION FOR ESOPHAGEAL REPLACEMENT. *(E.)* Simkin, E. P. (United Liverpool Hosp., England) and P. M. Stell. *Surgery* 67(6):1029-1030, 1970.

6600 TUBERCULOSIS OF THE ESOPHAGUS: CASE REPORT. *(Jap.)* Furuya, Y. (Niigata U. Sch. Med., Japan), S. Kobayashi and Y. Higuchi. *Nippon Acta Radiol* 29(11):1408-1414, 1970.

6601 HYPERMOTILITY FORMS OF FUNCTIONAL ESOPHAGEAL STENOSES. *(Ger.)* Niemann, H. (Radiol. U. Clin. Gottingen, Germany), G. Jakob and H. Schmidt. *Deutsch Med Wschr* 94(1):7-12, 1970.

6602 RUPTURES AND PERFORATIONS OF THE ESOPHAGUS WITH SPECIAL CONSIDERATION OF PATHOLOGIC, CLINICAL AND THERAPEUTIC DIFFERENCES. *(Ger.)* Lauschk H. (Surg. U. Clin. Cologne, Germany), T. Hau and H. J. Peiper. *Langenbeck Arch Chir* 326(2-3):186-211, 1970.

6603 THE TREATMENT OF ESOPHAGEAL CANCER WITH BLEOMYCIN. *(E.)* Ando, T. (no affil.). *Nihon Univ Med J* 29(4):368-369, 1970.

6604 CROHN'S DISEASE OF THE TERMINAL ESOPHAGUS. *(Ger.)* Vogt-Moykopf, I. (Surg. U. Clin. Heidelberg, Germany) and M. Wanke. *Z Gastroent* 8(3) 163-167, 1970.

6605 ESOPHAGOTHORACIC FISTULA. *(Ger.)* Schuste H. (St. Hosp. Vienna, Austria). *Fortschr Roentgenstr* 112(6):835-836, 1970.

6606 LOWER ESOPHAGEAL RING:I. *(E.)* Spiro, H. M. (Yale U. Sch. Med., New Haven, Conn.), R. K. Goyal and J. J. Clancy. *New Eng J Med* 282(23):1298-1305, 1970.

○ P:Motil (6380)(6391)
○ Diagproc (6529)(6534)(6536)(6543)(6570)
○ D:Stomduo (6627)(6632)(6635)(6642)(6650)
○ D:Livbil (6812)
○ D:Livbil:Cirrh (6907)
○ D:Gen (6935)(6991)(7001)

507 REDISTRIBUTION OF SQUAMOUS AND COLUMNAR
EPITHELIUM AFTER GASTRIC MUCOSAL WOUNDS
THE RAT. *(E.)* Wong, J. (Dept. Surg. U. Sydney,
stralia) and E. S. Finckh. *Pathology* 2(2):147-159,
70.

male albino rats were used to study the effect
epithelial and full mucosal wounds produced by
amping across the squamo-columnar junction of
e stomach in 3 positions relative to the junc-
on. When the wound included equal areas of the
types of mucosa, healing restored the junction
its original position irrespective of the depth
wounding. When predominantly glandular mucosa
s damaged, wounds of both depths healed with de-
ation of the junction towards the glandular area.
en predominantly squamous mucosa was damaged,
aling resulted in deviation of the junction into
e squamous part of the stomach when the wounds
re deep, but in return of the junction to its
iginal position when the wounds were superfi-
al. This difference between the effects of su-
rficial and deep wounding was confirmed by ex-
riments in which the wall of the stomach in the
nctional area to be damaged had previously been
tated surgically through 90 degrees. It is sug-
sted that in deep wounds involving the whole of
e mucosa, the rate of migration of the two types
epithelium was the principal factor determining
e final distribution of the two distinct types
mucosa, but that in superficial wounds the re-
dual mesenchyme of the lamina propria, at least
the squamous side, influenced the type of
ithelial cells which migrated across it and
came established over it.

08 METABOLISM OF GLYCOCHOLIC ACID IN
GASTRECTOMIZED PATIENTS. *(E.)*
dtvedt, T. (Govt. Hosp. Oslo, Norway), A.
rman and K. Nygaard. *Scand J Gastroent*
3):237-240, 1970.

e extent of hydrolysis of glycocholic acid was
udied in 5 gastrectomized patients with increased
mbers of bacteria in jejunal aspirates; disap-
arance of [1-^{14}C] glycine from [24-^{14}C] labeled
le acid was determined after administration of
4-^{14}C]-cholyl-[1-^{14}C]-glycine. Jejunal contents
all patients obtained 24 hours after adminis-
ation, contained from 82-98% of [24-^{14}C] labeled
le acids with conjugates other than the original
^{14}C] glycine. Labeled bile acids were not
esent as unconjugated bile acids except in 2
tients (trace amounts). Unconjugated bile acids
tained after alkaline hydrolysis of 48 hr
junal contents) were separated and labeled
,12α-dihydroxy-7-keto-5β-cholanoic, and 3α,7β,-
α-trihydroxy-5β-cholanoic acids were isolated.
ese metabolites were formed in all patients,
as a group, never accounted for more than 5%
total [24-^{14}C] labeled bile acids in the sample.
extensive splitting of glycine conjugates appar-
tly is not necessarily accompanied by steatorrhea
increased deconjugation of glycine conjugates
ed not be associated with increased transformation
bile acids.

6609 SUCTION BIOPSY AND GASTRITIS: RESULTS OF 609 HISTOPATHOLOGICAL INVESTIGATIONS. *(Ger.)* Davaris, P. S. (Path. Inst. U. Dusseldorf, Germany). *Aertzl Forsch* 24(6):178-182, 1970.

Suction biopsies of the gastric mucosa performed on 609 gastritis patients (1345 samples) permitted 92.7% definite histological diagnosis. Esophageal mucosa was aspirated in 5% of the patient population which excludes esophageal varicoses from this procedure. Normal mucosa was found in 29.6% while 47.5% revealed superficial gastritis and 22.8% had atrophic gastritis with intestinal metaplasia as well in patients over 40 years of age. Histologically normal gastric mucosa decreased with aging and atrophic gastritis was also more frequent, while no relevance to age was found for superficial gastritis. Sex had no influence on the severity of gastritis.

6610 THE EFFECT OF LIMITED ADMINISTRATION OF N-METHYL-N'-NITRO-N-NITROSOGUANIDINE ON THE INDUCTION OF STOMACH CANCER IN RATS. *(E.)* Fujimura, S. (Natl. Cancer Ctr. Res. Inst., Tokyo, Japan), K. Kogure, T. Sugimura and S. Takayama. *Cancer Res* 30(3):842-848, 1970.

The incidence and development of adenocarcinomas of the glandular stomach following *N*-methyl-*N*'-nitro-*N*-nitrosoguanidine (NG) administration in male rats is reported. Two groups of 30 animals each received 83 μg/ml and 167 μg/ml NG solution for 7 months followed by tap water. A third group of 40 rats received the higher dose until the end of the experiment, when histological examination was made. Almost all tumors of the stomach were localized in the lesser curvature of the pylorus or antrum although tumors were also found in the duodenum, upper jejunum and in the omentum and peritoneal cavity. Atypical epithelial proliferation in the stomach was commonly observed although metastases were not noted. In the liver, central necrosis with vacuolar degeneration and cirrhosis-like lesions in 3, 11 and 14 cases in each respective group were noted. NG administration in drinking water at lower concentration appeared more likely to produce carcinomas in the stomach and the rate of survival was higher than in those receiving the higher dose. Tumors of duodenum and jejunum were more frequent in the second and third groups.

6611 MESENTERIC ISCHEMIA: A CAUSE OF INCREASED GASTRIC BLOOD FLOW, HYPERACIDITY, AND ACUTE GASTRIC ULCERATION. *(E.)* Boley, S. J. (Albert Einstein Coll. Med., New York, N.Y.), M. I. Cohen, P. R. Winslow, N. H. Becker, W. Treiber, H. McNamara, F. J. Veith and M. L. Gliedman. *Surgery* 68(1):222-230, 1970.

The effects of acute mesenteric ischemia on gastric blood flow and acid was studied in 17 dogs (10 to 22 kg) under pentobarbital anesthesia. Electromagnetic flowmeters and hydraulic occluders were placed on the celiac, superior mesenteric (SMA) and left gastric or gastroduodenal arteries. Systemic arterial pressure was also recorded and gastric juice collected at 15 min intervals by aspiration. Blood flow in the left gastric and gastroduodenal arteries changed in direct proportion to celiac artery flow. Celiac flow increased (240% mean) with SMA flow decreased 50% for 1 hr and occluded for 30 min thereafter while total acid secretion increased by a mean 1200%. With SMA flow decreased 50% for 12 hr, celiac flow increased by a mean 95% with a 970% rise in total acid. Ligation of pancreaticoduodenal artery concurrent with reduced SMA flow produced minor celiac artery flow changes (6% decrease) and only a small (20%) decrease in acid concentration. Control dogs observed for 12 hr without SMA flow changes showed steady celiac blood flow and unchanged acid secretion. Acute mesenteric ischemia or occlusion produced a rise in celiac and gastric blood flow which appeared to be a response to the fall in mesenteric artery pressure since the changes were minimized with ligation of the major artery connecting the mesenteric and celiac vascular beds.

6612 EFFECT OF LONG TERM ANTICHOLINERGIC THERAPY ON GASTRIC ACID SECRETION, WITH OBSERVATIONS ON THE SERIAL MEASUREMENT OF PEAK HISTALOG RESPONSE.

(E.) Norgaard, R. P. (U. Texas Southwestern Med. Sch., Dallas), D. E. Polter, J. W. Wheeler, Jr. and J. S. Fordtran. *Gastroenterology* 58(6):750-755, 1970.

Thirty-three male ulcer patients and normal subjects were randomly allocated for long term oral therapy with placebo, poldine (Nacton) or glycopyrrolate (Robinul) in order to study response to gastric acid secretion. At specific intervals, treatment was interrupted temporarily for 48 hr, so that functional parietal mass could be assessed by means of peak secretory response to histalog. Oral treatment with anticholinergic drugs for 6 to 18 months did not result in significant depression of functional parietal mass. Prolonged treatment with anticholinergic drugs did not potentiate the antisecretory action of these agents on histalog-stimulated acid secretion. Patients on long-term placebo therapy had as much reduction in acid secretion by Nacton or Robinul as did patients who had received active drugs for 6 to 18 months. Serial observations in individual subjects suggest that the functional parietal cell mass in some ulcer patients and in some normal subjects may change drastically over a relatively short period of time; these variations are seemingly unrelated to anticholinergic therapy.

6613 GASTRIC JUICE LACTIC ACIDOSIS IN THE PRESENCE OF GASTRIC CARCINOMA. *(E.)*

Piper, D. W. (Dept. Med., U. Sydney, Australia), M. L. Kemp, B. H. Fenton, M. J. Croydon and A. D. Clarke. *Gastroenterology* 58(6):766-771, 1970.

Basal lactic acid content of gastric secretion was studied in 138 gastric ulcer patients, 70 control subjects, and 39 gastric carcinoma patients. Two of 138 gastric ulcer patients and none of 70 controls had concentrations of basal lactic acid above 100 μg/ml; of 39 carcinoma patients, 22 had lactic acid concentrations above this level. Glucose infusions resulted in a slight rise in lactic acid content of gastric juice; this rise was greater in carcinoma patients than in controls and gastric ulcer patients (the mean rise was 66.8, 6.1, and 26.6 μg/ml, resp.). The rise of lactic acid content of gastric juice was unrelated to a rise in blood sugar after glucose administration. Fructose infusions resulted in a marked rise in lactic acid concentration in approximately 70% of the carcinoma group. Extent of lactic acidosis of the gastric juice was unrelated to the size or site of the carcinoma, its histologic type, or to pH, volume, secretory rate, acid concentration, or sodium content of gastric juice.

6614 INFLUENCE OF ACHLORHYDRIA ON ASPIRIN-INDUCE OCCULT GASTROINTESTINAL BLOOD LOSS: STUDIES IN ADDISONIAN PERNICIOUS ANEMIA. *(E.)*

St. John, D. J. B. (Dept. Med., Monash U., Melbourne, Australia) and F. T. McDermott. *Brit Med J* 2(5707):450-452, 1970.

The effects of aspirin ingestion were studied on patients with Addisonian pernicious anemia and achlorhydria as compared with those able to secrete hydrochloric acid. Blood loss was measured by radiochromium technique and serum Vitamin B_{12} levels were also assayed. When aspirin (2.4 g/day) was admi stered orally four times daily for four days, increas ed amounts of blood were found in the feces of both control and experimental groups. In the anemic patients, blood loss rose from 0.36 ml/day to 2.26 ml/day while the control group showed an increase of 4. ml/day from a basal loss of 0.53 ml/day. Hydrochlor acid therefore appears to be unrelated to the occurrence of bleeding following aspirin administration.

6615 ENDOGENOUS HISTAMINE AND PROMETHAZINE-INDUCED ULCERS IN THE GUINEA-PIG. *(Fr.)*

Djahanguiri, B. (Fac. Med. U. Teheran, Iran) and M. Hemmati. *Therapie* 25(3):611-614, 1970.

The effects of a diamine oxidase inhibitor, aminoguanidine, and of a histidine decarboxylase inhibito NSD 1055, on promethazine ulcer-induction was studie in guinea pigs to determine if correlations existed between histamine liberation by promethazine and ulcer induction. NSD 1055 (150 mg/kg) and prometha (87.5 mg/kg) or aminoguanidine (10 mg/kg) and promethazine or promethazine alone was administered i.p. to 3 groups of 20 animals after 24 hr fasting and 10 animals received saline. The animals were sacrifice after 5 1/2 hr and the stomachs were examined microscopically for necrotic or hemorrhagic lesions. The percentage of ulcer induction for saline, NS 1055 and promethazine, aminoguanidine and promethazine, and promethazine alone was 0, 15, 90 and 50%, resp. Promethazine ulcer-induction thus seems to be relate to its histamine liberating effects.

6616 SCOLIOSIS AND ACUTE VASCULAR COMPRESSION OF THE DUODENUM. *(E.)*

Delaney, J. (U. Hosp., Minneapolis, Minn.) and W. Bunch. *Surgery* 67(6):901-906, 1970.

17 GASTRIC ULCER AND GASTRIC CANCER. *(E.)*
Anonymous. *Brit Med J* 2(5704):250, 1970.

8 GASTRIC COMPLICATIONS OF HYPERTROPHIC
PYLORIC STENOSIS IN ADULTS. *(E.)* DeMuth,
E. (Grad. Hosp. U. Pennsylvania, Philadelphia),
E. Baue, F. Honigman, J. M. Smith. *Amer Surg*
7):428-436, 1970.

9 FAMILIAL DUODENAL ATRESIA. *(E.)* Berant,
M. (Hillel Yaffe Mem. Govt. Hosp., Hadera,
ael) and D. Kahana. *Arch Dis Child* 45(240):281-
, 1970.

0 ON THE PATHOGENESIS OF GASTRIC ULCER IN THE
AGED AND ON THE ANTAGONISM BETWEEN CALCI-
D ATHEROSCLEROSIS AND GASTRIC CARCINOMA: A RADIO-
ICAL STUDY. *(E.)* Elkeles, A. (London, England).
mer Geriat Soc 18(6):450-457, 1970.

COINCIDENTAL OCCURRENCE OF INFRAPAPILLARY
DUODENAL CARCINOMA AND PARATHYROID ADENOMA.
) Boquist, L. (Inst. Path., U. Umea, Sweden) and
Bergdahl. *Cancer* 26(1):104-109, 1970.

2 GASTRIC CARCINOMA AS A SMALL, POLYP-LIKE
LESION WITH ASSOCIATED BENIGN POLYP. *(E.)*
enjann, R. (Dept. Med., U. Erlangen-Nuremberg,
many). *Endoscopy* 2(2):138-139, 1970.

THE Z PYLOROPLASTY: II. ANATOMICAL BASIS,
CLINICAL APPLICATION AND INDICATIONS. *(Fr.)*
al, J. (Fac. Med. Dakar, Senegal) and M'B. N'Doye.
Med 65(5):702-707, 1969.

EARLY AND DELAYED RESULTS AFTER PYLOROMYOTOMIES. *(Ger.)* Herrmann, K. (Med. Clin.,
drich Schiller U., Jena, Germany), H. Schickedanz
G. Zwacka. *Radiobiol Radiother* 11(1):11-15,
.

SUPERVOLTAGE RADIATION THERAPY OF THE STOMACH
CARCINOMA: I. SIDE REACTIONS AND COMPLI-
ONS OF MASSIVE IRRADIATION. *(Jap.)* Asakawa, H.
cer Inst Clin., Natori City, Miyagi, Japan) and N.
be. *Nippon Acta Radiol* 29(10):1304-1312, 1970.

BILLROTH I AS A RECONSTRUCTION METHOD AFTER
GASTRODUODENAL RESECTION. *(It.)* Cortesini,
Dept. Surg., U. Firenze, Italy), C. Masi and G.
elli. *Policlinico* 77(2):81-91, 1970.

6627 ELECTRICAL VAGAL STIMULATIONS FOR INDUCTION OF GASTRIC CONTRACTIONS. *(Ger.)* Perren, S. M. (Swiss Res. Inst. Davos), H. R. Schultheiss, J. Meine and M. Allgower, *Helvetia Chir Acta* 37(1-2):250-258, 1970.

6628 MORPHOLOGY OF THE GASTRIC MUCOSA IN VARIOUS FORMS OF CHRONIC GASTRITIS AND THE EFFECTS OF DIGESTION. *(Ger.)* Wolff, G. (Robert Rossle Clin., Berlin, Germany). *Z Gastroent* 8(3):168-174, 1970.

6629 CARCINOMA OF THE STOMACH: ANALYSIS OF A CLINICAL MATERIAL AND POSSIBLE WAYS OF IMPROVING THE PROGNOSIS. *(E.)* Ohman, U. (Karolinska Hosp., Stockholm, Sweden) and J. Wetterfors. *Acta Chir Scand* 136(3):219-226, 1970.

6630 GLOMUS TUMORS OF THE STOMACH. *(E.)* Ogden, Wm. W. II, (Dept. Surg. Louisiana St. U.), Warren Gottsagen, and Walter J. Trautman, Jr. *Amer Surg* 36(7):432-436, 1970.

6631 TECHNIQUE OF THE ESOPHAGOJEJUNAL ANASTOMOSIS. *(Ger.)* Allgower, M. (Surg. U. Clin. Basel, Switzerland). *Helvetia Chir Acta* 37(1-2): 126-130, 1970.

6632 NEURINOMA OF THE STOMACH: A CASE DEVELOPING IN THE ESOPHAGEAL AND GASTRIC REGION. *(It.)* Gava, L. (Dept. Surg., U. Bologna, Italy) and G. Dardani. *Minerva Chir* 25(9):693-703, 1970.

6633 THE POSTOPERATIVE AND POST-TRAUMATIC APPEARANCE OF ACUTE EROSIONS AND ULCERATIONS OF THE STOMACH AND DUODENUM. *(Ger.)* Reding, R. (Surg. Clin., Ernst Moritz Arndt U., Greifswals, Germany) and A. Festge. *Zbl Chir* 95(19):582-588, 1970.

6634 GASTRIC OUTLET OBSTRUCTION IN ADULTS IN IBADAN, NIGERIA. *(E.)* Lewis, E. A. (U. Coll. Hosp. Ibadan, Nigeria) and S. P. Bohrer. *W Afr Med J* 19(2):59-64, 1970.

6635 EROSION OF THE UPPER GASTROINTESTINAL MUCOSA. *(E.)* Palmer, E. D. (New Jersey Coll. Med., East Orange). *Amer Family Phys* 1(6):81-84, 1970.

6636 SURGICAL REPAIR OF SEVERE COMPLICATIONS AFTER GASTRECTOMY ACCORDING TO BILLROTH II. *(Fr.)* Burlui, D. (Hosp. Caritas, Bucarest, Rumania), C. Constantinescu and C. Ratiu. *J Chir* 98(3):239-245, 1969.

6637 SITE OF ANASTOMOSIS FOLLOWING GASTRECTOMY. *(Jap.)* Okamoto, M. (Kyoto Natl. Hosp., Japan), T. Yasutomi, K. Makino, M. Furuke, T. Matsumoto, Y. Hashimoto and T. Tanaka. *Iryo* 23(12):1479-1482, 1969.

6638 GASTRIC ANTRUM: III. INFLAMMATORY AND REACTIVE PATHOLOGY. *(Fr.)* Guerre, J. (no affil). *Concourse Med* 92(23):5189-5195, 1970.

6639 THE EFFECT OF ALDADIENE-POTASSIUM IN MAJOR SURGERY. *(Ger.)* Bussmann, J. F. (Mannheim Clin., U. Heidelberg, Germany), H. S. Furstenberg, H. H. Senft, I. Thode and J. Wachter. *Therapiewoche* 20(27):1304-1306, 1970.

6640 CONGENITAL DUODENAL OCCLUSION AND ANNULAR PANCREAS. *(Fr.)* Genton, N. (Canton Hosp., Lausanne, Switzerland) and H. Livet. *Praxis* 59(22): 796-802, 1970.

6641 GASTRIC EROSIONS. *(E.)* Roesch, W. (Dept. Med., U. Erlangen-Nuremberg, Germany) and R. Ottenjann. *Endoscopy* 2(2):93-98, 1970.

6642 COMPETENCE OF THE CARDIA BEFORE AND AFTER TOTAL ABDOMINAL VAGOTOMY. *(E.)* Christiansen, J. (Govt. Hosp., Copenhagen, Denmark), S. Borgeskov, K. Lockwood and P. Aagaard. *Scand J Gastroent* 5(3):217-220, 1970.

6643 CHRONIC DUODENAL ILEUS. *(E.)* Srinivasachari, P. (Kurnool Med. Coll., India) H. Rangan-adham, H. S. Gopal Rao and B. R. Reddy. *Indian J Surg* 32(3):133-140, 1970.

6644 METABOLICALLY ACTIVE TUMORS OF THE PANCREAS AND DUODENUM. *(Ger.)* Eckmann, L. (Tiefenau Hosp., Berne, Switzerland). *Praxis* 59(24):871-875, 1970.

6645 A CASE OF PRIMARY DUODENAL CANCER DIAGNOSED BY DUODENOSCOPY AND SCOPIC BIOPSY. *(E.)* Oi, I. (Tokyo Women's Med. Coll., Japan) and K. Nakayama. *Endoscopy* 2(2):134-137, 1970.

6646 GASTRIC DECOMPRESSION AFTER BILIARY AND GASTRIC SURGERY. *(E.)* Gunn, A. A. (Bangour Gen. Hosp., Broxburn, Scotland). *J Roy Coll Surg Edinb* 15(3):164-169, 1970.

6647 PRIMARY TUMORS OF THE STOMACH IN CHILDREN. *(E.)* Jakubowski, A. (Acad. Med. Warsaw, Poland), K. Jakubowska, A. Naumik and K. Pietron. *Ann Radiol* 13(3-4):169-175, 1970.

6648 CLINICAL SIGNIFICANCE AND ROENTGEN APPEARANCE OF THE GASTRIC POUCH AND GASTRODUODENAL ANASTOMOSIS FOLLOWING TRUNCAL VAGOTOMY WITH ANTRECTOMY. *(E.)* Herrington, J. L. Jr.(Vanderbilt U. Med. Ctr., Nashville, Tenn.). *Amer Surg* 36(7):403-414, 1970.

6649 GASTRIC PACKING IN THE CONTROL OF MASSIVE GASTRODUODENAL HEMORRHAGE. *(E.)* Brown, D. P. (St. Vincent Hosp., Worchester, Mass.). *Amer J Gastroent* 54(1):49-51, 1970.

6650 CONGENITAL DIAPHRAGMATIC OCCLUSION OF THE DUODENUM. *(E.)* Barakat, M. (Aleppo U. Med. Sch., Syria). *Brit J Clin Pract* 24(6):256-259, 1970.

6651 SIMULTANEOUS DETERMINATION OF VITAMIN B_{12} AND IRON ABSORPTION WITH A WHOLE-BODY ACTIVITY COUNTER FOLLOWING GASTRECTOMY, GASTRIC RESECTION AND IN ATROPHIC GASTRITIS. *(Ger.)* Walz, A. (St. Hosp. Berlin, Germany), W. Pribilla, R. Haring and P. Koeppe. *Deutsch Med Wschr* 94(1):25-30, 1970.

6652 CLINICAL STUDIES ON HIGH-MOLECULAR CONSTITUENTS OF GASTRIC JUICE: CLINICAL SIGNIFICANCE OF CHANGES OF GASTRIC JUICE LYSOZYME ACTIVITY IN VARIOUS STOMACH DISEASES. *(E.)* Yamada, G. (Sapporo Med. Coll., Japan). *Sapporo Med J* 35(4):235-250, 1970.

6653 DUODENAL STUMP INSUFFICIENCY FOLLOWING GASTRIC RESECTION. *(Ger.)* Roth, H. (Munsterlingen, Switzerland). *Helvetia Chir Acta* 37(1-2): 138-139, 1970.

6654 THE ACTION OF GASTRIC MUCOPROTEIN IN EXPERIMENTAL ULCERS. *(It.)* Cucinotta, U. (Dept. Pediat., U. Messina, Italy). *Arch Sci Med* 126(9):637-643, 1969.

;655 CANCER OF THE STOMACH: II. MALIGNANT MESENCHYMAL TUMORS. *(Fr.)* Chevrel, B. (Hosp. St. Antoine, Paris, France) and J. P. Chevrel. *Presse Med* 78(26):1199-1203, 1970.

;656 "GASTRIC VOLVULUS AND ABSENCE OF LEFT HEPATIC LOBE" SYNDROME. *(Fr.)* Tod, R. (Hosp. Claude Bernard, Paris, France), P. Danon and R. A. Thierree. *Presse Med* 78(24):1099-1106, 1970.

- P:Motil (6380)(6383)(6391)
- P:Secr:Stom (6400)(6406)
- Diagproc (6535)(6537)(6541)(6542)(6543)(6545)(6546)(6549)(6553)(6555)(6560)(6561)(6565)(6568)(6569)(6571)
- D:S.Intest (6675)
- D:Gen (6989)(6994)

STOMACH AND DUODENUM

Peptic Ulcers

657 · LIVER STUDIES IN PATIENTS WITH PEPTIC ULCER BEFORE AND FOLLOWING SURGERY. *(E.)* Ward, . (Bispebjerg Hosp., Copenhagen, Denmark), T. S. lsen and N. Tygstrup. *Scand J Gastroent* (supp. 7):137-142, 1970.

n 44 patients (32 male, 12 female; average age 57 ears) with peptic ulcer, hospitalized for surgical reatment of gastric or duodenal ulcer, liver tests bilirubin, transaminase, alkaline phosphatases, sulfo- romophthalein retention and unspecific choline sterase) and liver biopsy were studied 1 to 4 days rior to operation. The sulfobromophthalein retention est was most frequently abnormal (21 patients), ollowed by choline esterase, aspartate transaminase nd alkaline phosphatases, and only 1 patient had a lightly raised serum bilirubin. The liver biopsies howed only minute alterations, the most frequent eing bile plugs (more among female than among male atients) and pigment granules, and, to a lesser egree, slight fatty infiltration. No marked association between clinical data, liver tests and histologic ppearance was found. The liver tests became signifi- antly more abnormal 4 and 8 days after surgery, but gain could not be related to the clinical data or the urgical procedure. These alterations appeared to e transitory.

658 A CONTROLLED STUDY ON THE USE OF PROPANTHELINE AND AMYLOPECTIN SULFATE (SN-263) FOR RECURREN- ES IN DUODENAL ULCER. *(E.)* Sun, D. C. H. (VA Hosp. hoenix, Ariz.) and M. L. Ryan. *Gastroenterology* 8(6):756-761, 1970.

ffect of long term administration of an antipeptic gent, SN-263, (amylopectin sulfate) an anticholin- rgic drug, propantheline bromide, and combinations f the 2, were investigated in chronic ulcer patients n a double blind study. On long term placebo therapy, 2 of 16 patients showed a recurrence of ulcer disease 75% incidence). In the propantheline group (15 mg times a day), 7 out of 18 patients developed recur- ence of ulcer during the follow-up period of 1 year, n incidence of 39%. The SN-263 group (250 mg every hr during the waking period) had a low incidence of ulcer recurrence, 3 out of 19 patients or 16%, while the combined propantheline and SN-263 group had the lowest recurrence rate of 2 out of 17 or 12%. The only side effect observed in 1 or 2 patients of each group was a minimal dryness of the mouth.

6659 THE EFFECT OF RESTRAINT AND SOME ULCEROGENIC AGENTS ON THE SULFATION AND TURNOVER RATES OF GASTROINTESTINAL POLYSACCHARIDES. *(E.)* Terho, T. (Dept. Physiol., U. Turku, Finland) and K. Hartiala. *Scand J Gastroent* 5(3):197-205, 1970.

The effects of ulcerogenic agents (cinchophen and salicylic acid) and restraint on the sulfation and turnover rates of gastrointestinal polysaccharides (isolated by cetylpyridinium chloride precipitation and magnesium chloride solubilization) were studied in female rats. Chronic doses (0.33 mM/rat/day p.o.) of the ulcerogenic agents over a 10 day period and acute doses (1 mM/rat) of the agents produced no significant changes in the sulfation capacity of the gastrointestinal tract (except that chronic cinchophen activated sulfation). When the animals were subjected to restraint at 23°C for 24 hr, no ulcers were found in the glandular stomach, duodenum, or small intestine, and sulfation activity (cpm/μg hexosamine) increased slightly (395 to 715, 261 to 365, and 304 to 462, resp.); but when the same experiment was repeated at 20°C, ulcers developed to varying degrees and sulfation showed decreases in the glandular stomach (462 to 218), duodenum (268 to 235), small intestine (448 to 284), kidney (830 to 596), cartilage (105 to 36), and skin (128 to 69). Restrained rats (given 0.5 mC $Na^{35}SO_4$/100 g) with high ulcer frequencies had specific activities similar to those in controls indicating that turnover rates of sulfopolysaccharides did not change during restraint. Inhibition of sulfation during ulcerogenesis apparently is a result rather than a cause of ulcerogenesis.

6660 THE SURGICAL TREATMENT OF PEPTIC ULCER: A CRITICAL ANALYSIS OF RESULTS FROM SUBTOTAL GASTRECTOMY AND FROM VAGOTOMY PLUS PARTIAL GASTRECTOMY. *(E.)* Ochsner, A. (Ochsner Clin., New

Orleans, La.), P. R. Zehnder and S. W. Trammell. *Surgery* 67(6):1017-1028, 1970.

6661 THE INCIDENCE OF ASPIRIN INGESTION IN PATIENTS WITH PEPTIC ULCER. *(E.)* Duggan, J. M. (Roy. Newcastle Hosp., New South Wales, Australia) and B. L. Chapman. *Med J Aust* 57(16): 797-800, 1970.

6662 DELAYED RESULTS OF VAGOTOMY AND DRAINAGE PROCEDURE IN THE TREATMENT OF DUODENAL ULCER. *(It.)* Macris, G. (2nd Surg. Clin., U. Salonica, Greece), S. Koutsikos, N. Galani and V. Dalainas. *Minerva Chir* 25(9):637-641, 1970.

6663 A SURVEY OF 108 CASES OF DUODENAL ULCER (1947-1969). *(Fr.)* Buffat, J. D. (Clin. La Source, Lausanne, Switzerland). *Helvetia Chir Acta* 37(1-2):135-137, 1970.

6664 CLINICAL AND EXPERIMENTAL STUDIES ON FACTORS LEADING TO RELAPSE, RECURRENCE AND PROTRACTION OF GASTRIC ULCER. *(Jap.)* Ikeshita, T. (Sapporo Med. Coll., Japan). *Sapporo Med J* 36(1-2): 1-22, 1969.

6665 THE ADDITION OF AN ANTI-ANXIETY DRUG DIGLIUM, IN THE TREATMENT OF GASTRIC ULCERS. *(Fr.)* Hachen, H. J. (Clin. U. Surg. Geneva, Switzerland). *Therapeutique* 46(4):449-450, 1970.

6666 SURGICAL TREATMENT IN STEROID ULCER. *(E.)* Fukai, Y. (Nara Med. U., Japan), T. Takit M. Yamanouchi, Y. Enomoto, T. Ueda, Y. Yokota and S Nakajima. *J Nara Med Ass* 21(1):67-72, 1970.

6667 ECTOPIC ANASTOMOSIS OF THE COMMON BILE DUCT. *(Fr.)* Ionesco, A. (Hosp. Botosani, Rumania) *Lyon Chir* 66(2):105-107, 1970.

6668 PEPTIC ULCERS AND GALLBLADDER DISEASE. *(E* Ross, R. J. (Case Western Reserve U. Sch. Med., Cleveland, Ohio) and W. R. Pudvan. *Radiology* 96(1):119-121, 1970.

6669 ETIOLOGY AND PATHOGENESIS OF PEPTIC ULCER *(E.)* Hamori, A. (U. Med. Sch. Pecs, Hung *Ther Hung* 18(1):3-14, 1970.

6670 SHOULD THE TREATMENT OF A PEPTIC ULCER BE CONTINUED UNTIL THE ULCER HAS HEALED? *(E.* Bock, O. A. A. (Karl Bremer Hosp., Bellville, Union of South Africa). *S Afr Med J* 44(19):552-553, 197

- P:Motil (6391)
- P:Secr:Stom (6398)
- Diagproc (6524)(6568)
- D:Stomduo (6612)(6617)(6620)(6626)(6631) (6639)(6643)
- D:Gen (6961)

SMALL INTESTINE

6671 RELATIONSHIP OF THE ENTEROHEPATIC CYCLE TO ULCEROGENESIS IN THE RAT SMALL BOWEL WITH FLUFENAMIC ACID. *(E.)* Wax, J. (Parke, Davis Co., Ann Arbor, Michigan), W.A. Clinger, P. Varner, P. Bass and C.V. Winder. *Gastroenterology* 58(6):772-780, 1970.

The relationship of the enterohepatic cycle to ulcerogenesis in the small intestine was studied in rats treated with flufenamic acid, using surgical interruption of the common bile duct and chemical alteration of enterohepatic circulation with either cholystyramine or paromomycin. The single dose, i.m. or p.o., 24 hr ulcerogenic ED_{50} of flufenamic acid in fasted rats ranged from 22-51 mg/kg. A high incidence of ulcerogenesis was present in intact animals 16 hr after flufenamic acid administration while animals with ligated bile ducts were totally protected. There were no ulcerations in any ligat animals, although plasma levels in those receiving second dose of drug were significantly elevated. Ulcerogenesis at 24 hr was significantly inhibited pretreatment with 400 mg/kg of cholestyramine (70 t 80%). Plasma levels of flufenamic acid in animals pretreated with cholestyramine were significantly less than those treated with water. In animals pr treated with paromomycin, ulcerogenesis was preven or significantly depressed. The paromomycin experi ments strongly suggest that the mere presence per of all of the untrapped bile-drug constituents in lumen is insufficient to precipitate ulceration. U less antibiotics interfere importantly with bile secretion, other mechanisms could include transmuc sal absorption of one or more of bile-drug constit ents, their deconjugation by microbial enzymes, an or drug-facilitated microbial injury of mucosa.

6672 THE EFFECT OF STAPHYLOCOCCAL ENTEROTOXIN ON THE EPITHELIAL MUCOSUBSTANCES OF THE SMALL INTESTINE OF RHESUS MONKEYS. *(E.)* Sheahan, D. G. (Walter Reed Army Med. Ctr., Washington, D.C.), H. R. Jervis, A. Takeuchi and H. Sprinz. *Amer J Path* 60(1):1-18, 1970.

The effect of staphylococcal enterotoxin on epithelial mucins of the small intestine was studied histochemically in rhesus monkeys. The most significant observations noted were discharge with subsequent repletion of goblet cell mucin, and a reversible reduction in number, size and basophilia of apical granules of crypt epithelium. Changes in mucosubstances appeared in the jejunum as early as 1 hr after ingestion of enterotoxin and was most marked between 2 and 8 hr. Mucosubstances reverted to normal between 8 to 12 hr and at 72 hr after enterotoxin administration, they are indistinguishable from controls. Similar changes appeared later but were less pronounced in the upper and lower ileum. Although the neutral, PAS-positive, mucosubstances in crypt granules appeared to be reduced during the first 6 hr after administration of enterotoxin, they did not disappear, whereas there was almost complete depletion of sulfated mucosubstances. There was an increased number and size of crypt granules and crypt and goblet cells with positive PAS staining and subsequent increased basophilia during recovery (12 to 24 hr). Sulfomucins on the luminal aspect of the striated border appear to be synthesized in the crypt cells and purified staphylococcal enterotoxin apparently influences metabolism and/or secretion of intestinal mucins.

6673 RADIATION INJURY OF THE INTESTINE WITH COMPLICATING ILEUS. *(Ger.)* Schier, J. (Surg. U. Clin. Mainz, Germany). *Therapiewoche* 20(26): 1261-1265, 1970.

6674 POST-OPERATIVE OCCLUSION OF THE SMALL INTESTINE. SURGICAL AND HUMORAL TREATMENT. *(Fr.)* Marella, M. S. (Montevideo, Uruguay) and J. Bouton. *Lyon Chir* 66(2):117-120, 1970.

6675 DUODENAL OBSTRUCTION DUE TO MALIGNANT VILLOUS ADENOMA. *(E.)* Dwyer, W. A. (St. Joseph's Hosp., Paterson, N. J.) and R. F. O'Brien. *J Med Soc New Jersey* 67(8):477-479, 1970.

6676 LIPOMA OF THE SMALL INTESTINE. *(Fr.)* Lafitte, A. (no affil), P. Scali and F. Potet. *J Med* 141(14):591-597, 1970.

6677 A 5-YEAR CURE OF INTESTINAL SARCOMA IN A CHILD. *(Fr.)* Beau, A. (no affil) M. Guillamot and C. Macinot. *Ann Med Nancy* 9(3):217-219, 1970.

6678 RESULTS OF THE TREATMENT OF POST-OPERATIVE EXTERNAL FISTULAS OF THE SMALL INTESTINE. *(F.)* Peycelon, R. (Fac. Med. Lyon, France), R. P. Correard, L. Coronat and J. Balatre. *Lyon Chir* 66(2): 97-99, 1970.

6679 ISCHEMIC SMALL INTESTINE DETERIORATIONS. *(Ger.)* Stirnemann, H. (Surg. Clin. U. Berne, Switzerland), J. Laissue and H. Burki. *Helvetia Chir Acta* 37(1-2):157-166, 1970.

6680 PEUTZ-JEGHERS SYNDROME. *(Ger.)* Palme, G. (Med. Clin., Free U. Berlin, Germany) and C. Von Wolff. *Internist* 11(4):133-134, 1970.

6681 DIVERTICULAR DISEASE OF THE JEJUNUM. *(E.)* MacGregor, A. B. (Dept. Clin. Surg., U. Edinburgh, Scotland) and T. Hamilton. *J Roy Coll Surg Edinb* 15(3):145-150, 1970.

6682 PRIMARY MALIGNANT TUMORS OF THE SMALL INTESTINE. *(E.)* Reyes, E. L. (Henry Ford Hosp., Detroit, Michigan) and R. W. Talley. *Amer J Gastroent* 54(1):30-43, 1970.

◎ P:Morph (6342)
o Diagproc (6530)(6561)
o D:Gen (6942)(6949)

SMALL INTESTINE

Malabsorption

6683 INTESTINAL VILLOUS ATROPHY AND MALABSORPTION. *(Fr.)* Laumonier, R. (Hosp. Charles Nicolle, Rouen, France), J. Metayer and C. Marche. *Presse Med* 78(24):1095-1098, 1970.

Villous atrophy was studied on 87 jejunal biopsies (initial portion) from maldigestion and malabsorption affected patients and on 10 normal samples. Four degrees of atrophy were defined (from 2nd to 5th degree, the first degree corresponding to normal). In 50% of the impaired digestion cases a 2nd degree atrophy (mucosal and secretory changes of the villous epithelium, diminution of the enterocytes) or a 3rd degree atrophy (blunting and shortening of villi) was found. Celiac disease determined the most severe atrophies of the 4th degree (the villi were shorter than the crypts which were deeper than usual and the villous epithelium assumed a vacuolated aspect), and the 5th degree (obliteration of villi and flattening of mucosa). No precise relationship between clinical and histological findings could be established but severe atrophy appears not to be specific and may occur in secondary malabsorption as well. The various degrees of villous atrophy seem to indicate the progress of a single process in which the primary lesion induces an inability for villous epithelium renewal.

6684 CONGENITAL MALABSORPTION OF FOLATE. *(E.)*

Lanzowsky, P. (Long Island Jewish Med. Ctr., New Hyde Park, New York). *Amer J Med* 48(5)580-583, 1970.

Two siblings and a 20-year old girl have been reported by 2 groups of investigators as having congenital isolated defects of gastrointestinal absorption of folic acid and defect of folic acid transport into cerebrospinal fluid; results included recurrent megaloblastic anemia, mental retardation, convulsions and a neurologic movement disorder. Ataxia was observed in 2 siblings, while athetotic movements were observed in the 20-year old girl. This patient demonstrated a special defect of absorption of folic acid in its naturally occurring form as pteroylpolyglutamic acid as well as pteroylmonoglutamic, pteroyldiglutamic, pteroyltriglutamic acids, N^5-formyl- and N^5-methyltetrahydrofolic acids and an inability normally to transfer folic acid from blood into the cerebrospinal fluid. Absorption was not enhanced in the presence of normal human duodenal juice, lyophilized calf jejunum or lyophilized calf pancreas. The patient described herein could be maintained for years clinically and hematologically normal on an oral regimen of 40 mg of folic acid daily, but is unable to absorb small physiologic quantities of the vitamin. There is evidence that folate undergoes a metabolic change during transport across the gut. The precise defect in folate transport has not been elucidated in these patients.

6685 ^{47}Ca STUDIES IN ADULT CELIAC DISEASE AND OTHER GASTROINTESTINAL CONDITIONS WITH PARTICULAR REFERENCE TO OSTEOMALACIA. *(E.)*

Harris, O. D. (Gen. Hosp., Birmingham, England), H. M. Philip, W. T. Cooke and W. F. R. Pover. *Scand J Gastroent* 5(3):169-175, 1970.

Measurements of plasma levels and 6-day retention of isotope following oral administration of ^{47}Ca were undertaken in 31 patients (17 with adult celiac disease, 14 with other gastrointestinal disorders) to determine its value in detection of osteomalacia. Correlation of 60 and 120 min plasma levels with 6-day whole body counts of the heterogeneous group of subjects was .271 and .719 resp., but at any given plasma result, percentage retention ranged between 40-70%; this factor precluded use of this method as a measure of calcium absorption. Mean 60 and 120-min plasma levels of ^{47}Ca were lower than controls in all groups but were significantly lower in osteomalacic celiacs and patients with normal bones. Mean plasma levels of 5 patients with celiac disease receiving calciferol were 3.18 and 4.68 mg/100 ml at 60 and 120 min, resp., while 6-day retention averaged 68.7 mg/100 ml (range 51.6-81.1). Retention tests before and after p.o. calciferol therapy (1.25 mg daily for 2 to 4 months) were completed in 5 patients and 1 normal subject. Increase in ^{47}Ca in osteomalacic patients ranged from 2.4-39.5% retention (16.8% mean increase) while in the normal subject it increased from 52.6-59.6%. The effect of calciferol and the lack of correlation between retention level and bone histology suggests that calcium absorption is not an important or primary factor in the production of osteomalacia associated with gastrointestinal diseases. Neither ^{47}Ca plasma levels nor retention of ^{47}Ca helped the diagnosis of osteomalacia.

6686 THE COLUMNAR CELLS IN MALABSORPTION SYNDROMES. *(Fr.)*

Laumonier, R. (Hosp. Charles Nicolle, Rouen, France), C. Marche and J. Metayer. *Presse Med* 78(24):1089-1094, 1970.

Jejunal biopsies (initial portion) obtained by Debray's technique from patients affected by a-β-lipoproteinemia, celiac disease, a-γ-globulinemia, Whipple's disease and Pick's syndrome were studied by light and electron microscopy. Intracellular membrane system alterations and microvillous distortions (producing a reduction in exchange processes due to the decrease of cell surface and transport enzymes) were common to all malabsorption syndromes. A-β-lipoproteinemia was characterized by villous irregularities and bright columnar cells loaded with membrane lacking fatty droplets which might be due to a deficiency in chylomicron formation by lack of lipoproteins. Celiac disease produced villous atrophy and arrest of cellular functional maturation while all enzyme activities except alkaline phosphatase were reduced; the intracellular system was normal. A-γ-globulinemia led to a flattening of mucosa, (due to a 3rd degree villous atrophy) and a delay in fatty absorption occurring otherwise regularly. Whipple's disease revealed typical cells with intense lysosoma activity due to bacterial bodies. Pick's syndrome revealed intercellular alterations disturbing the normal circulation of metabolites. Electron microscopy and cytochemistry provided information related to physiopathology rather than to diagnosis.

6687 ELECTRON MICROSCOPIC INVESTIGATIONS IN INTESTINAL LIPODYSTROPHY (WHIPPLE'S DISEAS

(Ger.) Wolf, M. (Robert Rossle Clin., Berlin, Germa G. P. Wildner and I. Ley. *Deutsch Gesundh* 25(15):677-681, 1970.

88 INTESTINAL MALABSORPTION: A STUDY OF 16 PATIENTS. *(Fr.)* DeBarros, Q. (Hosp. La aux-de-Fonds, Switzerland), R. Uebersax and B. urvoisier. *Rev Med Suisse Roman* 90(6):465-472, 70.

89 INTESTINAL MALABSORPTION: A CLINICAL STUDY OF 22 CHILDREN OVER 2 YEARS OF AGE. *(E.)* sakorpi, J. K. (Child. Hosp., U. Helsinki, Finland), Kuitunen and P. Pelkonen. *Acta Paediat Scand* (3):273-280, 1970.

90 DISACCHARIDE INTOLERANCE: A REVIEW FOR PRACTICING PHYSICIANS. *(E.)* Cocco, A. E. t. Joseph Hosp., Towson, Md.), G. C. Gokim, Jr. d B. J. Carbary. *Maryland Med J* 19(7):51-55, 70.

6691 CONGENITAL LACTOSE MALABSORPTION. *(E.)* Levin, B. (Queen Elizabeth Hosp. Child., London, England), J. M. Abraham, E. A. Burgess and P. G. Wallis. *Arch Dis Child* 45(240):173-177, 1970.

6692 REACTION TO IRON SORBITOL INJECTION IN THREE CASES OF MALABSORPTION. *(E.)* Karhunen, P. (1st Dept. Med. U. Helsinki, Finland), G. Hartel, V. Kivikangas and M. Reinikainen. *Brit Med J* 2(5708):521-522, 1970.

o P:Absorp (6348)(6375)
o Diagproc (6552)
o D:L.Intest:Ulccol (6732)
o D:Gen (6976)

LARGE INTESTINE

93 ISCHEMIC COLITIS. *(E.)* Balslev, I. (Inst. Path., Copenhagen, Denmark), H. E. Jensen, Norgaard and P. Poll. *Acta Chir Scand* 6(3):235-242, 1970.

ree case histories and relevant literature are used review the etiology, symptoms, X-ray changes, thology, differential diagnosis, and the treatment ischemic colitis. The cause of the disorder is reduction or cessation of arterial blood flow to segment of the colon, followed by infarction of rying extent. Two patients described here had clusions of the middle colic artery and presented mptoms such as acute onset of abdominal pain, often companied by nausea, vomiting, melena or passage fresh blood, mild fever and debility. X-ray amination in acute partial occlusion showed a broad-sed defect of the contour of the colon wall, finger- size, or a larger so-called "thumbprint" was served. With more extensive changes, the lumen peared to be stenosed over longer or shorter stretches to large, pad-shaped thickenings in the intestinal ll. The most essential differential findings of chemic colitis are macroscopically demonstrable crophages containing hemosiderin and atherosclerotic ssels with narrow lumina; these changes are frequent with Crohn's Disease and ulcerative itis.

94 SKIN-REACTIVE SOLUBLE ANTIGEN FROM INTESTINAL CANCER-CELL-MEMBRANES AND RELATIONSHIP CARCINOEMBRYONIC ANTIGENS. *(E.)* Hollinshead, A. eorge Washington U. Med. Ctr., Washington, D.C.), Glew, B. Bunnag, P. Gold and R. Herberman. *cet* 1(7658):1191-1195, 1970.

Skin tests were performed in 19 patients with carcinoma of rectum and colon in order to detect cellular-immunity (delayed-hypersensitivity) reactions to tumor antigens (from membranes of autologous tumor cells). Seventeen of these patients showed positive delayed reactions to soluble fractions. Two patients gave equivocal or negative reactions; no patients gave persistent positive reactions to control fractions. Biopsies of positive skin reactions showed histological reactions compatible with delayed hypersensitivity reactions. Skin-reaction antigens were also positive in 2 patients (already positive to tumor membranes) receiving digestive tract cells of the first-trimester and second-trimester fetuses. Fetal membranes from third-trimester fetuses were tested in one fetus, but gave a negative response. Carcinoembryonic antigen (C.E.A.) was detected in many of the fractions producing positive skin reactions. Fetal-cell-membrane antigens seem to be related in some manner to tumor-specific transplantation antigens being studied in adult tumor cells, and are also closely related in antigenic structure to those antigens (C.E.A.) detectable in sera of patients with intestinal cancer. C.E.A. and tumor-specific transplantation antigens may be two separate components.

6695 THE OCCURRENCE OF RECTAL PERFORATION DURING CONTRAST MEDIUM INFUSION. *(Ger.)* Lafrenz, M. (Med. U. Clin., Rostock, Germany). *Deutsch Gesundh* 25(19):866-869, 1970.

6696 SURGICAL MANAGEMENT OF DIVERTICULITIS. *(Ger.)* Mappes, G. (Surg. U. Clin. Mainz, Germany). *Therapiewoche* 20(26):1250, 1970.

6697 COMPLICATED ENDOMETRIOSIS OF THE LARGE BOWEL. *(E.)* Rose, T. F. (Roy. North Shore Hosp., Sydney, Australia). *Med J Aust* 57(18):891-896, 1970.

6698 PNEUMATOSIS CYSTOIDES OF THE COLON. *(It.)* Ciccolini, A. (Maria Vittoria Hosp., Turin, Italy). *Arch Sci Med* 126(9):684-686, 1970.

6699 WATER AND ELECTROLYTE EXCHANGES IN THE RECTAL AMPULLA IN SEVERE CASES OF CHRONIC RENAL FAILURE. *(It.)* Bossini, A. (Central Hosp. Rome, Italy), G. De Martino Rosaroll and E. Bologna. *Rass Fisiopat Clin Ter* 41(6):585-593, 1969.

6700 CHRONIC APPENDICITIS. *(Por.)* Da Silva, A. L. (Fac. Med. U. Fed. Rio De Janeiro, Brazil), J. R. Da C. Melo and J. P. G. Guerra. *Rev Brazil Med* 27(2):73-80, 1970.

6701 SACRAL APPROACH TO CERTAIN PAPILLOMAS OF THE RECTAL AMPULLA. *(Fr.)* Adloff, M. (Strasbourg, France) and J. J. Kohler. *J Chir* 98(1-2):19-26, 1970.

6702 ACUTE APPENDICITIS AFTER TERMINATION OF PREGNANCY AND DURING PUERPERIUM. *(Ger.)* Schwarz, P. (U. Gynec. Clin., Innsbruck, Austria). *Wien Med Wschr* 120(27-29):523-525, 1970.

6703 STENOSING PERIDIVERTICULITIS OF THE SIGMOID IN THE DIFFERENTIAL DIAGNOSIS OF SIGMOID CARCINOMA. *(Ger.)* Becker, H. (Northwest Hosp., Frankfurt, Germany) and E. Ungeheuer. *Therapiewoche* 20(26):1250-1251, 1970.

6704 REVERSIBLE VASCULAR OCCLUSION OF THE COLON. *(E.)* Bouchillon, C. D. (Jones Cty. Commun. Hosp., Laurel, Miss.). *J Mississippi Med Ass* 11(6):331-333, 1970.

6705 PSEUDO-OBSTRUCTION OF THE LARGE BOWEL. *(E.)* Caves, P. K. (Dept. Surg., Queen's U. Belfast, Ireland) and H. A. Crockard. *Brit Med J* 2(5709):583-586, 1970.

6706 POLYPS AND POLYPOSIS OF THE COLON AND RECTUM. *(Fr.)* Duret, P. (no affil). *Concours Med* 92(16):3583-3592, 1970.

6707 ULCER OF RECTUM. *(E.)* Anonymous. *Brit Med J* 2(5704):251, 1970.

6708 POSTOPERATIVE CHEMOTHERAPY FOR PROGNOSTICALLY POOR MAMMARY, BOWEL AND RENAL CARCINOMA. *(E.)* Bateman, J. C. (Alexandria Va.). *Southern Med J* 63(6):715-720, 1970.

6709 CURRENT CONCEPTS OF SURGICAL TREATMENT OF ANORECTAL FISTULA. *(E.)* Lawson, T. C., Jr. (Birmingham, Ala.). *Southern Med J* 63(6):708-710, 1970.

6710 EXPERIENCE WITH THE RIPSTEIN PROCEDURE FOR MASSIVE RECTAL PROLAPSE. *(E.)* Sawyers, J. L. (Vanderbilt U. Med. Ctr., Nashville, Tenn.). *Southern Med J* 63(6):639-641, 1970.

6711 AN ANALYSIS OF SIX HUNDRED AND SIXTY-SIX APPENDECTOMIES IN ADULTS, 1959-1968. *(E.)* Spitz, L. (Johannesburg Gen. Hosp., Union of South Africa). *S Afr J Surg* 7(3):129-137, 1970.

6712 ACUTE VOLVULUS OF THE MEGASIGMOID AND ITS TREATMENT. *(E.)* Friedlaender, E. (Hadassah Hosp., Tel-Aviv, Israel). *Int Surg* 54(2):107-111, 1970.

6713 THE ROLE OF SURGERY IN DIVERTICULAR DISEASE OF THE COLON. *(E.)* MacGregor, A. B. (Dept. Clin. Surg., U. Edinburgh, Scotland) B. C. Abernethy and J. W. W. Thomson. *J Roy Coll Surg Edinb* 15(3):137-144, 1970.

6714 POLYPOID LESIONS OF THE COLON. *(E.)* Sheft, D. J. (U. California Sch. Med., San Francisco) and A. R. Margulis. *Med Times* 98(7):107-115, 1970.

6715 DIVERTICULAR DISEASE OF THE COLON: A DISEASE OF WESTERN CIVILISATION. *(E.)* Painter, N. S. (Manor House Hosp., Golders Green England). *Dis Month* (June):1-57, 1970.

6716 RESECTION OF THE ASCENDING COLON. *(E.)* Steiger, Z. (Allen Park VA Hosp., Mich N. M. Jackiw, W. H. Gerwig, Jr. and T. C. Knecht *Michigan Med* 69(15):669-672, 1970.

6717 THE HYPOGANGLIONIC MEGACOLON ACCOMPANYING HIRSCHSPRUNG'S DISEASE. *(Ger.)* Meier-Ruge, W. (Path. Inst. U. Basel, Switzerlan R. Morger and F. Rehbein. *Z Kinderchir* 8(3):254-264, 1970.

6718 DIVERTICULOSIS OF THE APPENDIX. *(E.)* Esparza, A. R. (Rhode Island Hosp., Providence) and C. M. Pan. *Surgery* 67(6):922-928, 1970.

19 CONGENITAL ANORECTAL ANOMALIES. *(E.)* Bhasin, R. P. (Maulana Azad Med. Coll., w Delhi, India), B. K. Jalali, K. S. Mehdiratta d Satyanand. *Indian J Surg* 32(3):141-154, 1970.

20 PRIMARY RESECTION OF SIGMOID FOR AN ACUTE SIGMOID VOLVULUS. *(E.)* Tambaku, N. (B. J. Med. Coll., Poona, India). *Indian Surg* 32(3):155-159, 1970.

21 SO-CALLED CHRONIC APPENDICITIS FROM THE SURGICAL VIEWPOINT. *(Ger.)* Sege, (St. Gallen, Switzerland). *Helvetia Chir ta* 37(1-2):177-180, 1970.

22 A LUMBAR HERNIA WITH RECONSTRUCTION OF THE PELVIC COLON. *(Fr.)* Biotois, H. aris, France) and C. Couinaud. *J Chir* (1-2):27-30, 1970.

23 FUNCTIONAL MEGACOLON IN PSYCHOTIC PATIENTS. *(Ger.)* Cadalbert, M. (Canton Hosp. Chur, itzerland), A. Fenner and M. Schamaun. *Helvetia ir Acta* 37(1-2):181-184, 1970.

24 ANORECTAL MELANOBLASTOMAS. *(Fr.)* Thiers, H. (no affil.), G. Moulin, J. Racouchot d F. Michel. *Lyon Med* 223(14):761-762, 1970.

6725 DECOMPRESSION OF THE COLON WITH COMPLETE DIVERSION OF FECAL STREAM BY AN *IN SITU* COLONIC CATHETER: A PILOT STUDY. *(E.)* Schulman, N. H. (Bayside, N. Y.), H. G. Pritham and S. G. Polin. *Surgery* 67(6):918-921, 1970.

6726 RADIOGRAPHY OF THE APPENDICEAL MUCOCELE. *(Ger.)* Rodl, W. (St. Hosp. Frankfurt, Germany). *Med Welt* 21(25):1148-1149, 1970.

6727 MALIGNANT MELANOMA OF THE ANUS-RECTUM. *(E.)* Palma, F. (Prov. Hosp., Jaen, Spain). *Amer J Proctol* 21(4):271-274, 1970.

6728 PEDIATRIC ANO-RECTAL PROBLEMS. *(E.)* Ditkowsky, S. P. (Chicago, Ill.). *Amer J Proctol* 21(4):275-279, 1970.

6729 MALIGNANT TUMORS OF THE COLON AND RECTUM: INCIDENCE, DISTRIBUTION AND PATHOLOGY IN 110 CASES. *(E.)* Montanez, O. (Hosp. 20 de Noviembre, Mexico City, Mexico), J. R. Zarate and P. Maldonado. *Amer J Proctol* 21(4):267-270, 1970.

- P:Secr:Int (6496)
- P:Gen (6505)(6512)
- Diagproc (6520(6532)(6533)(6559)(6576)(6577)
- D:Gen (6930)(6947)(6959)(6961)(6975)(6994)
- D:Gen:Parasit (7013)(7017)

LARGE INTESTINE

Ulcerative Colitis

30 EFFECTS OF PRELIMINARY INCUBATION OF LYMPHOCYTES WITH SERUM ON THEIR CYTO-XICITY FOR COLONIC EPITHELIAL CELLS. *(E.)* orter, R. G. (Mayo Clin., Rochester, Minn.), A. Huizenga, S. G. ReMine and R. J. Spencer. *stroenterology* 58(6):843-850, 1970.

periments were carried out to assess the effects preliminary incubation of normal lymphocytes) subjects) or lymphocytes from 5 subjects with tive chronic ulcerative colitis or granulomatous litis with their own sera, pooled normal human rum, or sera from other patients, including sera tained 10 days following colectomy, on their cyto-xicity for human colonic epithelial cells *in vitro*. eliminary treatment for 4 days of lymphocytes from normal subjects with sera from patients with ulcerative or granulomatous colitis led to their demonstration of cytotoxic properties for colonic epithelium, but this was not found if 10-day post-operative ulcerative colitis sera, fetal calf serum, pooled normal human serum, or sera from patients with other diseases were used. Cytotoxicity of lymphocytes from patients with ulcerative or granulomatous colitis for colonic cells *in vitro* was decreased markedly (mean survival for initial test, 73% vs 92% after retesting 4 days later) by pre-treatment with sera from other patients with these diseases. Similar pretreatment of lymphocytes from other colitis patients with their own serum, fetal calf serum, or pooled normal human sera did not decrease the cytotoxicity for colonic epithelial cells.

6731 CELL RENEWAL IN THE HUMAN RECTUM: *IN VITRO* AUTORADIOGRAPHIC STUDY ON ACTIVE ULCERATIVE COLITIS. *(E.)* Bleiberg, H. (U. Hosp. St. Pierre, Brussels, Belgium), P. Mainguet, P. Galand, J. Chretien and N. Dupont-Mairesse. *Gastroenterology* 58(6):851-855, 1970.

Generation time and cell renewal in human rectal mucosa was studied in normal subjects and in patients with ulcerative colitis. A double labeling technique with two pulses of ^{3}H-thymidine, followed by autoradiography, was applied to biopsies incubated *in vitro*. No significant difference occurred for S-phase duration (deoxyribonucleic acid synthesis phase) in normal and pathological tissues. Mean turnover time in ulcerative colitis was significantly shorter (34 hr) than in normal tissues (90 hr). Extension of the proliferative zone (which is usually limited to the lower parts of the crypts in normal rectal mucosa) toward the upper part of the crypt was observed in ulcerative colitis. In ulcerative colitis, morphological evolution of rectal mucosa toward atrophy, which expresses a change of normal equilibrium between cell loss and cell production, seems to be explained by increased rate of cell destruction rather than by decreased rate of cell formation.

6732 THE SMALL-INTESTINAL FUNCTION IN ULCERATIVE COLITIS. *(E.)* Kasper, H. (Sch. Med., Justus Leibig U., Giessen, Germany) and H. A. Kuhn. *Amer J Proctol* 21(4):253-257, 1970.

The effect of ulcerative colitis on the absorption and morphology of the villi of the small intestine was studied in 20 patients using lactose and vitamin A tolerance tests, the D-xylose test, and microscopic and histological examinations of the mucosa. A pathologic lactose test, D-xylose test, and vitamin A test was found in one, three and two cases, resp. Microscopic examination of jejunal mucosa in 5 patients did not reveal changes of the villi in the sense of partial or subtotal villous atrophy. On the contrary, especially leaf-shaped villi were found in all patients and histological examination did not reveal pathological changes. Small intestinal involvement seems to occur only during the acute phase of ulcerative colitis and then improves rather quickly.

6733 FOUR CASES OF ULCERATIVE COLITIS IN CHILDHOOD. *(Jap.)* Shimakawa, T. (Nara Natl. Hosp., Japan) and R. Hori. *Iryo* 23(12):1550-1555, 1969.

6734 ULCERATIVE AND "GRANULOMATOUS" COLITIS-
VALIDITY OF DIFFERENTIAL DIAGNOSTIC CRITERIA: A STUDY OF 100 PATIENTS TREATED BY TOTAL COLECTOMY. *(E.)* Schachter, H. (Pritzker Sch. Med., U. Chicago, Ill), M. J. Goldstein, H. Rappaport, J. J. Fennessy and J. B. Kirsner. *Ann Intern Med* 72(6):841-851, 1970.

6735 ULCERATIVE COLITIS AND CROHN'S DISEASE. *(E.)* Anonymous. *Lancet* 1(7660):1326-1327, 1970.

6736 ASPECTS OF ULCERATIVE COLITIS. *(E.)* Sircus, W. (Western Gen. Hosp., Edinburgh, Scotland). *Trans Coll Phys Gynaec S Afr* 14(1):37-61, 1970.

6737 INFLAMMATORY BOWEL DISEASE IN A FAMILY: OBSERVATIONS RELATED TO PATHOGENESIS. *(E.)* Gelfand, M. D. (Wilford Hall USAF Hosp., Lackland AFB, Texas) and C. L. Krone. *Ann Intern Med* 72(6):903-907, 1970.

- Diagproc (6564)

PANCREAS

6738 CURRENT STATUS OF PANCREAS TRANSPLANTATION. *(Fr.)* Rausis, C. (Canton Hosp., Lausanne, Switzerland), Y. Ogata, A. Choudhury and A. M. Khazei. *Praxis* 59(24):893-897, 1970.

6739 IDIOPATHIC STEATORRHEA WITH ABDOMINAL PAIN - PANCREATIC CARCINOMA. *(Ger.)* Raith, L. (1st Med. Clin. U. Munich, Germany), D. Locher, D. Englehardt and H. J. Karl. *Internist* 11(4)145-146, 1970.

6740 PANCREATICO-DUODENAL AND RENAL ALLOTRAN
PLANTATION IN JUVENILE ONSET, INSULIN
DEPENDENT, DIABETES MELLITUS WITH TERMINAL NEPHRO
(E.) Lillehei, R. C. (U. Minnesota Sch. Hlth. S
Minneapolis), R. L. Simmons, J. S. Najarian and
C. Goetz. *Langenbeck Arch Chir* 326(2-3):88-105,

6741 TRAUMA OF THE PANCREAS. *(Fr.)* Boumghar
M. (Canton Hosp., Lausanne, Switzerlan
Praxis 59(22):813-818, 1970.

42 PANCREATIC HETEROTOPIAS. *(Fr.)* Bonard,
M. (Canton Hosp., Lausanne, Switzerland).
axis 59(22):803-812, 1970.

43 TRAUMATIC RUPTURE OF THE PANCREAS. *(Fr.)*
Devic, G. (Vienna, Austria), J. Garde and
Gelain. *Lyon Chir* 66(2):146-148, 1970.

44 CANCER OF THE PANCREAS. *(Fr.)* Waridel,
D. (Canton Hosp., Lausanne, Switzerland)
d C. Rausis. *Praxis* 59(24):881-892, 1970.

45 PANCREATIC PSEUDOCYSTS (RESULTS OF
IMMEDIATE OR DELAYED SURGICAL TREATMENT).
r.) Saegesser, F. (Canton Hosp., Lausanne,
itzerland) and M. Boumghar. *Praxis* 59(23):831-839,
70.

46 RESULTS OF PANCREATICOJEJUNOSTOMY FOR
CHRONIC PANCREATITIS AND FOR CANCER OF THE
NCREAS IN 45 PATIENTS. *(Fr.)* White T. T. (U. Hosp.,
attle, Wash.). *Praxis* 59(23):847-850, 1970.

6747 EXTRA-PANCREATIC TUMORS PRODUCING HYPOGLYCEMIA. *(Fr.)* Saegesser, F. (Canton Hosp., Lausanne, Switzerland), J. Pettavel, P. Bougha and M. Muller. *Praxis* 59(24):876-880, 1970.

6748 CYSTIC FIBROSIS OF THE PANCREAS. *(E.)* Mangiwa, J. (Roy. Alexandria Hosp. Child., Sydney, Australia). *Paediat Indonesia* 10(1):31-42, 1970.

- Diagproc (6519)(6523)(6535)(6548)(6561)(6562)
- D:Stomduo (6640)(6644)
- D:Livbil:Gallb (6926)
- D:Gen:Parasit (7007)

PANCREAS

Pancreatitis

19 VASCULAR AND DUCTAL PATTERNS OF PANCREAS
BY MICRORADIOGRAPHY AND THEIR RELATION
LESIONS OF PANCREATITIS. *(E.)* Hayasaka, N.
hoku U. Sch. Med., Sendai, Japan) and N. Sasano.
oku J Exp Med 100(4):327-347, 1970.

lysis is made of histological findings in the
cular and ductal systems in pancreatic lesions
radiography performed on blood vessels and ducts
human pancreases taken at autopsy. The pancreas
seen to receive its blood supply from 8 tributar-
of the common hepatic, splenic and superior
enteric arteries. Blood to the body and tail
supplied from splenic artery tributaries while
head received its supply from pancreaticoduodenal
ery branches. The main pancreatic duct in the
d was located along the center of the pancreas;
ondary ducts through intralobular tissue were
nly distributed in radial form. In biliary tract
ease, diffuse lesions and necrosis were commonly
ed whereas fatty necrosis was abundant with
atic disease. In 8 cases of renal pathology,
lular infiltration, acinar dilation and fatty
lacement was found in high incidence. Edema
m all lesions was slightly more common in head
body, cellular infiltration appeared with lower
quency in the tail, whereas no regional differences in fat necrosis were evidenced. Fibrosis appeared in highest frequency in the head and body. Ductal and vascular factors probably interact in the etiology of pancreatitis.

6750 PANCREATIC CALCIFICATION IN CEYLON WITH SPECIAL REFERENCE TO ITS ETIOLOGY. *(E.)* Rajasuriya, K. (Gen. Hosp., Colombo, Ceylon), P. N. Thenabadu and D. R. Munasinghe. *Ceylon Med J* 15(1):11-24, 1970.

6751 ACUTE PANCREATITIS DURING DELIVERY. *(Ger.)* Schneider, H. E. (St. Gynec. Clin., Braunschweig, Germany). *Z Geburtsh Gynaek* 172(2):176-179, 1970.

6752 INDICATIONS AND PERFORMANCE OF SPLANCHNICECTOMY IN THE TREATMENT OF CHRONIC PANCREATITIS. *(Fr.)* Vossschulte, K. (Surg. U. Clin., Giessen, Germany) and E. Wagner. *Lyon Chir* 66(2):112-116, 1970.

6753 VASCULAR FACTORS IN ACUTE EXPERIMENTAL PANCREATITIS. *(Fr.)* Papp, M. (Med. U. Budapest, Hungary), G. Ungvary and P. Nemeth. *Lyon Chir* 66(2):108-112, 1970.

6754 SURVEY OF 125 CASE HISTORIES CLASSED AS ACUTE PANCREATITIS. *(Fr.)* Rudler, J. C. (Surg. U. Clin. Geneva, Switzerland) and R. Giuli. *Lyon Med* 65(5):686-701, 1969.

6755 SCINTILLOGRAPHY IN PANCREATITIS: II. DISTRIBUTION AND FIXATION OF SELENOMETHIONINE Se^{75}. *(It.)* Troncone, L. (Inst. Radiol. Nucl. Med., Sacred Heart Catholic U., Italy), G. De Rossi and N. Cellini. *Policlinico* 77(1):1-23, 1970.

6756 A CLINICAL STUDY OF THE DEVELOPMENT OF ACUTE PANCREATITIS: 121 OBSERVATIONS FROM 1957-1969. *(Fr.)* Ryncki, P. V. (Canton Hosp., Lausanne, Switzerland) and J. Nyoth. *Praxis* 59(22):819-825, 1970.

6757 CHRONIC PANCREATITIS: INDICATIONS FOR OPERATION AND OBSERVATIONS ON THE COURSE OF CHRONIC-RECURRENT PANCREATITIS. *(Ger.)* Ammann, R. (Med. U. Polyclin. Zurich, Switzerland). *Deutsch Med Wschr* 94(1):1-7, 1970.

6758 CURRENT STATUS OF SURGICAL TREATMENT OF
CHRONIC PANCREATITIS. *(Fr.)* Rynicki, P
V. (Canton Hosp., Lausanne, Switzerland). *Praxis*
59(23):840-846, 1970.

6759 A CASE OF CHRONIC PANCREATITIS IN A CHI
(E.) Wijesundera, C. De S. (Ceylon),
W. Athukorala and W. K. M. P. L. Wijesekera. *Cey*
Med J 15(1):54-56, 1970.

6760 DIAGNOSIS AND MANAGEMENT OF CHRONIC PA
CREATITIS. *(E.)* Sun, D. C. H. (VA Hos
Phoenix, Ariz.). *Arizona Med* 27(4):83-87, 1970.

- Diagproc (6523)(6567)
- D:Pancreas (6746)
- D:Livbil:Gallb (6919)
- D:Gen (6940)(6957)

LIVER AND BILIARY TRACT

6761 GLUCOSE-6-PHOSPHATASE AND ALDOLASE IN RAT LIVER TUMORS INDUCED BY DIETHYLNITROSAMINE. *(Ger.)* Hadjiolov, D. (Oncol. Res. Inst., Sofia, Bulgaria) and A. Dikow. *Z Krebsforsch* 74(1):48-54, 1970.

In diethylnitrosamine-induced liver carcinomas in male albino rats, glucose-6-phosphatase activities were half that of normal liver tissue levels (6.6 mg P/hr at 37°C vs 13.2 mg P/hr). Tumor cells which did not undergo necrobiotic processes revealed high glucose-6-phosphatase activity levels histochemically while no enzyme activity was found in necrobiogically degenerated cells, which explains the lower levels found in tumor homogenates. Aldolase activity on fructose-1,6-diphosphate and fructose-1-monophosphate showed a complete preservation of enzyme activity in tumor cells [0.85 μmole FDP/mg protein/min at 37°C vs 0.81 and 0.54 μmole FMP/mg protein/min at 37°C vs 0.61]. The ratio between the activities on the two substrates varied in each tumor and was comparable to that of normal liver tissue [FDP/FMP 1.8 to 3.6 vs 1.3]. Three cathodic fractions were found in the isoenzyme pattern of aldolase with fructose-1,6-diphosphate as its substrate, while only two fractions were found for normal liver tissue. The anodic part of the isoenzymogram
revealed 4 fractions which were much more inten
than in normal tissue. No differences were fou
in isoenzymograms of normal and tumor tissue us
fructose-1-monophosphate as a substrate.

6762 SERUM LIPOPROTEINS OF RATS BEARING TR
PLANTED MORRIS HEPATOMA 7777. *(E.)* N
K. A. (Burnsides Res. Lab., U. Illinois, Urbana
H. P. Morris. *Int J Cancer* 5(3):410-414, 1970.

Serum lipoprotein patterns of Buffalo-strain ra
bearing a transplanted Morris hepatoma 7777 wer
determined in the 2nd, 4th, and 5th weeks after
transplantation. The presence of a slow-moving
density lipoprotein component was seen, which w
similar to that observed previously in Holtzman
given 0.03% N-2-fluorenylacetamide (a carcinoge
agent). Ultracentrifugation, chemical analysis
disc electrophoresis confirmed the increase in
lipoproteins, especially the high density lipop
HDL_2, (control 103; treatment 267 mg/100 ml se
in these tumor bearing rats. The serum total
cholesterol and phospholipid were considerably
increased at 4 weeks after transplantation (co

, 73, 78 mg/100 ml serum; treatment 360, 141, 114 100 ml serum, resp.) while the total serum pro- ns were only slightly elevated (control 5568; atment 6240 mg/100 ml serum) in rats with tumors compared to control rats. A new α_1-globulin com- ent was observed in the serum protein patterns the tumor bearing rats.

63 EFFECTS OF HEPATIC ISCHEMIA ON COAGULATION IN PRIMATES. APPLICATION TO LIVER NSPLANTATION. *(E.)*

Dinbar, A. (U. California Angeles, Sch. Med.), D. M. Rangel and E. W. kalsrud. *Surgery* 68(1):269-276, 1970.

atologic studies were made on vena caval blood ples obtained from 5 stump-tail monkeys in which hepatic artery and portal vein were occluded one k after side-to-side portacaval shunting was per- med, in order to determine the effect of hepatic hemia on coagulation. Values obtained after portacal shunting were used as controls and compared to ues obtained following complete hepatic ischemia. lobulin lysis times decreased approximately 33% oth groups, and returned to normal (3 hr follow- hepatic ischemia, 2.3 hr following portacaval ting) within 2 hr, and increased 2-3 times above al after 4 hr followed by a gradual return to al. Thrombin times increased rapidly to aproxi- ly twice the normal value (32 sec for hepatic hemia, 36 sec for portacaval shunting) immedi- ly after both operative procedures, and then de- ed gradually, remaining high however, throughout entire experiment. The platelet counts did not significant changes after portacaval anasto- s, whereas in hepatic ischemia there was an diate decline upon revascularization which con- ed progressively for 4 hr to 63% of the initial es. Acid phosphatase and serum glutamic pyruvic saminase did not increase during the first hour owing the operative procedures, but thereafter blood levels of both of these enzymes increased ificantly in portacaval shunting procedures. scularization of the ischemic livers demonstrated mprovement in the euglobulin lysis times as did thrombin times. There was a 10% drop in the elet count but there were no changes in cellular mes following revascularization. It was sug- ed that, although fibrinolytic activity was in- d by both operative procedures, the consumption ulopathy, presumably due to intravascular clot- , was intensified by the revascularization of ischemic liver, possibly because of clotting in the liver itself.

7 DIMINISHED MICELLAR PHASE LIPID IN PATIENTS WITH CHRONIC NONALCOHOLIC LIVER DISEASE AND TORRHEA. *(E.)*

Badley, B. W. D. (Roy. Free Hosp., on, England), G. M. Murphy, I. A. D. Bouchier S. Sherlock. *Gastroenterology* 58(6):781-789, 9.

mechanism of steatorrhea (a common feature of nic liver disease) was studied in 15 nonalcoholic ents (3 normal controls, 12 with chronic liver ase, 9 of whom had steatorrhea) to determine if disorder was associated with impairment of micellar solubilization of dietary fat. Following analysis of four 1/2 hr samples from most subjects, ranges, mean values and standard deviations of total lipid content were as follows: normal controls, 4.7 ± 4.3 mg/ml; patient controls, 4.9 ± 2.8 mg/ml; steatorrhea group, 7.9 ± 7.1 mg/ml. The fatty acid to total lipid ratio was the same in steatorrhea and control groups; normal controls, 49.5 ± 18.4%; patient controls, 47.6 ± 23.8%; steatorrhea group, 45.7 ± 20.9%. The steatorrhea group incorporated significantly less total lipid into micellar phase (14.7 ± 12.9%) than controls (normal controls, 55.2 ± 19.6% and patient controls, 62.4 ± 27.3%). Total bile salt concentrations ranged from 3.3 to 30 mM in normal controls and from 4.1 to 16.5 mM in patient controls. In contrast, most values in steatorrhea group were < 4 mM, significantly lower than both controls. Lowest values of pigment concentration were obtained in patients with steatorrhea; patients had histological and biochemical evidence of intrahepatic biliary obstruction. Results indicate that in patients with chronic liver disease steatorrhea is associated with subnormal intraluminal concentrations of conjugated bile salts and impaired micellar lipid concentration. It is suggested that steatorrhea in nonalcoholic patients is most likely due to inability of subnormal concentrations of bile salts to fulfill their normal role in fat absorption.

6765 ULTRASTRUCTURAL CYTOCHEMISTRY OF NUCLEAR PORES IN NOVIKOFF HEPATOMA CELLS. *(E.)*

Koshiba, K. (Baylor Coll. Med., Houston, Tex.), K. Smetana and H. Busch. *Exp Cell Res* 60(2):199-209, 1970.

The ultrastructure of the Novikoff hepatoma ascites cells from transplants grown in male rats was studied, after digestion with protease as well as nucleases to provide more insight into the cytochemistry of the fine filaments present within the nuclear pores. The Novikoff hepatoma cell demonstrated great variability in sensitivity to proteases (pepsin, subtilisin, and pronase) as well as nuclease (ribo- and deoxyribo-) and some cells were resistant to these enzymes even after relatively prolonged digestion (90 min). The fine filaments (12 to 25Å wide) present within the nuclear pores of control specimens were partially removed in 45% of the cells and completely removed in 10% of the cells following subtilisin digestion for 90 min. In contrast, the filaments were resistant to the treatment with ribonuclease on deoxyribonuclease and seemed to represent protein structures. In cells that were sensitive to ribonuclease, although the fine filaments remained intact, the ribosomes were digested.

6766 SERUM IMMUNOSUPPRESSIVE ACTIVITY DUE TO AZOTHIOPRINE AND ITS RELATION TO HEPATIC FUNCTION AFTER LIVER TRANSPLANTATION. *(E.)*

Mitchell, C. G. (King's Coll. Hosp. Med. Sch., London, England), A. L. W. F. Eddleston, M. G. M. Smith and R. Williams. *Lancet* 1(7658):1196-1199, 1970.

Serum immunosuppressive activity due to azathioprine was measured in 5 patients after liver transplantation, using a technique based on the inhibition of spontaneous rosette formation *in vitro*. Normal titre of immunosuppressive activity was defined as the lowest dilution of serum which prevented more than 25% of the rosette formation. Levels similar to those in controls were found when the plasma-bilirubin was normal, whereas in 3 patients with various degrees of cholestasis, levels were moderately reduced (1/64, 1/64, and 1/128). Serial measurements in one, showed a close correlation in time between the fall in serum immunosuppressive activity and the development of jaundice. In another patient with severe hepatocellular damage, there was no rise in serum immunosuppressive activity after oral azathioprine. The above findings should be considered when treating liver transplant rejection and controlling autoimmune liver disease with azathioprine.

6767 BIOCHEMICAL INVESTIGATIONS IN TWO PATIENTS AFTER HOMOTRANSPLANTATION OF THE LIVER.

(Ger.) Breuer, J. (Surg. U. Clin. Polyclin., Bonn, Germany), T. S. Lie and H. Breuer. *Z Klin Chem* 8(3):249-253, 1970.

Liver transplant was performed in two male patients (30 and 50 years old) with primary malignant neoplasms. Liver function was resumed immediately following transplant in both patients. The first rejection crisis in the 30 year old patient revealed itself through a high increase in serum transaminases, lactate and glutamate dehydrogenases as well as through a slow decrease in cholinesterase activity. Bile duct obstruction induced an increase in alkaline phosphatase activity which decreased after the removal of obstruction. Total serum bilirubin levels became normal between the 40th and 80th day after transplant. Enzyme activity levels assumed a constant pattern, except for alkaline phosphatase (which was still high) and the patient was released in general good condition. An increase of total bilirubin level, transaminase and alkaline phosphatase activities occurred later as the increasing decay of liver function was manifested by a steady decrease of cholinesterase activity and a striking increase of the other enzyme activities. Total disruption of liver function through parenchymal deficiency occurred with a decrease of transaminase activities, a lowering of alkaline phosphatase to "normal" values as well as an increase in total bilirubin and of mitochondrial glutamate dehydrogenase activity. These changes were accompanied by comatous status and led to death 206 days after the transplant. The 50 year old patient died on the 6th day after transplant. A histological examination of the transplanted organ revealed a beginning of rejection with no signs of parenchymal damage.

6768 INFLUENCE OF ETHANOL AND MICROSOMAL DRUGS ON HEPATIC HEMODYNAMICS. *(E.)*

Leevy, C. M. (New Jersey Coll. Med. Dent., Newark, N.J.), W. tenHove, A. Opper and S. Popovic. *Ann NY Acad Sci* 170(1):315-331, 1970.

The influence of ethanol, oxandralone and phenobarbitol on hepatic hemodynamics and liver microsomal structure and function was studied in hospitalized patients with diagnoses of alcoholic liver disease, or viral hepatitis. Six alcoholics with normal liver and 7 with inactive cirrhosis received 0.5 to 1.5 g/k of ethanol to determine the acute effect of alcohol on hemodynamics. Oxandrolone (120 mg/day) was given for 12 days to 12 patients with normal liver, 18 with fatty liver, 11 with steatonecrosis and 20 with cirrhosis. Phenobarbital (30 mg q.i.d.) was given for 12 days to 5 patients with normal liver, to 15 patients with fatty metamorphosis and to 7 patients with cirrhosis. There was no significant difference between transhepatic pressure, hepatic blood flow and oxygen consumption in ethanol-treated patients with normal livers other than the incidence of subcellular changes of swollen mitochondria and hyperplastic endoplasmic reticulum. In patients with severe fatty liver and without mesenchymal-sinusoidal cell proliferation there was a significant reduction of transhepatic pressure, an increase in blood flow and a decrease in oxygen consumption following mobilization of fat. In these patients the incidence of esophageal varix hemorrhage was associated with local mucosal erosion. Oxandrolone accelerated repair of alcoholic liver damage and improved hepatic circulation in alcoholics with steatonecrosis and induced a reduction in transhepati pressure, a 10% increase in hepatic venous O_2 content a 30% increase in hepatic blood flow and a 15% reduction in oxygen extraction. In patients with inact cirrhosis, oxandrolone therapy induced an increase in transhepatic pressure and resulted in a 20% reductio of hepatic blood flow, a 15% reduction in hepatic ven O_2 content and a 20% increase in hepatic vascular resistance. Repeated therapy with oxandrolone in patie with inactive cirrhosis induced to pronounced hyperplasia of the endoplasmic reticulum, liver cell damag elevated intrasinusoidal pressure and increased porta hypertension. Phenobarbital had no significant effe on hemodynamic disturbances in livers of alcoholics steatonecrosis but phenobarbital produced a marked h plasia of the endoplasmic reticulum and may induce bleeding from esophageal varices due to increased po wedged pressure in patients with inactive cirrhosis.

6769 CARCINOGENICITY OF STERIGMATOCYSTIN. *(E.)*

Purchase, I. F. H. (South African Med. Res Council, Pretoria) and J. J. Van Der Watt. *Food Cosmet Toxic* 8(3):289-295, 1970.

Weanling rats divided into 8 groups (2 controls) of 5 males and 5 females each were given sterigmatocyst in the diet (three groups, .15, .3 or 1.5 mg each fo 6 months, resp., and .22, .45 or 220 mg each for the following 6 months) or by stomach tube (three groups 0.15, 0.3 or 1.5 mg/day 5 days/week for 52 weeks). Death occurred between the 5th and 18th week in 8 rats given 1.5 to 2.25 mg/day of sterigmatocystin, while 39 of the 50 treated rats surviving to the 42n week eventually developed hepatocellular carcinoma. Of these 31 had varying degrees of fibrosis. Eight tumors of other types were seen in various organs id acanthotic changes occurred in the stomachs of 5% of the treated rats. The lesions produced in ne livers of rats exposed to sterigmatocystin were imilar to those found in Bantu hepatoma and "toxic" epatitis, indicating that the high incidence of iver cancer in Africa may be related to the ingestion mycotoxins.

70 THE BINDING CAPACITY OF HUMAN ALBUMIN FOR BILIRUBIN AND ITS SIGNIFICANCE IN THE THOGENESIS OF KERNICTERUS. *(E.)* Bratlid, D. (Govt. sp., Oslo, Norway) and J. Fog. *Scand J Clin Lab vest* 25(3):257-261, 1970.

e binding relationships of human albumin with bilibin were studied by means of absorption spectrootometry and Sephadex gel filtration. The absorpon curves of bilirubin at pH 8.3 revealed a disacement toward shorter wavelengths (at 420 nm) at lirubin/albumin ratios exceeding 1. Absorption rves at pH 7.4 revealed no displacement toward orter wavelengths at 1/1 molar bilirubin/albumin tio. The absorbance differences at 470 nm at this lar ratio indicated the presence of a second molele of bilirubin bound to albumin. Use of Sephadex-25 filtration showed no changes in the bilirubin/ umin ratio at different pH levels and the prece of only one molecule of albumin bound to each lirubin molecule, although a second molecule of irubin appears to be partially retained on the umn suggesting that a dimerization may occur. relative ease of dissociation of the dimer may lain the development of kernicterus at a molear bilirubin/albumin ratio in the serum of above 1.

1 ELECTRON MICROSCOPIC STUDY OF THE LIVER IN SO-CALLED IDIOPATHIC JAUNDICE OF LATE GNANCY: OBSERVATIONS IS SIX CASES. *(E.)* Van lst, U. (Dept. Path., U. Nimegen, Netherlands) N. Bergstein. *Path Europ* 5(2):198-215, 1970.

electron microscopic study of liver biopsies was ducted in 6 women with so-called idiopathic jaune in late pregnancy. Five of 6 patients showed eralized severe pruritus and jaundice accompanied lassitude or malaise without fever during the last mester of pregnancy. Only one case of pruritus not accompanied by jaundice and hepatosplenoaly or gastrointestinal complaints were absent. almost all cases, levels of serum alkaline phostase, total and conjugated serum bilirubin, choterol and β-globulin fraction were elevated and re was a delayed sulfobromophtalein excretion. nt microscopy, in 3 patients, revealed cholestasis le plugs) in centrolobular canaliculi and small, al accumulations of bile pigment in some liver ls around bile canaliculi. With electron microoy, there were many dilated bile canaliculi, with s and/or distortion of their microvilli and which tained biliary material. Other observations luded a well developed smooth endoplasmic reticum, hypertrophy of Golgi complexes, intracytoplasmic mulation of biliary constituents, intramitodrial fibrillar inclusions, widening and condenion of ectoplasm, and in 3 cases, many microbodies. Findings in liver cells bear no specific character and no definite conclusions can be drawn as to pathogenesis of this type of jaundice.

6772 BREAST MILK JAUNDICE: EFFECT OF $3\alpha,20\beta$-PREGNANEDIOL ON BILIRUBIN CONJUGATION BY HUMAN LIVER. *(E.)* Adlard, B. P. F. (Dept. Chem. Path., U. Leeds, England) and G. H. Lathe. *Arch Dis Child* 45(240):186-189, 1970.

The effect of $3\alpha,20\beta$-pregnanediol, estriol, and dihydroepiandosterone on bilirubin conjugation was examined in human liver tissue slices and human solubilized glucuronyl transferase and in the livers of Wistar rats, New Zealand rabbits, guinea pigs and mice. Bilirubin conjugation by liver slices was determined by the amount of direct-reacting bilirubin in incubation medium by a modification of the Lathe and Walker method. Neither $3\alpha,20\beta$-pregnanediol nor dihydroepiandosterone inhibited conjugation by human liver slices or by solubilized human liver microsomes. Estriol inhibited the normal rate of bilirubin conjugation in human liver slices from 21.4 to 12.2 μg/ g liver/hr. The responses of liver slices in the other species to the steroids were comparable to those in human liver slices, suggesting that $3\alpha,20\beta$-pregnanediol is not the inhibitor causing breast milk jaundice.

6773 CLINICAL AND EXPERIMENTAL EVALUATION OF URINARY HISTIDINE DERIVATIVES AS AN INDEX OF FOLIC ACID METABOLISM: III. CLINICAL OBSERVATION IN LIVER DISEASE. *(E.)* Ishihara, S. (Fac. Med., Kyoto U., Japan). *J Vitamin* 16(1):1-9, 1970.

Among 53 patients selected for this study of folic acid metabolism, 14 suffered from acute hepatitis, 12 from chronic hepatitis, 20 with liver cirrhosis and 7 with liver cancer. After a loading with 15 g of L-histidine, excessive urinary excretion of formiminoglutamic acid was observed in 58.5% and of urocanic acid in 52%, and the two combined derivatives in 64%, indicating a widespread deficiency in folic acid metabolism in such patients. To analyze the mechanism of excessive excretion of histidine derivatives, therapeutic trials with minimal daily doses of folic acid (0.1 mg), tetrahydrofolic acid (THF) (0.1 mg), and doses of vitamin B_{12} coenzyme (5,6-dimethylbenzimidazolylcobamide) and vitamin B_{12} were carried out in 5 randomly selected patients with chronic hepatitis and 2 patients with liver cirrhosis. A marked decline of the derivatives to the normal range was found in 4 of these 7 on the fifth day of the course with folic acid and one of 2 patients refractory to folic acid responded to THF. One case in which both folic acid and THF were ineffective responded to both vitamin B_{12} coenzyme and vitamin B_{12}. Inadequate dietary intake of folate seems to be of greatest importance in the development of folic acid deficiency in liver disease.

6774 CELLULAR AUTOPHAGY: GLYCOGEN SEGREGATION IN EARLY STAGES OF A PARTIAL LIVER ATROPHY. *(Ger.)* Pfeifer, U. (Path. Inst. U. Wurzburg, Germany). *Virchow Arch Zellpath* 5(3):242-253, 1970.

Partial liver atrophy was achieved by separation of the left part of the median lobe (10 to 15% of total liver weight) from the portal blood flow by ligation of the portal vein branch for the study of cellular autophagy. Adult male rats were operated on in the morning at the time of maximal liver glycogen content. A large amount of autophagic vacuoles containing cytoplasmic organelles and/or glycogen was found in the acinoperipheral liver cells 2 to 5 hr after surgery. Segregation of glycogen (a manifestation of enhanced cellular autophagy) depended on the high cell glycogen content at the moment of injury. Glycogen segregation was also observed within the tubular or vesicular formations. Accumulation of glycogen within vacuoles may be due to either an enhanced cellular autophagy or to an enzyme deficiency, blocking the hydrolytic breakdown of the physiologically produced glycogen (as in glycogenosis type II).

6775 LIVER AND LUNG TUMORS AFTER 3,3'-DICHLORO-4-4'-DIAMINODIPHENYLMETHANE IN RATS. *(Ger.)*

Grundmann, E. (Inst. Exp. Path., Bayer Co., Wuppertal, Germany) and D. Steinhoff. *Z Krebsforsch* 74(1):28-39, 1970.

Liver and lung tumors were induced in 25 male and 25 female 100-day-old rats by maintaining the animals on a low protein diet and the oral administration of 27 g/kg of 3,3'-dichloro-4,4'-diaminodiphenylmethane. The average survival time of the treated animals was about 550 test days while control animals survived about 730 test days. Among the test rats, 22 males and 18 females had multilocular hepatoma which were mainly solid tumors with an organoid structure, 2 of which had produced massive pulmonary metastases and 1 a solitary metastasis in the brain. Hepatocellular and cholangiolar adenocarcinomata also developed. Primary lung tumors present in 13 animals were partly of an alveolar cell type, partly of a squamous cell type, mainly carcinomata and in 10 cases pulmonary tumors occurred with hepatomata. Compared to 4,4'-diaminodiphenylmethane, the compound that is dichlorinated in the 3,3'-position is less toxic but an essentially more potent carcinogen.

6776 EPITHELIOID CELL GRANULOMAS IN LIVER BIOPSIES. *(E.)*

Iversen, K. (Commun. Hosp., Copenhagen, Denmark), P. Christoffersen and H. Poulsen. *Scand J Gastroent* 5(supp. 7):61-67, 1970.

Epithelioid cell granulomas and lipogranulomas were found in 21 patients with various diagnoses following investigation of consecutive material of 2813 liver biopsies. In biopsy material, 16 patients showed epithelioid cell granulomas, 3 had both epithelioid cell granulomas and lipogranulomas and 2 showed only lipogranulomas. A combination of epithelioid cell granulomas and normal parenchyma usually was indicative of sarcoidosis or tuberculosis. Of the 5 patients with histologically verified sarcoidosis, 1 was cured, 2 died, and 2 progressed. The presence of epithelioid cell granulomas of the liver during acute hepatitis or cirrhosis is uncommon; no clues regarding prognosis are indicated. The best histological differentiation between epithelioid cell granulomas and lipogranulomas is the presence of fat vacuoles in lipogranulomas.

6777 STUDIES ON MYOINOSITOL: V. EFFECT OF MYOINOSITOL ON THE PREVENTION OF FATTY LIVER INDUCE BY OROTIC ACID. *(E.)*

Kotaki, A. (Fac. Med., U. Nagoya Japan), M. Okumura, S. H. Hasan and K. Yagi. *J Vitami* 16(1):75-79, 1970.

To determine whether or not any synergistic action between vitamins, myoinositol and choline exists in improving or preventing fatty liver induced by orotic acid containing diet for 7 days, 5 groups of 3 male rats (about 100 g body weight) each were used. Group A received a normal diet and the remaining groups were given rations containing 1.5% orotic acid; group B being fatty liver control, group C received daily s.c. injections of 30 mg myoinositol, group D choline (30 mg), and group E myoinositol (30 mg) plus choline (30 mg). Induction of fatty liver was accompanied by an increase in the lipid thiobarbituric acid (TBA) value and by a decrease in the lipid phosphorus concentration. Fat accumulation was prevented 20 to 50% by the injection of myoinositol or 90% by choline injections. However, the effects of choline and myoinositol were not synergistic, but the effect due to the injection of both was rather close to the effect of myoinositol alone. The increase in lipid TBA value and the decrease in lipid phosphorus concentration were also found to be prevented by injecting these lipotropic factors.

6778 CHRONIC LIVER DISEASE AND PRIMARY LIVER-CELL CANCER WITH HEPATITIS-ASSOCIATED (AUSTRALIA) ANTIGEN IN SERUM. *(E.)*

Sherlock, S. (Royal Free Hosp., London, England), S. P. Niazi, R. A. Fox and P. J. Scheuer. *Lancet* 1(7659):1243-1247, 1970.

Seventeen male patients with chronic liver disease of at least 6 months duration and a positive serological test for hepatitis-associated (H.A.) Australia antigen are described. Seven patients had histories of acute viral hepatitis which had been treated with corticosteroids, while the remaining 10 patients had no past history of acute liver disease. Of the latter group, 4 presented symptoms of lethargy and malaise or abdominal pain. One patient showed only evidence of recent viral hepatitis and 4 showed persistent hepatitis or inactive post-necrotic scarring. These 5 patients are symptom free and prognosis is considered good. Six patients showed histological features of chronic aggressive hepatitis and in 4, there was also cirrhosis. Serum bilirubin, aspartate transaminase, and globulin levels tended to be lower and smooth-muscle antibody was absent from the serum or present only in low titre. Hepatic histological differences were not absolute although 3 of the H.A. group showed evidence of recent acute hepatitis. Five patients had primary liver cancer, and in 4, underlying cirrhosis was observed. Serum-α-fetoprotein was present in 2 of these 5 patients. Observations indicate that acute hepatitis, with positive H.A. antigen may be followed by chronic liver disease and cirrhosis and this can proceed to liver cell cancer.

779 PORTAL HYPERTENSION IN THE PRESENCE OF NORMAL LIVER MORPHOLOGY. *(E.)* Iber, F. L. Lemuel Shattuck Hosp., Boston, Mass.). *Ann NY Acad ci* 170(1):115-126, 1970.

hirty-eight case reports from Calcutta of portal ypertension occurring in the presence of normal iver morphology or in cirrhosis (classified as such y large surgical liver biopsies and splenic portalenagrams) were characterized mainly as noncirrhotic ortal fibrosis, hepatoportal sclerosis, schistosoiasis and malaria-related splenomegaly. In noncirhotic portal hypertension, the total hepatic blood low was approximately normal, indicating the kistence of initial presinusoidal lesions which dereased the total portal blood flow and which varied ı etiology, but included thrombophlebitis of the ortal vein, sinusoidal swelling and obstruction and ther causes. The diminished portal flow probably ed to an increased hepatic arterial inflow which as distributed unevenly through the sinusoids, relting (in time) in vasoconstriction of the outflow the sinusoids to assure a more uniform distribution the arterial blood.

'80 ARTERIALIZATION OF THE LIVER WITH PORTACAVAL SHUNT IN THE TREATMENT OF PORTAL 'PERTENSION DUE TO INTRAHEPATIC BLOCK. *(E.)* illard, J. N. (Hosp. Beaujon, Clichy, France), P. Benhamou and B. Rueff. *Surgery* 67(6):883-890, 70.

terialization techniques of the liver with a rtacaval shunt were compared in 10 patients for eatment of portal hypertension due to intrapatic shock. In the first group of 5 patients, prosthesis was inserted between aorta and portal in, whereas in the second group of 5 patients, astomosis was made between splenic artery and rtal vein. The prosthesis has been associated th excessive arterial flow which cannot be safereduced by stenosing of prosthesis. Intrahepatic olestasis may also occur with high arterial flow. ripping of the portal vein in the hepatoduodenal gament and stripping of the aorta may lead to verence of many lymphatic channels. Duodenal osion observed in one patient was similar to distive complications described after aortic prosesis. This technique has no action on hyperlenism. However, the anastomosis procedure may always be feasible, especially in obese patients. asms resulting from arterial stripping may lead arterial thrombosis. Arterialization of portal mk through splenic artery is the technique of ice. The value of arterialization of cirrhotic ver remains questionable.

31 STUDIES ON NUCLEAR 4.5 S RIBONUCLEIC ACID III OF NOVIKOFF HEPATOMA ASCITES LS. *(E.)* El-Khatib, S. M. (Baylor Coll. Med., ston, Texas), T. S. Ro-Choi, Y.C. Choi, and Busch. *J Biol Chem* 245(13):3416-3421, 1970.

ikoff hepatoma ascites cells transplanted into e albino rats 7 days prior to killing were colted from the peritoneal fluid and prepared for studies on nuclear 4.5 S RNA_{III}. After nuclear 4.5 S RNA was obtained in an electrophorectically homogeneous state by preparative electrophoresis on polyacrylamide gels, it was separated by chromatography on DEAE-Sephadex into 3 peaks, the last of which contained 4.5 S RNA_{III}, which is an extranucleolar species not found in the cytoplasm. This unique RNA species has an adenosine 3',5'-diphosphate residue as the 5'-terminal and 2'-O-methyl uridine as the 3'-terminal nucleoside. It has a very low T_m of 37.5°C and a molecular weight of approximately 28,000 based upon mobility in polyacrylamide gels and 5'-terminal analyses. Analysis of the alkali resistant dinucleotides showed that the 4.5 RNA_{III} contains 4 alkali-resistant dinucleotides, i.e., adenosine 2'-O-methyl-3'-phosphate, guanosine 2'-O-methyl-3'-phosphoryladenosine 3'-phosphate, and 2-guanosine-2'-O-methyl-3'-phosphorylguanosine-3'-phosphate residues. After hydrolysis with pancreatic RNase, analysis of oligonucleotide frequencies indicated that most of the molecule is cleaved into mono- and tetra-nucleotides, i.e., only 18% remaining in larger fragments. Compared with other 4-7 S nuclear RNAs, the isotope distribution in these oligonucleotides differs in that the percentage is lower in uridine and higher in adenine residues.

6782 MARKED INCREASE IN SERUM BILIRUBIN IN SICKLE CELL ANEMIA: A REPORT OF 6 PATIENTS. *(E.)* Hargrove, M. D., Jr. (Louisiana St. U., Sch. Med., Shreveport). *Amer J Dig Dis* 15(5):437-442, 1970

6783 ESTROGEN-INDUCED CHOLESTASIS DUE TO ENDOGENOUS AND EXOGENOUS HORMONES. *(E.)* Kreek, M. J. (Rockefeller U., New York, N.Y.) and M. H. Sleisenger. *Scand J Gastroent* 5(supp. 7): 123-131, 1970.

6784 MEDICAL COMPLICATIONS OF SHUNT SURGERY FOR PORTAL HYPERTENSION. *(E.)* Sherlock, S. (Roy. Free Hosp., London, England), K. Hourigan and P. George. *Ann NY Acad Sci* 170(1):392-405, 1970.

6785 SURGICAL TREATMENT OF COMPLICATIONS OF PORTAL HYPERTENSION. *(E.)* Britton, R. C. (Brooklyn-Cumberland Med. Ctr., N.Y.). *Ann NY Acad Sci* 170(1):358-366, 1970.

6786 A CASE OF GILBERT'S SYNDROME COMPLICATED BY DRUG HEPATITIS. *(Rus.)* Loginov, A. S. (All-Union Sci. Research Inst. Gastroenterology, Moscow, USSR), B. D. Damenov and I. S. Klemashev. *Klin Med* 48(6):134-138, 1970.

6787 THE EFFECT OF BIOMYCIN ON THE INDUCTION OF HEPATIC TUMORS IN MICE. *(Rus.)* Pyleva, Z. A. (Acad. Med. Sci. USSR, Moscow), and M. Ya. Vysheslavova. *Biull Eksp Biol Med* 35(6):75-77, 1970.

6788 HEPATIC CIRCULATORY CHANGES AFTER SHUNT SURGERY. *(E.)* Reynolds, T. B. (Dept. Med., U. Southern California, Los Angeles). *Ann NY Acad Sci* 170(1):379-391, 1970.

6789 PRIMARY CARCINOMA OF THE LIVER IN HIROSHIMA AND NAGASAKI, JAPAN. *(E.)* Schreiber, W. M. (Atomic Bomb Casualty Comm., Hiroshima, Japan), H. Kato and J. D. Robertson. *Cancer* 26(1):69-75, 1970.

6790 EFFECT OF "CELL MEMBRANE-ACTIVE" SUBSTANCES ON UPTAKE OF ANTICANCER CHEMO-THERAPEUTIC AGENTS BY TUMOR CELLS: WITH SPECIAL REFERENCE TO MITOMYCIN C UPTAKE BY EHRLICH ASCITES TUMOR CELLS *IN VITRO*. *(Jap.)* Ishikawa, M. (Sapporo Med. Coll., Japan). *Sapporo Med J* 35(4):251-264, 1969.

6791 CIRCULATORY CHANGES ASSOCIATED WITH MAJOR HEPATIC RESECTION. *(E.)* McDermott, W. V., Jr. (Harvard Med. Sch., Boston, Mass.). *Ann NY Acad Sci* 170(1):246-250, 1970.

6792 LIVER TRANSPLANTATION IN MAN. *(E.)* Penn, I. (U. Colorado Sch. Med., Denver), C. G. Halgrimson and T. E. Starzl. *Ann NY Acad Sci* 170(1): 251-258, 1970.

6793 SURGICAL TECHNIQUE IN SIX HEMIHEPATECTOMIES. *(E.)* Baden, A. (Bispebjerg Hosp., Copenhagen, Denmark) and A. Hosbro Ostergaard. *Scand J Gastroent* 5(supp. 7):169-174, 1970.

6794 HEPATIC ENZYME ACTIVITIES OF GLYCOLYSIS AND GLUCONEOGENESIS IN DIABETES OF MAN AND LABORATORY ANIMALS. *(E.)* Willms, B. (Med. U. Clin., Gottingen, Germany), P. Ben-Ami and H. D. Soling. *Horm Metab Res* 2(3):135-141, 1970.

6795 PARTIAL ORTHOTOPIC LIVER TRANSPLANTATION. *(E.)* Warner, O. G. (Boston City Hosp., Mass.) and L. H. Kurtz. *Med Ann D C* 39(6):303-305, 1970.

6796 PRIMARY CANCER OF LIVER. *(E.)* Cole, D. R. (St. Vincent's Hosp. Med. Ctr., New York, N.Y.) and D. Befeler. *New York J Med* 70(13):1789-1792, 1970.

6797 ICTERUS AS A CONSEQUENCE OF A CONGENITAL DEFECT IN THE EXCRETION OF BILIRUBIN. *(Sp.)* Goncalves, C. S. (Fac. Med. Federal U. Holy Spirit, Brazil), B. Zanandrea, R. Nacif and F. E. L. Pereira. *Hospital* 77(3):847-857, 1970.

6798 ANGIOGRAPHIC AND SCINTIGRAPHIC FINDINGS IN A BENIGN CYSTIC CHOLANGIOMA OF THE LIVER. *(Ger.)* Thiemann, K. J. (Johanniter Hosp., Rheinhausen, Germany). *Fortschr Roentgenstr* 112(6 831-832, 1970.

6799 NEW ASPECTS OF THE TREATMENT OF HEPATIC COMA. *(Ger.)* Ziegler, K. (Med. Clin. U. Rostock, Germany). *Z Ges Inn Med* 25(8):341-343,19

6800 PREVENTIVE EFFECTS OF ANTIDIABETIC BIGUANIDES ON THE DEVELOPMENT OF HEPATIC STEATOSIS COMBINED WITH A FAT DIET IN THE RABBIT. *(Fr.)* Marquie, G. (Fac. Sci. Toulouse, France) ar R. Agid. *C R Soc Biol* 163(12):2746-2748, 1969.

6801 STUDIES OF THE EFFECT OF BLUE LIGHT UPON BILIRUBIN METABOLISM IN SEVERE JAUNDICE OF THE NEONATE. *(Ger.)* Petermann, H. D. (Child. Clin. Martin Luther U., Halle-Wittenberg, Germany and D. Erge. *Kinderaertl Prax* 38(4):156-165, 197

6802 A CHANGE IN THE SINUSOID-TRABECULAR STR TURE OF THE LIVER WITH HEPATIC VENOUS OUTFLOW BLOCK. *(E.)* Leopold, J. G. (Welsh Natl. Sch. Med., Llandough), T. E. Parry and F. K. Stor *J Path* 100(2):87-98, 1970.

6803 α-KETOGLUTARATE WITH 1-(+)-ORNITHINE IN HEPATIC ENCEPHALOPATHIES. *(Fr.)* Molima R. (Paris, France), J. Paris and P. Merveille. *Presse Med* 78(30):1367-1368, 1970.

6804 INFLUENCE OF VASOACTIVE DRUGS ON PORTA CULATION. *(E.)* Schwartz, S. I. (U. Ro Sch. Med. Dent., N. Y.). *Ann NY Acad Sci* 170(1) 314, 1970.

6805 HEPATIC MICROCIRCULATORY CHANGES LEADI TO PORTAL HYPERTENSION. *(E.)* Rappapor A. M. (Dept. Physiol., U. Toronto, Ontario, Cana M. Knoblauch, R. G. Black and S. Ohira. *Ann NY Sci* 170(1):48-66, 1970.

6806 PRIMARY CARCINOMA OF THE LIVER IN ETHI A STUDY OF 38 CASES PROVED AT POST-MOR EXAMINATION. *(E.)* Pavlica, D. (Imp. Ethiopian Armed Force Hosp., Addis Ababa) and I. Samuel. *J Cancer* 24(1):22-29, 1970.

6807 SOLITARY CYSTS OF THE LIVER: TRANSTHOR HEPATOTOMY AND NEEDLE ASPIRATIONS IN TREATMENT OF GIANT NON-PARASITIC CYSTS. *(E.)* Ha J. L. (Bispebjerg Hosp., Copenhagen, Denmark). *Scand J Gastroent* 5(supp. 7): 165-168, 1970.

6808 ANEURYSMAL DILATION OF THE INTRAHEPATI BILIARY DUCTS IN CHILDREN. *(E.)* Benn J. (Hosp. Child. Dis., Paris, France), M. Forti Beaulieu and H. Nahum. *Ann Radiol* 13(3-4):321- 1970.

09 LIVER FAILURE FOLLOWING MYOCARDIAL INFARCTION. *(E.)* Schaefer, J. W. (Dept. Med., Kentucky, Lexington) and R. Shabetai. *Amer J stroent* 54(1):52-54, 1970.

10 CHRONIC FAMILIAL JAUNDICE IN PAPUA AND NEW GUINEA. *(E.)* Vaughan, J. P. (Dept. bl. Hlth., Madang, Papua-New Guinea). *Papua New inea Med J* 12(4):128-129, 1970.

11 WILSON'S DISEASE: ITS DIAGNOSIS AND MANAGEMENT. *(E.)* Walshe, J. M. (Dept. vest. Med., U. Cambridge, England). *Brit J Hosp l* 4(1):91-98, 1970.

2 LIGATION PROCEDURES ACCORDING TO VOSSCHULTE IN PORTAL HYPERTENSION OF CHILDREN. *(Ger.)* dert, J. G. (St. Hosp. Bremen, Germany). *Helvetia r Acta* 37(1-2):122-125, 1970.

3 A STUDY OF TWO TYPES OF FERRITIN FROM RAT HEPATOMAS. *(E.)* Richter, G. W. (U. Roches- Sch. Med. Dent., N.Y.) and J. C. K. Lee. *Cancer* 30(3):880-888, 1970.

4 AMINOPYRINE METABOLISM IN LIVER DISEASE. *(Ger.)* Stolterfoht, C. A. (Med. Acad. eck, Germany), E. Schmid and F. Weist. *Z troent* 8(3):140-146, 1970.

5 HUMAN LIVER TRANSPLANTATION. *(E.)* Johnson, M. G. (U. Bristol Dept. Surg., England). *stol Medico Chir J* 85(315):63-67, 1970.

6 THE CELL CYCLES OF THREE TRANSPLANTABLE MORRIS HEPATOMAS. *(E.)* Sasaki, T. (Temple Sch. Med., Philadelphia, Pa.), H. P. Morris and Baserga. *Cancer Res* 30(3):788-793, 1970.

7 ^{32}P DISTRIBUTION IN OLIGONUCLEOTIDES OF 28 S RIBOSOMAL RNA OF THE NOVIKOFF HEPA- AND NORMAL RAT LIVER. *(E.)* Wikman, J. (Baylor L. Med., Houston, Texas), E. Howard and H. Busch. *er Res* 30(3):773-775, 1970.

RESURGENCE OF TWO FETAL-TYPE OF ALDOLASES (A AND C) IN SOME FAST-GROWING HEPATOMAS. Schapira, F. (Inst. Path. Molec., Paris, France), latzfeld and M. D. Reuber. *Biochem Biophys Res* 40(2):321-327, 1970.

HEMANGIOENDOTHELIOMA OF THE LIVER ASSOCIATED WITH MICROANGIOPATHIC HEMOLYTIC IA: REPORT OF FOUR CASES. *(E.)* Alpert, L. I. nt Sinai Sch. Med., New York, N.Y.) and B. sch. *Amer J Med* 48(5):624-628, 1970.

WILSON'S DISEASE: IMPORTANCE OF THE CLINICAL LABORATORY IN DIAGNOSIS AND TREATMENT. Gowdy, J. (Billings, Montana). *Rocky Mountain J* 67(5):41-45, 1970.

6821 PYRUVATE KINASE OF HEPATOMA MORRIS 5123: INSENSITIVITY TO DIETARY CHANGES. *(E.)* Campadelli-Fiume, G. (Inst. Gen. Path., U. Bologna, Italy), E. D. Corte and F. Stirpe. *Biochem J* 118(1):195-196, 1970.

6822 A CASE OF POST-OPERATIVE ANEURYSM OF THE HEPATIC ARTERY TREATED BY LIGATION. *(Fr.)* Mansouri, H. (Hosp. Mustapha, Algeria), D. Rahmouni, C. Vedrenne, R. Mansouri and R. Benabadji. *Lyon Med* 65(5):674-681, 1969.

6823 HISTOLOGICAL AND HISTOCHEMICAL STUDIES ON THE ORTHOTOPIC TRANSPLANTED CANINE LIVER. *(Jap.)* Katsui, T. (Nara Med. U., Japan). *J Nara Med Ass* 21(1):43-66, 1970.

6824 ANEURYSM OF THE HEPATIC ARTERY. *(Ger.)* Schildberg, F. W. (Path. Inst. U. Cologne, Germany) and O. Giersberg. *Aertzl Prax Bild* 14(2):35-38, 1970.

6825 CARCINOMA AT THE JUNCTION OF THE HEPATIC BILE DUCTS ("HILAR CARCINOMA"). *(Fr.)* Bertrand, L. (Hosp. St. Eloi, Montpelier, France), J. B. Prioton and A. J. Ciurana. *Presse Med* 78(27):1213-1218, 1970.

6826 AUXILIARY CANINE LIVER HOMOTRANSPLANTATION: CHANGES OF LIVER FUNCTION ESPECIALLY OF THE BILE COMPONENT IN THE TRANSPLANTED AND THE HOST LIVER. *(Jap.)* Takita, T. (Nara Med. U., Japan). *J Nara Med Ass* 21(1):73-86, 1970.

6827 M-TOLUYLENEDIAMINE CARCINOGENESIS IN RAT LIVER. *(Jap.)* Hiasa, Y. (Nara Med. U., Japan). *J Nara Med Ass* 21(1):1-19, 1970.

6828 CLINICAL SYMPTOMS AND HISTOPATHOLOGY IN PRIMARY HEPATIC CARCINOMA. *(Jap.)* Okita, H. (Kure Natl. Hosp., Hiroshima, Japan), T. Masuda, I. Omura, O. Kurimura, M. Amaki, K. Ishikawa, K. Ichihara, M. Nishiuchi, H. Komo and K. Kirimoto. *Iryo* 24(1):33-40, 1970.

6829 PATHOLOGICAL STUDY OF LIVER TISSUE HEPATOMAS. *(Jap.)* Kaneko, M. (1st Tokyo Natl. Hosp., Japan) and I. Sano. *Iryo* 24(1):41-47, 1970.

- P:Morph (6286)(6287)(6292)(6293)(6297)(6302)(6316)(6321)(6326)
- P:Secr:Hepatobil (6459)(6477)
- P:Gen (6502)
- Diagproc (6519)(6522)(6526)(6531)(6540)(6544)(6563)(6565)(6566)(6578)
- D:Stomduo (6646)
- D:Stomduo:Peptulc (6657)
- D:S.Intest (6671)
- D:Livbil:A.Nonv.Hep (6832)(6852)
- D:Livbil:A.V.Hep (6859)
- D:Gen (6929)(6933)(6934)(6964)(6980)(6988)(6999)(7001)
- D:Gen:Parasit (7004)(7005)(7011)(7012)(7015)(7016)

Acute Nonviral Hepatitis and Hepatic Injury

6830 HISTOCHEMICAL AND FUNCTIONAL EFFECTS OF PARACHLOROPHENOXYISOBUTYRIC ACID ON HUMAN LIVER. *(E.)*

De Magistris, L. (Inst. Geront., U. Florence, Italy), L. Baroni, L. Calabrese and M. Serio. *Pharmcol Res Commun* 1(4):347-352, 1969.

The histochemical and functional effects of parachlorophenoxyisobutyric acid were investigated on liver biopsy specimens obtained from 16 patients (8 men, 8 women, 51 to 79-yr-old) with cerebral atherosclerosis. After 3 to 4 weeks of treatment with the drug (1440 mg/day in 2 doses) no changes in liver glycogen, RNA or DNA content were observed, but fatty liver developed in 3 patients and inflammatory infiltration of the liver (lymphocytes, epitheloid cells, plasma cells and rare polymorphonuclear leukocytes) were seen in 2 patients. Patients suffering from fatty degeneration of the liver prior to treatment with para-chlorophenoxyisobutyric acid reported a higher incidence of side effects than the other patients, but no changes in liver function tests were observed in any of the patients. The varying degrees of fatty liver caused by para-chlorophenoxyisobutyric acid is attributed to a reduced incorporation of liver triglycerides into plasma lipoproteins.

6831 IRREVERSIBLE FIXATION OF INCREASED LEVEL OF MUSCLE TYPE ALDOLASE ACTIVITY APPEARING IN RAT LIVER IN THE EARLY STAGE OF HEPATOCARCINOGENESIS. *(E.)*

Endo, H. (Fac. Med. Kyushu U., Fukuoka, Japan), M. Eguchi and S. Yanagi. *Cancer Res* 30(3):743-752, 1970.

Livers from male rats placed on a diet containing 0.06% 3'-methyl-4-dimethylaminoazobenzene for 60 days were used to study muscle type aldolase activity with the use of antimuscle aldolase sera during a 60-day interval following termination of the diet. Histologic examination showed severe damage in the livers of the rats fed azo dye for 60 days. Some damage was still observable after 14 days following termination of the diet. Considerable recovery was seen after 30 days and there was no evidence of liver damage after 60 days. The mitotic rate was elevated following cessation of the azo dye administration from a normal of 0 to 3/4000 parenchymal cells in liver to 12 to 20/4000 cells; after 60 days it had returned to normal. Muscle type aldolase was elevated when compared to normals 60 days after termination of the diet although no appreciable differences were observed in total aldolase activity, soluble protein and DNA content. This change in muscle type aldolase was evident after only 15 days of azo dye administration. This elevation was maintained during a 300-day observation period. N,N'-2,7-fluorenylenebisacetamide produced a similar alteration in muscle type aldolase whereas 2-methyl-4-dimethylaminoazobenzene, a noncarcinogen, did not produce such a change.

6832 VITAMIN E AND HEPATOTOXIC AGENTS: III. VITAMIN E, SYNTHETIC ANTIOXIDANTS AND CARBON TETRACHLORIDE TOXICITY IN THE RAT. *(E.)*

Cawthorne, M. A. (Beecham Res. Lab., Tadworth, Surrey, England), J. Bunyan, M. V. Sennitt and J. Green. *Brit J Nutr* 24(2):357-384, 1970.

The protective effect of single and multiple p.o. and i.p. doses (100-1500 mg/kg of N,N'-diphenyl-P-phenylenediamine, ethoxyquin, vitamin E and butylated hydroxytoluene on the p.o. acute and subacute toxicity (liver necrosis and hepatic fat accumulation) of CCL_4 was studied in young adult male and female rats. Multiple p.o. doses of vitamin E given prior to CCL_4 increased survival in male but not in female rats while single p.o. doses given 24-72 hr previously also increased survival in males but decreased survival in females. Single i.p. doses of vitamin E did not affect survival in female rats. Vitamin E did not significantly affect CCL_4-induced accumulation of hepatic triglycerides; however, p.o. doses of 2000 mg/kg administered prior to CCL_4 significantly increased hepatic triglyceride accumulation and morbidity. Multiple and single p.o. doses of N,N'-diphenyl-diphenylenediamine given 72 hr prior to CCL_4 increased survival in male and female rats while single p.o. doses given 6-48 hr prior to CCL_4 had no effect on survival. N,N'-diphenyl-diphenylenediamine given p.o. 6-72 hr or i.p. 1-48 hr before CCL_4 induced accumulation of hepatic triglycerides. Ethoxyquin (single or multiple, p.o. or i.p. doses) was the most effective of the agents tested in reducing acute and subacute CCl_4 toxicity if given at least 48-72 hr prior to CCl_4. Butylated hydroxytoluene given p.o. 48 hr before CCl_4 was similar to ethoxyquin in its protective effect, but i.p. doses were ineffective. No correlation between the concentration of these antioxidants in the liver (vitamin E was high, while ethoxyquin and butylated hydroxytoluene were minimal) and the time of their greatest protective effect against CCl_4 toxicity was found, suggesting that their modes of action are indirect and different and not related to their antioxidant properties.

6833 RECURRENT HEPATITIS IN PATIENTS RECEIVING MULTIPLE HALOTHANE ANESTHETICS FOR RADIUM TREATMENT OF CARCINOMA OF THE CERVIX UTERI. *(E.)*

Hughes, M. (Dept. Med., U. Queensland, Brisbane, Australia) and L. W. Powell. *Gastroenterology* 58(6):790-797, 1970.

Severe acute hepatocellular jaundice was reported in 6 patients who had received multiple halothane anesthetics for radium treatment of carcinoma of cervix uteri. In 5 of the 6 patients, recurrent episodes of unexplained fever, bilirubinuria, or jaundice followed separate exposures to halothane; two patients died in acute hepatic coma. An additional 320 patients have received radium treatment with non-halothane anesthetics with occurrence of only 1 case of hepatocellular jaundice. Fever of 100°F (37.7°C) is not uncommon for 24-48 hours following radium insertion and the incidence of early (occurring within 5 days) unexplained fevers after halothane did not differ significantly from that after non-halothane anesthetics. However, there was a significant increase in late (after 5 days) postoperative fever after halothane anesthetics, while a study of 50 patients receiving multiple nonhalothane anesthetics for radium treatment of cervix uteri carcinoma revealed no evidence of late postoperative fever and no biochemical or clinical evidence to indicate liver damage.

834 LIVER CELL DEFECATION: AN ELECTRON-MICROSCOPE STUDY OF THE DISCHARGE OF LYSOSOMAL RESIDUAL ODIES INTO THE INTERCELLULAR SPACE. *(E.)* Kerr, J. . R. (U. Queensland Med. Sch., Brisbane, Australia. *Path* 100(2):99-103, 1970.

he discharge of lysosomal residual bodies into the ntercellular space by liver cell autophagic vacuoles as studied by electron microscopy in 10 male rats, ed on a high protein, vitamin E-rich diet. An ntense autophagocytosis in the liver cells was nduced by an i.p. injection of albitocin (1 mg/kg) n 8 rats, with 2 rats serving as controls. The njected animals were sacrificed at 12, 15, 18 and 4 hr after injection, and liver tissues were removed, ixed in phosphate buffered osmium tetroxide and tained with uranyl acetate or lead citrate. In the ats injected with albitocin, the increased phago-ytosis was accompanied by dense residual bodies esulting from increased cellular defecation. Resi-ual bodies tended to aggregate around bile canaliculi nd along the plasma membranes, and a large amount f the debris containing remnants of cytoplasmic rganelles appeared in the space of Disse and in the pace between parenchymal cells. This debris in the xtracellular space did not resemble the fragments f disintegrating necrotic cells, and had originated rom the autophagic vacuoles that discharged their ontents through the plasma membrane. Lysosome rem-ants were not detected in the bile canaliculi, the pace between parenchymal cells or in the space of isse in the control animals.

835 HEPATIC HEMORRHAGE IN TOXEMIA OF PREGNANCY. *(E.)* Castaneda, H. (Hosp. 20 de Noviembre, exico City, Mexico), H. Garcia-Romero and M. Canto. *mer J Obstet Gynec* 107(4):578-584, 1970.

evere hepatic hemorrhage was reported in 6 patients ith toxemia of pregnancy. Diagnosis supported by iver scanning was made in 3 cases on clinical grounds nd these 3 patients receovered completely after urgery. The degree of hemorrhagic lesion is very ariable, but can produce extensive destruction of iver and/or large subcapsular hematomas which can upture into the peritoneal cavity; death of the atient usually results. Initial symptom of hepatic emorrhage in eclamptic patients was upper abdominal ain which can occur at any time during pregnancy nd probably reflects some degree of liver damage. udden occurrence of severe pain in the epigastrum, ight upper quadrant of abdomen, right shoulder, and umbar region in toxemic patient may be indicative f hepatic hemorrhage. If pain is accompanied by epatomegaly, hypotension, jaundice, leukocytosis nd anemia, hepatic hemorrhage diagnosis must be trongly suspected. Severe hepatic hemorrhages ave occurred after fourth month of pregnancy or eeks after delivery, but usually occur in third rimester. Most patients are multiparas. Ante-edent of pre-eclampsia and moderate epigastric ain, even a month before, are useful in making orrect diagnosis.

836 TRAUMA OF THE LIVER. *(Fr.)* Fekete, F. (Paris, France) and . Guillet. *J Chir* 98(1-2)55-74, 1969.

6837 THE CARCINOGENIC ACTION IN RATS OF BUTYL-NITROSAMINE AFTER RECTAL APPLICATION. *(Ger.)* Schmahl, D. (German Cancer Ctr., Heidelberg, Germany). *Z Krebsforsch* 74(1):110-111, 1970.

6838 LIVER FUNCTION UNDER THE INFLUENCE OF HIGH CONCENTRATIONS OF HEPATOTROPIC CONTRAST MATERIALS. *(Ger.)* Grenzmann, M. (Med. Clin. U. Bonn, Germany), L. Beltz, W. Schmidtmann and M. Thelen. *Deutsch Med Wschr* 94(1):15-18, 1970.

6839 PORPHYRIA CUTANEA TARDA: COMPARATIVE INVESTIGATIONS ON PORPHYRIN METABOLISM AND EXPERIMENTAL LIVER POISONING. *(Ger.)* Simon, N. (U. Clin. Szeged, Hungary), A. Dobozy and G. Berko. *Arch Klin Exp Derm* 238(1):38-43, 1970.

6840 THE ROLE OF THE LIVER IN THE METABOLISM OF ANESTHETICS: THEIR EFFECT ON HEPATIC PHYSIOPATHOLOGY. *(Fr.)* Aldrette, J. A. (Dept. Anesth., U. Colorado, Denver) and M. Weber. *Anesth Analg* 27(2):297-314, 1970.

6841 DRUG-INDUCED JAUNDICE FOLLOWING CHLOROQUIN. *(Ger.)* Klemm, G. (Med. Clin. U. Rostock, Germany). *Z Ges Inn Med* 25(8):374-376, 1970.

6842 LIVER FUNCTION IN WOMEN WITH MEDROXYPROGESTERONE-ACETATE 150 mg (DEPOT-PROVERA). *(Dut.)* Bergstein, N. A. M. (Zevenaar Hosp., Netherlands) and H. Muste. *Geneesk Gids* 1(8):289-291, 1970.

6843 ANESTHESIA AND THE LIVER. *(E.)* Bradley, S. E. (Columbia U. Coll. Physicians Surgeons, New York, N. Y.). *Ann NY Acad Sci* 170(1):239-245, 1970.

6844 LESIONS IN THE LIVER AND LUNGS OF RATS GIVEN PYRROLE DERIVATIVES OF PYRROLIZIDINE ALKALOIDS. *(E.)* Butler, W. H. (MRC Toxic Unit, Carshalton, Surrey, England), A. R. Mattocks and J. M. Barnes. *J Path* 100(3):169-175, 1970.

6845 OROTATE PREVENTS GALACTOSAMINE HEPATITIS. *(E.)* Keppler, D. (Biochem. Inst. U. Freiburg, Germany), J. Rudigier, W. Reutter, R. Lesch and K. Decker. *Hoppe Seyler Z Physiol Chem* 351(1):102-104, 1970.

6846 ALCOHOLIC HEPATITIS IN THE SPECTRUM OF ETHANOL-INDUCED LIVER INJURY. *(E.)* Shaffner, F. (Mount Sinai Sch. Med., City U. New York, N. Y.) and H. Popper. *Scand J Gastroent* 5(supp. 7):69-78, 1970.

6847 FULMINANT HEPATIC NECROSIS FOLLOWING HALOTHANE ANESTHESIA: REPORT OF A CASE. *(E.)* Rivera, R. A. (Walter Reed Gen. Hosp., Washington, D. C.), H. A. McAllister and M. Robinowitz *Med Ann D C* 39(7):372-373, 1970.

6848 RETARDATION OF MICROSOMAL PROTEIN SYNTHESIS IN RAT LIVER DUE TO INDUCTION OF HANDLER'S EXPERIMENTAL FATTY LIVER. *(E.)* Hasan, S. H. (Fac. Med. U. Nagoya, Japan), Y. Nakagawa, A. Kotaki and K. Yagi. *J Vitamin* 16(1):80-81, 1970.

6849 OXYGEN SUPPLY AND THE HEPATOCYTE. *(E.)* Schaffner, F. (Mount Sinai Sch. Med., City U. New York, New York). *Ann NY Acad Sci* 170(1):67-77, 1970.

6850 EFFECT OF CARBON TETRACHLORIDE POISONING ON THE PLASMA LEVELS OF ASPARTATE-AMINOTRANSFERASE ISOENZYMES IN THE RAT. *(E.)* Ideo, G. (Dept. Med., U. Milan, Italy), R. De Franchis and E. Del Ninno. *Experientia* 26(5):47-48, 1970.

6851 IS THERE A BIOCHEMICAL LESION IN THE DISEASE OF ALCOHOLISM? *(E.)* Truitt, E. B. Jr. (Batelle Mem. Inst., Columbus, Ohio). *Ohio Med J* 66(7):681-683, 1970.

6852 LATE HEMORRHAGE AFTER BLIND HEPATIC BIOPSY. *(Ger.)* Kottlors, W. (Hosp. Int. Med., Bad Kissingen, Germany) and H. Brugel. *Munchen Med Wschr* 112(26):1238-1240, 1970.

6853 THE EFFECT OF NEPHROTOXIC SERUM UPON THE LIVER PARENCHYMA. *(Ger.)* Papacharalampous, N. X. (Greek Red Cross Hosp., Athens), G. Kavetsos, P. Davaris and B. Litsios. *Z Gastroent* 8(3):147-149, 1970.

- P:Morph (6345)
- P:Secr:Hepatobil (6433)(6449)(6467)
- D:Livbil (6768)(6769)(6787)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

6854 INHIBITED LYMPHOCYTIC RESPONSE TO PHYTOHEMAGGLUTININ (PHA) IN ACUTE INFECTIOUS HEPATITIS AND IN CHRONIC AGGRESSIVE HEPATITIS: INDIRECT EVIDENCE FOR VIRUS PERSISTENCE IN CHRONIC AGGRESSIVE HEPATITIS? *(E.)* Martini, G. A. (Med. U. Clin. Marburg, Germany), R. Rossler, K. Havemann and W. Dolle. *Scand J Gastroent* 5(supp. 7):39-42, 1970.

The response of peripheral lymphocytes to phytohemagglutinin (PHA) from patients with acute infectious hepatitis and chronic aggressive hepatitis was studied. Lymphocytes from controls showed increase in RNA and DNA synthesis following PHA stimulation, while lymphocytes from patients with acute infectious hepatitis during the first 10 days of jaundice revealed a depressed, significantly inhibited RNA and DNA synthesis. Lymphocyte reaction to PHA was also inhibited in chronic aggressive hepatitis. Some patients showed a depressed activity of lymphocytes and histologically, these patients showed a protracted acute hepatitis. The mechanism of stimulation of nucleic acid synthesis by PHA is unknown. An inhibited PHA response may indicate a functional lesion of lymphocytes. Manifestation of chronic aggressive hepatitis may be due to a relationship between genetically determined and virus induced immunological disturbance resulting in a self-perpetuating disease with or without virus persistenc

6855 IMMUNOGLOBULIN M (IgM) TURNOVER IN HEPATITIS. *(E.)* Jensen, K. B. (Bispebjerg Hosp., Copenhagen, Denmark). *Scand J Gastroent* 5(supp. 7): 33-37, 1970.

The variations in the synthetic and catabolic rates of serum immunoglobulin M (IgM) were evaluated by measuring daily levels of IgM (by gel filtration methods) and measuring the turnover of radioiodine-labeled IgM in 7 patients with infectious hepatitis, 6 with serum hepatitis, 2 with toxic hepatitis and one with chronic hepatitis. Three of 7 patients with infectious hepatitis had normal IgM turnover with normal synthesis rates (range: 0.7-7.3 mg/kg/day); two had increased catabolic rates of 13.9 and 15.2%/day of IgM (normal range: 7.5-13.6%/day) and normal concentrations of IgM; and 2 patients had elevated serum IgM levels of 1.53 and 5.40 g/l (normal range: 0.27-1.40 g/l) due to increased synthesis rate and normal functional catabolic rate of IgM. In 5 of 6 patients with serum hepatitis, the serum IgM concen-

ations were normal (range: 0.47-1.18 g/1) and
erum synthesis rates of IgM were a high normal (range:
2-18.1 mg/kg/day). In one patient with serum hepa-
tis the serum IgM level was 5.19 g/1, due to the
esence of IgMK M-components in the serum, an in-
eased IgM synthesis rate of 18.3 mg/kg/day and a de-
eased catabolic rate of 6.5%/day of IgM. The patient
th chronic hepatitis had a normal IgM turnover, and
e of the 2 patients with toxic hepatitis had an
evated fractional catabolic rate of 14.5%/day of IgM.
ere were no significant differences in the IgM
rnover patterns in infectious and serum hepatitis,
d serum IgM concentration apparently does not re-
ect abnormalities in the underlying synthesis and
tabolic rates.

56 HEPATITIS AND BONE MARROW DEPRESSION. *(Ger.)*
Wille, L. (Child. Clin. U. Heidelberg,
rmany) and P. Griss. *Monatsschr Kinderheilk*
8(4):114-118, 1970.

inical and anatomopathological features of three
ses of bone marrow depression following viral
patitis in children are reported. The children
ed between 5 and 11 weeks after the onset of
patitis, when its acute phase was over. Bone
rrow depression was not due to autoimmune reaction,
though in one of the cases, the complication might
ve been induced by chloramphenicol. No etiologic
nnection between the two diseases such as viral
fection, hypersplenism, or constitutional factors
uld be ascertained.

57 HEPATITIS IN YOUNG DRUG USERS. *(E.)* Jersild,
T. (Vestre Hosp. Copenhagen Prisons, Denmark),
Johansen, J. T. Balslov, K. Hojgaard, A. Johansen
C. Ott. *Scand J Gastroent* 5(supp. 7):79-83, 1970.

serum transaminase levels were found to be eleva-
to over 100 µmoles/min/1 in 194 of 680 young drug
rs. Liver biopsies were obtained from 100 of these,
men, 1 woman, average age 20.8 years, and practically
of whom inoculated the drug. The liver disease
k a mild clinical course in most cases and hepatic
ufficiency was not encountered at any time. Ninety-
ee percent of the examined patients presented his-
ogical signs of virus hepatitis, classified as mild,
erate, or severe based primarily on the occurrence
'piecemeal' necroses. In 30%, increased amounts
connective tissue were found to be concentrated in
portal spaces, but signs suggestive of cirrhosis
e not observed. Bilirubin levels (above 30 µmole/
/1) were observed in 97%, corresponding fairly well
h the serum transaminase findings. Biochemical
ivity correlated with the histologically demonstrated
erity of the observed hepatitis, and in patients
whom the histological changes were of severe nature,
disease would take a more protracted course.

8 COMPUTER ANALYSIS OF LIVER FUNCTION TESTS
AND THEIR INTERRELATIONSHIPS IN 347 CASES
VIRAL HEPATITIS. *(E.)* Zimmerman, H. J. (VA Hosp.,
ton, Mass.), P. Rozen and R. J. Korn. *Israel J*
Sci 6(1):67-79, 1970.

Computer techniques were used for analyzing and evaluating liver function tests in 347 patients with nonfatal, icteric hepatitis. Results provided a statistical description of biochemical changes during disease, their interrelationships and relative diagnostic significance. Specifically, the maximum activity of serum glutamate-oxalacetate transaminase (GOT), phosphohexose isomerase and age of patient, correlated significantly with the degree of jaundice developed. Calculated rates of decrease in bilirubin, GOT and glutamate-pyruvate transaminase (GPT) were 7.7, 11.7 and 10.5% of peak value per day, resp. The computer developed a description equation for predicting the duration of jaundice; factors significantly influencing the equation were maximum degree of hyperbilirubinemia, serum GOT and GPT activity, and the patient's age. Patients with serum hepatitis showed more severe deviations in liver function tests than those classified as having infectious hepatitis. Low values for many correlation coefficients reconfirm the relatively low specificity of most individual liver function tests, especially differential diagnosis of viral hepatitis and other jaundiced states.

6859 SERUM GUANASE ACTIVITY IN VIRAL HEPATITIS AND SOME OTHER HEPATIC AND EXTRAHEPATIC DISEASES. *(E.)* Giusti, G. (Clin. Infect. Dis., U. Naples, Italy), B. Galanti and A. Mancini. *Enzymologia* 38(6):373-382, 1970.

Serum guanase activity was determined in normal healthy subjects and in 167 patients with hepatic and extrahepatic diseases, including acute viral hepatitis (63 cases), obstructive jaundice (30 cases), cirrhosis of liver (26 cases), neoplasms (32 cases), typhoid fever (15 cases) and bacterial cholangitis (11 cases). Serum guanase activity was determined by spectrophotometry (Kalckar method) for all subjects, and also serum aspartate aminotransferase, alanine aminotransferase and bilirubin values were obtained from patients with acute viral hepatitis. In normal healthy subjects the mean value of serum guanase activity was 2.58 IU/1 at 37°, with a range of 0 to 7 IU/1. In 50 patients with acute viral hepatitis the guanase activity was higher with a mean value of 18.62 IU/1 (range: 2-69 IU/1), and in 13 patients with viral hepatitis with coma the mean value of guanase activity was 97.23 IU/1 (range: 37-212 IU/1). Patients with other types of hepatic and extrahepatic diseases had normal levels or slightly elevated levels of serum guanase activity. In 30 patients with obstructive jaundice the mean guanase activity was 5.03 IU/1, and in 21 patients with cirrhosis of the liver but no coma the mean activity was 6.85 IU/1. In patients with acute viral hepatitis there was a statistically significant correlation between the serum guanase values and those of serum alanine aminotransferase and those of serum aspartate aminotransferase. There was no correlation between serum guanase activity values and serum total bilirubin values.

6860 AUSTRALIA/SH-ANTIGEN AND DISEASES OF THE LIVER: PRELIMINARY INVESTIGATIONS OF DANISH DRUG ADDICTS AND PATIENTS WITH CHRONIC LIVER DISEASES. *(E.)* Reinicke, V. (Bispebjerg Hosp., Copenhagen, Denmark) and E. Nordenfelt. *Scand J Gastroent* 5(suppl. 7):85-88, 1970.

The Ouchterlony technique was used in this study of the possible presence of Australia (Au/SH) antigen in the serum of 60 patients addicted to drugs by injections, and 72 patients with chronic liver diseases confirmed by biopsy (including 20 with chronic hepatitis). Nineteen of the 60 drug addicts had biochemical signs (3 to 40 times increase of serum transaminase and elevated alkaline phosphatase) of a very active acute hepatitis at the time of blood-drawing. Fifteen of these 19 were icteric with a maximal value of serum-bilirubin of 10.6 mg%. Of these 19 patients, 42% were found to have Au/SH-antigen in the serum. Of 36 of the drug addicts without biochemical evidence of hepatitis 1 was found to be Au/SH-antigen positive. Sera from the 72 patients with chronic liver disease with the activity of the disease as estimated from biochemical parameters varying from only slightly elevated serum transaminase levels to strongly increased serum transaminase, alkaline phosphatase and bilirubin values, were persistently Au/SH-antigen negative.

6861 ALPHA-FETOPROTEIN IN AN ADULT OCCURRING IN VIRAL HEPATITIS TREATED BY CORTICOIDS. *(Fr.)* Geffroy, Y. (Hosp. Charles Nicolle, Rouen, France), P. Denis, R. Colin, F. Sauger, F. Matray and A. Fondimare. *Presse Med* 78(24):1107-1108, 1970.

6862 AUSTRALIA ANTIGEN IN A CLOSED ADULT POPULATION MONITORED FOR SERUM GLUTAMIC OXALACETIC TRANSAMINASE. *(E.)* Hok, K. A. (Cutter Labs, Berkeley, Calif), R. Nieman, J. O. Lackey, and V. J. Cabasso. *Appl Microbiol* 20(1):6-10, 1970.

6863 AUSTRALIA ANTIGEN, TRANSFUSION AND HEPATITIS. *(E.)* Okochi, K. (Tokyo U. Hosp., Japan), S. Murikami, K. Ninomiya and M. Kaneko. *Vox Sang* 18(4):289-300, 1970.

6864 THE SERUM HEPATITIS VIRUS SPECIFIC ANTIGEN (SH): A PRELIMINARY REPORT OF EPIDEMIOLOGIC STUDIES IN AN INSTITUTION FOR THE MENTALLY RETARDED. *(E.)* Szmuness, W. (New York Blood Ctr., New York), R. Pick and A. M. Prince. *Amer J Epidem* 92(1):51-61, 1970.

6865 VIRAL HEPATITIS IN ISRAEL: MORBIDITY AND MORTALITY DATA. *(E.)* Reisler, D. M. (Johns Hopkins U. Sch. Hyg. Publ. Hlth., Baltimore, Md.), D. Brachott and J. M. Mosley. *Amer J Epidem* 92(1):62-72, 1970.

6866 VIRAL HEPATITIS IN KENYA: A PRELIMINARY REPORT. *(E.)* Jindani, A. (Kenyatta Natl. Hosp., Nairobi, Kenya), A. Bagshawe and A. T. T. Forrester. *E Afr Med J* 47(3):138-141, 1970.

6867 THE AUSTRALIA (HEPATITIS) ANTIGEN. *(E.)* Wright, R. (Radcliffe Infirm., Oxford, England). *Brit J Hosp Med* 4(1):75-82, 1970.

6868 SERUM HEPATITIS: A HISTORICAL PERSPECTIVE AND CURRENT PROGRESS. *(E.)* Butterick, J. D. (Dept. Path., U. Michigan, Ann Arbor) and P. R. Wilson. *Univ Michigan Med Ctr J* 36(2):67-71, 1970.

○ P:Secr:Hepatobil (6518)(6550)
○ D:Livbil (6768)(6773)(6778)(6782)
○ D:Gen:Parasit (7005)

LIVER AND BILIARY TRACT

Chronic Hepatitis

6869 THE SIGNIFICANCE OF SERUM TRANSAMINASE CHANGES AFTER ADMINISTRATION OF TRI-IODINATED BILE-SECRETED CONTRAST MEDIA. *(Ger.)* Meyer-Burg, J. (Steglitz Clin., Free U. Berlin, Germany) and F. Kater. *Deutsch Med Wschr* 95(27):1444-1446, 1970.

6870 SEROLOGICAL AND IMMUNOLOGIC FEATURES OF CHRONIC HEPATITIS. *(It.)* Comoli, G. (Major Hosp. Novara, Italy) and G. C. Allegra. *Rass Fisiopat Clin Ter* 41(6):638-656, 1969.

6871 THE PATHOGENESIS OF CHRONIC HEPATITIS. *(Ger.)* Rossler, R. (Med. U. Clin. Marburg, Germany) and K. Havemann. *Deutsch Med Wsc* 94(1):34-39, 1970.

6872 SOME MODIFICATIONS IN GLUCOSE METABOLISM DURING THE WORKING PERIODS IN PATIENTS WITH CHRONIC HEPATITIS. *(Fr.)* Georges A. (Inst. Study Work Capacity, Bucarest, Rumani E. Gulan, D. Iliescu and T. Stanciu. *Fegato* 15(4):453-462, 1969.

73 TREATMENT WITH ANTILYMPHOCYTIC GLOBULIN VIA THE CELIAC ARTERY IN HEPATITIS OF
IUNOLOGIC ORIGIN. *(It.)* Ascione, A. (San
naro Hosp., Naples, Italy) and G. Colao. *Arch*
Med 126(9):623-630, 1969.

4 AZATHIOPRINE TREATMENT IN CHRONIC ACTIVE HEPATITIS. *(Fr.)* Montroni,
(Inst. Semeiotic Med., U. Bologna, Italy), P. R. Dalmonte and G. Danieli. *Cah Med* 11(5):393-397, 1970.

● D:Livbil (6764)(6773)
⊙ D:Livbil:A.V.Hep (6854)(6855)(6860)(6864)

LIVER AND BILIARY TRACT

Cirrhosis

5 PULMONARY CIRCULATION IN PORTAL HYPERTENSION. *(E.)* Martini, G. A. (Med. Clin.,
lipps U., Marburg, Germany), H. Arndt, G. Baltzer,
Buchta, A. Hardewig, W. Marsch and H. A. Schmidt.
NY Acad Sci 170(1):280-295, 1970.

relationship between portal hypertension result-
from liver cirrhosis and the pulmonary circulation
investigated in human patients with liver cirrhosis
hepatic disease. Arterial blood samples were
ied for oxygen and CO_2 concentrations, pO_2, pCO_2
hemoglobin concentrations and systemic and pul-
ry arterial and wedge pressures were also measured.
nistration of histamine (0.024 mg/kg/hr, i.v.)
lted in decreased arterial and increased venous
with a mean pO_2 difference of 10.7 mm Hg in cir-
ic patients and 31.6 mm Hg in patients without
tic disease and cardiac output was also found
e increased (10.13 to 15.03 l/min). Pulmonary
rial pressure was not changed during histamine
nistration. Cirrhotic patients showed arterial
turation from 91 to 94% with increased alveolar-
rial oxygen gradients from 11 to 39 mm Hg. The
pheral arterial unsaturation seemed to be due
ncreased blood flow through arteriovenous anasto-
s involving the peripheral and splanchnic area
ell as the pulmonary area.

FUNCTIONAL RENAL FAILURE IN CIRRHOSIS: RECOVERY AFTER PORTACAVAL SHUNT. *(E.)*
oeder, E. T. (Upstate Med. Ctr., St. U. New York,
cuse), P. J. Numann and B. E. Chamberlain. *Ann*
rn Med 72(6):923-928, 1970.

se of spontaneous, severe and prolonged oliguric
tional renal failure was reported in a 44-year-
woman with alcoholic cirrhosis. During a 14
period, there was oliguria, unimproved by plasma
nsion, and progressive uremia requiring periton-
dialysis. When death from uremia and hepatic
appeared imminent, a portacaval shunt was constructed as an elective procedure to reverse renal failure. Improvement in renal function began immediately after surgery and creatinine clearance rose from 8 to 75 ml/min. Presurgical abnormalities of blood pressure, hyperaldosteronism, renal dilution mechanisms, and plasma renin returned to normal or near normal values after surgery. Physiological changes resulting from the surgical procedure seemingly were responsible for recovery of normal renal function.

6877 INCREASED CELLULAR IMMUNOLOGICAL RESPONSE IN PATIENTS WITH CHRONIC LIVER DISEASE. *(E.)* Soborg, M. (U. Hosp. Copenhagen, Denmark) and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):43-47, 1970.

The immunological responsiveness of patients with cirrhosis (8 female, 5 male; aged 17-75 yr) was compared with that of patients suffering from various disorders without known liver involvement (13 female, 3 male; aged 18-80 yr) after primary immunization by s.c. injection of 10^9 heat-killed *Brucella abortus Bang* bacteria. Fourteen days after the antigenic challenge, cellular hypersensitivity was assessed by the leucocyte migration test, based upon the inhibitory effect of antigen upon the *in vitro* migration of leucocytes originating from an organism with cellular hypersensitivity towards the antigen. Patients with cirrhosis developed a higher degree of cellular hypersensitivity than the control patients although the immunologic response of the humoral type as expressed by the titer of agglutinating antibodies was not significantly different in cirrhotic and control patients.

6878 TREATMENT OF POSTNECROTIC CIRRHOSIS WITH 6-MERCAPTOPURINE: WITH A SPECIAL VIEW TO THE POSSIBLE VALUE OF LONG-TERM TREATMENT WITH SMALL DOSES. *(E.)* Faber, V. (Blegdams Hosp., Copenhagen, Denmark) and O. Jessen. *Scand J Gastroent* 5(supp.7):55-59, 1970.

Ten patients with long-standing histologically verified postnecrotic cirrhosis were treated with a 50 to 100 mg daily dose of 6-mercaptopurine (6-MP) for 3 to 6 weeks. Patients were selected only if corticosteroids for 6 months to 9 years had produced severe side-effects or had failed. In 6 series (5 patients) remission occurred after 7 to 10 days while in 3 series (3 patients) improvement was moderate, and in 5 series (4 patients) there was no response. In 10 series, treatment was discontinued because of leucopenia (4 cases), exanthema and fever (1 case), increased bilirubin level without rising enzyme levels (1 case), evidence of increasing liver cell damage (1 case) or no response (3 cases). Remission was maintained in 4 patients for 3 to 5 years by daily doses of 12.5 mg 6-MP, while prednisone dosage was reduced to 5 to 10 mg/day. Prompt relapses occurred when treatment with 6-MP was discontinued after 6 to 12 months, but new remissions resulted when treatment was resumed. Clinical remissions may result from relatively small doses of 6-MP combined with small amounts of corticosteroids.

6879 HEPATIC AND UMBILICOPORTAL CATHETERIZATION IN PORTAL HYPERTENSION. *(E.)*

Viallet, A. (Hosp. St. Luc, Montreal, Quebec, Canada), A. Legare and P. Lavoie. *Ann NY Acad Sci* 170(1):177-192, 1970.

Combined hepatic and umbilicoportal catheterization was studied in 43 cirrhotic patients (39 males and 4 females, aged 29 to 67 years; and portohepatography obtained, with the coronary vein opacified in 38 patients. In 43 patients, wedged hepatic venous pressure values correlated well with free portal venous pressure values. The difference between free portal venous pressure and free hepatic venous pressure (the portohepatic gradient) was used as an index of portal hypertension and a comparison of the size of coronary vein varices with the portohepatic gradient showed a significant correlation. Umbilicoportal catheterization appears to be safer than splenic puncture, since it is performed under clear visualization of the structures involved, and risk of laceration is minimized.

6880 ALBUMIN AND IgG TURNOVER STUDIES IN PATIENTS WITH CIRRHOSIS. *(E.)*

Ramsoe, K. (Govt. Hosp., Copenhagen, Denmark), H. Westergaard, S. Jarnum, M. Jorgensen, T. Schiodt and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):25-31, 1970.

Albumin and IgG turnover was simultaneously determined in 23 unmedicated patients with cirrhosis by tracing radioiodination of highly purified proteins. In 13 patients galactose elimination capacity and maximum sulfobromophthalein transport and storage capacity were related to protein radioactivity. Chronic alcoholism was a possible etiology of cirrhosis in 2 patients, and in the remainder, the etiology was unknown. Jaundice was present in 12 patients, hepatomegaly in 5, and ascites in 8 patients. In 25 control patients, without disorders affecting albumin and IgG metabolism, 19 albumin and 14 IgG turnover studies were done. In 23 cirrhot patients the mean albumin synthesis rate was reduced 7.1 g/day from a normal value of 10.7 g/day, and the IgG synthesis rate rose from a control value of 2.1 g/day to 11.2 g/day. In cirrhotic patients there wer significantly lower values for albumin serum concentr tions (29 g/l vs 42 g/l for controls), in intravascul mass of albumin (94 g vs 123 g in controls), and in t fractional catabolic rate of albumin (7.7%/day vs 8.7 day for controls). Cirrhotic patients also had signi ficantly higher IgG turnover values than control patients. In these patients, IgG serum concentration h a mean value of 31.2 g/l compared with 10.6 g/l in co trols; IgG intravascular mass was 99 g vs 30 g in con trols; IgG functional catabolic rate was 11.4%/day vs 6.8%/day in controls. There were positive correlatio between fractional catabolic rate of albumin and of I and between the distribution ratios of albumin and of IgG. The synthesis rates of both proteins were not correlated. There was a highly significant negative correlation between the serum concentration of albumi and the intravascular mass of IgG, and between the sy thesis rate of IgG and of serum albumin.

6881 THE EFFECTS OF AZATHIOPRINE IN PATIENTS WITH CIRRHOSIS OF THE LIVER. *(E.)*

Ranek, L. (Govt. Hosp., Copenhagen, Denmark), T. Schiodt, M. Soborg and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):49-54, 1970.

Effects of azathioprine (Imurel) were studied in 7 patients with active cirrhosis and 7 with biliary cirrhosis. Duration of treatment varied between 1 month and 2 3/4 years while clinical improvement was noted in 7 patients, 5 were unchanged and became worse during treatment. During the observation period 4 patients died from bacterial sepsis and 2 from liver failure. Three of 4 patients in bad general condition before treatment died and 2 of 10 patients in good general condition died. There was no significant difference between survivors and patients who died during treatment with regard to sex of patients and type of cirrhosis. Of seven patient with initial serum bilirubin value of 5 mg/100 ml or more, 5 died and levels showed a marked increase before death. During treatment, serum transaminases fell significantly, unrelated to clinical effects, while serum gamma-globulin did not change. Bone mar row depression improved in 4 patients following reduction of azathioprine dosage. The average maintenance dose in surviving patients was 85 mg/day and 140 mg/day in patients who died. Azathioprine treat ment is probably of significant value in some cases of active cirrhosis, but not in advanced cirrhosis due to hepatotoxic side effects.

6882 INSULIN AND GLUCOSE METABOLISM IN LIVER CIRRHOSIS AND IN LIVER FAILURE. *(E.)*

Sestoft, L. (Bispebjerg Hosp., Copenhagen, Denmark) and J. F. Rehfeld. *Scand J Gastroent* 5(supp. 7): 133-136, 1970.

Glucose tolerance and insulin response to i.v. gluco loading were measured in 8 patients with histologica proven severe portal liver cirrhosis and hepatic com

patients with histologically proven cirrhosis without
igns of hepatic coma and 8 patients without disorders
f the liver or carbohydrate metabolism. The average
ge among the 3 groups ranged from 56 to 63 yr. The insul-
n response to glucose was significantly higher in pa-
ients with hepatic coma than in both cirrhotic and
ontrol patients (in the two latter groups the in-
ulin response was the same). In 5 patients given re-
eated i.v. glucose tolerance tests before and after
epatic coma the serum insulin values were doubled
r trebled after coma-treatment in 3 patients and
nchanged in 2. The mean fasting serum insulin in
atients with untreated hepatic coma was about 20
U/ml (about 12 μU/ml in both control and patients
ith liver cirrhosis). The glucose assimilation
oefficients and the mean fasting blood sugar were
ot significantly different, or were the same, in
he compared groups. Serum albumin in the coma
roup was about 26.7 g/1, and in the group without
oma about 40.5 g/1. No cases of hypoglycemia were
bserved. Liver failure appears to be accompanied by
yperinsulinism, whereas compensated liver cirrhosis is
ccompanied by normal serum insulin levels.

383 THROMBOCYTOPENIA IN SPLENOMEGALIC CIRRHOSIS OF THE LIVER. *(Ger.)* Gehrmann, G. (St.
osp. Wuppertal, Germany) and C. Elbers. *Deutsch Med
schr* 95(27):1429-1432, 1970.

384 THERAPEUTIC EFFECTS OF ARGININE MALATE IN ALCOHOLIC CIRRHOSIS. *(Fr.)* Tissot-
vre, A. (Hosp. Antiquaille, Lyon, France) and
Brette. *Therapie* 25(3):629-633, 1970.

85 LIMITATIONS AND DANGERS IN THE TREATMENT OF CIRRHOTIC ASCITES. *(Fr.)* Fouet,
(Hosp. St. Antoine, Paris, France), F. Bodin
d C. Liguory. *Therapeutique* 46(4):407-409,
70.

86 A POST-MORTEM SURVEY (1920-1965) OF HEMORRHAGE IN HEPATIC CIRRHOSIS. *(Ger.)*
noldt, K. H. (St. Georg Hosp., Leipsiz, Germany),
Funk and H. Schwarz. *Zbl Allg Path* 113(2):145-
3, 1970.

87 RESULTS OF SURGICAL TREATMENT OF HEPATIC CIRRHOSIS. *(Fr.)* Kayabali, I.
ac. Med., Ankara, Turkey). *Lyon Chir*
(2):120-122, 1970.

38 OBESITY IN PATIENTS WITH CIRRHOSIS OF THE LIVER. *(E.)* Juhl, E. (Bispe-
erg Hosp., Copenhagen, Denmark) and F. Quaade.
nd J Gastroent 5(supp. 7):207-211, 1970.

9 MASSIVE GASTRIC AND DUODENAL HEMORRHAGE IN PATIENTS WITH LIVER CIRRHOSIS. *(E.)*
ter, K. H. (Bispebjerg Hosp., Copenhagen, Den-
k) and F. Zachariae. *Scand J Gastroent*
upp. 7):143-147, 1970.

6890 BLOOD GROUP DISTRIBUTION IN PATIENTS WITH CIRHOSIS OF THE LIVER. *(E.)* Ranek, L. (Govt. Hosp., Copenhagen, Denmark) and E. Juhl. *Scand J Gastroent* 5(supp. 7):203-206, 1970.

6891 RENAL FAILURE IN TERMINAL CIRRHOSIS OF THE LIVER. *(E.)* Thomsen, A. C. (Bispebjerg Hosp., Copenhagen, Denmark) and E. Juhl. *Scand J Gastroent* 5(supp. 7):117-121, 1970.

6892 SOME REMARKS ON FATTY LIVERS AND FATTY KIDNEYS IN THE NEPHROTIC SYNDROME. *(E.)* Kark, R. M. (U. Illinois Coll. Med., Chicago). *Scand J Gastroent* 5(supp. 7):111-116, 1970.

6893 HEPATOGENIC MYOCARDOSIS. *(E.)* Wuhrmann, F. (Winterthur Canton Hosp., Switzerland). *Scand J Gastroent* 5(supp. 7):97-101, 1970.

6894 THE RELATIONSHIP OF PLASMA VOLUME, PORTAL HYPERTENSION, ASCITES AND RENAL SODIUM RETENTION IN CIRRHOSIS: THE OVERFLOW THEORY OF ASCITES FORMATION. *(E.)* Lieberman, F. L. (Dept. Med., U. Southern California, Los Angeles), E. K. Denison and T. B. Reynolds. *Ann NY Acad Sci* 170(1):202-212, 1970.

6895 HEPATIC FIBROGENESIS AND DISTURBANCE OF HEPATIC CIRCULATION. *(E.)* Popper, H. (Mount Sinai Sch. Med., City U. New York, New York) and F. Hutterer. *Ann NY Acad Sci* 170(1):88-99, 1970.

6896 ANTI-ANGIOTENSIN ACTIVITY OF PLASMA AND R.B.C. IN CIRRHOSIS OF LIVER AND NUTRITIONAL HYPOPROTEINEMIA. *(E.)* Bisht, D. B. (Jawaharlal Inst. Postgrad. Med. Educ. Res., Pondicherry, India) and M. Janaki. *Indian Heart J* 21(3):299-306, 1969.

6897 SURGICAL TREATMENT OF HEPATIC ENCEPHALOPATHY. *(E.)* Voorhees, A. B., Jr. (Presbyterian Hosp., New York, N. Y.) and J. B. Price, Jr. *Ann NY Acad Sci* 170(1):259-266, 1970.

6898 ETIOLOGY AND MANAGEMENT OF RENAL FAILURE IN CIRRHOSIS AND PORTAL HYPERTENSION. *(E.)* Baldus, W. P. (Mayo Clin., Rochester, Minn.) *Ann NY Acad Sci* 170(1):267-279, 1970.

6899 THE PROGNOSTIC VALUE OF CLINICAL AND LABORATORY DATA IN PATIENTS WITH CIRRHOSIS. *(E.)* Winkel, P. (Govt. Hosp., Copenhagen, Denmark), E. Juhl and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):181-187, 1970.

6900 THE CAUSES OF DEATH IN PREDNISONE TREATED AND CONTROL PATIENTS WITH CIRRHOSIS. *(E.)* Sloth, K. (Bispebjerg Hosp., Copenhagen, Denmark), E. Juhl and N. Tygstrup. *Scand J Gastroent* 5(supp. 7):189-193, 1970.

6901 ASCITES FORMATION IN CIRRHOSIS AND ITS MANAGEMENT. *(E.)* Sherlock, S. (Roy. Free Hosp., U. London, England). *Scand J Gastroent* 5(supp. 7):9-15, 1970.

6902 CHANGING CONCEPTS OF ALBUMIN METABOLISM AND DISTRIBUTION IN CIRRHOSIS OF THE LIVER. *(E.)* Rothschild, M. A. (New York U. Sch. Med., New York), M. Oratz and S. S. Schreiber. *Scand J Gastroent* 5(supp. 7):17-23, 1970.

6903 DYNAMIC ADAPTATION OF THE OXYHEMOGLOBIN DISSOCIATION CURVE TO ABNORMAL CIRCULATORY PATTERNS IN CIRRHOSIS. *(E.)* Del Guercio, L. R. M. (Albert Einstein Coll. Med., Bronx, N. Y.), R. McConn, A. G. Lerner, S. H. Green and J. H. Siegel. *Ann NY Acad Sci* 170(1):367-378, 1970.

6904 INTERRELATIONSHIP OF VASCULAR AND LYMPHATIC CHANGES IN LIVER INJURY. *(E.)* Dumont, A. E. (New York U. Sch. Med., New York), C. L. Witte and M. H. Witte. *Ann Ny Acad Sci* 170(1):127-133, 1970.

6905 CIRRHOSIS OF THE AGED AND SENILE CIRRHOSIS: ARE THERE TWO CONDITIONS? *(E.)* Ludwig, J. (Mayo Clin., Rochester, Minn.) and A. H. Baggenstoss. *J Geront* 25(3):244-248, 1970.

6906 PATHOGENESIS AND SURGICAL TREATMENT OF INTRACTABLE ASCITES ASSOCIATED WITH ALCOHOLIC CIRRHOSIS. *(E.)* Orloff, M. J. (Sch. Med., U. California, San Diego). *Ann NY Acad Sci* 170(1):213-238, 1970.

6907 ENDOSCOPIC CONTRIBUTIONS TO THE UNDERSTANDING OF PORTAL HYPERTENSION. *(E.)* Palmer, E. D. (New Jersey Coll. Med., East Orange). *Ann NY Acad Sci* 170(1):164-176, 1970.

6908 STUDY OF PLATELET VASCULAR HEMOSTATIC MECHANISM IN INFANTILE CIRRHOSIS OF THE LIVER. *(E.)* Jain, P. K. (Dr. V. M. Med. Coll., Sholapur, India) and V. P. Malthur. *J Indian Med Profession* 16(8):7355-7356, 1969.

6909 POSTEXTRACTION BLEEDING IN CIRRHOSIS OF THE LIVER. *(E.)* Horner, R. M. (Salt Lake City, Utah) and T. C. Bithell. *J Amer Dent Ass* 81(1):125-128, 1970.

6910 FATTY LIVER THERAPY WITH SILYMARIN. *(Ger.)* Fintelmann, V. (DRK Hosp., Hamburg, Germany) *Therapiewoche* 20(23:1055-1062, 1970.

- P:Morph (6326)
- P:Absorp (6371)(6377)
- Diagproc (6573)
- D:Esoph (6582)
- D:Livbil (6764)(6773)(6779)(6780)(6784) (6785)(6797)(6803)(6804)(6805)
- D:Livbil:A.V.Hep (6859)
- D:Livbil:C.Hep (6873)
- D:Livbil:Gallb (6923)
- D:Gen (6941)(6954)

LIVER AND BILIARY TRACT

Gallbladder and Biliary Tract Diseases

6911 THE PHARMACOLOGY OF CHOLELITHIASIS. PREVENTIVE AND THERAPEUTIC EFFECTS OF VARIOUS MEDICATIONS IN THE MOUSE. *(Fr.)* Besancon, F. (Paris, France), C. Marche, C. Barret and J. Parrot. *Therapie* 25(3):463-485, 1970.

Cholelithiasis, inducible in mice by feeding 0.5 g/100 kg sodium dehydrocholate for 4 months, was prevented by clofibrate (0.5 g/100 kg), cholestyramine (3 g/100 kg), d-thyroxine (2 g/100 kg), and diphenylhydantoin (0.2 kg/100 kg). Aspirin (2 kg/100 kg), sodium p-aminosalicylate (0.2 kg/100 kg), vitamin D_2 (2 g/100 kg), vitamin E (0.2 kg/100 kg) and phenylethylacetamide (0.8 kg/100 kg) were somewhat less effective than the former agents. Clofibrate also prevented lesions of the gallbladder which accompany lithiasis as well as cholic acid-induced lithiasis. Induced cholesterol stones were dissolved partially eithe by discontinuing the sodium dehydrocholate after 4 months or by adding clofibrate. However, complete dissolving of the stones or healing of the associated lesions was not achieved. These drugs were not effective on accelerated cholelithiases induced by overloading with sodium dehydrocholate

6912 SURGERY OF BILE DUCTS AND ITS PROGRESS THE ST. GEORGE LEIPZIG HOSPITAL IN THE LAST 50 YEARS. *(Ger.)* Mattig, H. (Dist. Hosp. St George, Leipzig, Germany). *Zbl Chir* 95(20):607-615, 1970.

913 CHOLEDOCHOTOMY: TRANSDUODENAL ROUTE. *(E.)* Kalidas, C. (Thangaraj Hosp., Madurai, ndia). *Antiseptic* 67(5):384-387, 1970.

914 ADENOMAS OF THE GALLBLADDER AND EXTRAHEPATIC BILE DUCTS. *(E.)* Hulten, J. (Acad. osp., U. Uppsala, Sweden), H. Johansson and L. lding. *Acta Chir Scand* 136(3):203-207, 1970.

15 POLYARTERITIS NODOSA OF THE GALLBLADDER AND BILE DUCTS. *(E.)* Dillard, B. M. Washington U. Sch. Med., St. Louis, Missouri) and . C. Black. *Amer Surg* 36(7):423-427, 1970.

16 OBSTRUCTION AT THE AMPULLA OF VATER AS A CAUSE OF ABDOMINAL PAIN. *(E.)* Nardi, G. (Harvard Med. Sch., Boston, Mass.). *Med Times* (7):123-130, 1970.

17 BILE DUCT REPLACEMENT WITH TRACHEAL ALLOGRAFTS. *(E.)* Thomford, N. R. (Ohio . U. Coll. Med., Columbus), J. O. Zachman and S. Vasko. *Amer Surg* 36(7):415-417, 1970.

18 CHOLECYSTITIS AND CHOLELITHIASIS: ANALYSES IN THE ADULT MALE. *(E.)* Bradley, R. L. A Hosp., Huntington, W. Va.) and F. Dominguez. *Virginia Med J* 66(8):248-250, 1970.

19 YEASTS IN THE DUODENUM OF CHILDREN AND INFANTS. *(Ger.)* Alkiewicz, J. A., Jr. ed. Acad. Poznan, Poland), L. Jezowa and E. niakowa. *Mykosen* 13(6):311-314, 1970.

0 A CASE OF MELANOMA OF THE GALLBLADDER. *(Fr.)* Gabriele, R. (Hosp. St. Barbara, bach, France) and C. Jouffre. *Lyon Med* 65(5): -685, 1969.

1 SINGLE DIVERTICULA OF THE GALLBLADDER. *(Fr.)* Nigri, G. (Inst. Path. Surg., U. i, Italy), T. Berardi and P. Ginevrino. *Lyon* 65(5):741-746, 1969.

6922 BILIARY EXCRETION OF N_1,N_1-DIETHYLENIMINO-BIGUANIDO-METHYL-TETRACYCLINE IN HUMANS. *(It.)* Lodigiani, E. (Dept. Surg. Path., U. Pavia, Italy) and P. Ruozi. *Arch Sci Med* 126(9):618-622, 1969.

6923 DIABETIC METABOLIC DISORDERS IN PATIENTS WITH CHOLELITHIASIS. *(Ger.)* Schmauss, A. K. (Friedrichshain Hosp., Berlin, Germany), I. Weinberger and F. Poley. *Munchen Med Wschr* 112(27): 1297-1302, 1970.

6924 CARDIAC SYNDROME AND CHOLELITHIASIS. *(Fr.)* Stojanovic, V. K. (Fac. Med. Belgrade, Yugoslavia), V. Djaja, M. Djordjevic and D. Askovic. *Lyon Med* 65(5):735-739, 1969.

6925 THE SOLITARY GALLSTONE. *(Ger.)* Eufinger, H. (St. Hosp. Saarbrucken, Germany) and G. Kumposcht. *Therapiewoche* 20(26):1275-1276, 1970.

6926 MALIGNANT CARCINOID OF THE AMPULLA OF VATER. *(E.)* Brown, H. J. (Oklahoma City, Oklahoma). *J Oklahoma Med Ass* 63(7):292-294, 1970.

6927 EXPERIMENTAL FINDINGS IN THE PATHOGENESIS OF STENOSIS OF THE SPHINCTER OF ODDI. *(Fr.)* Mester, E. (Inst. Anat. Path., U. Budapest, Hungary), E. Kantor and G. Gyenes. *Lyon Chir* 66(2):84-86, 1970.

- o Diagproc (6516)(6547)(6554)(6556)(6557) (6567)
- o D:Stomduo:Peptulc (6668)
- o D:Livbil (6782)

6928 EFFECT OF ENDOTOXIN ON THE ULTRASTRUCTURE OF LIVER AND BLOOD CELLS OF HAMSTERS. *(E.)*

Stewart, G. J. (Dept. Biol., Boston U., Mass.). *Brit J Exp Path* 51(2):114-117, 1970.

The effect of *E. coli* endotoxin (0.3 mg/100g intracardially) on liver and blood cell ultrastructure 30 min and 24 hr after injection was determined in hamsters. Specimens examined 30 min after injection resembled control tissue with typical parenchymal and lining cells but after 24 hr lining cells had distorted subcellular structure and had large gaps between cells putting the lumen in direct contact with the space of Disse and the parenchymal cells were vesiculated with distorted mitochondria and no glycogen. Blood platelets were no more than balloons with a few vesicles, white cells had exaggerated perinuclear zones with no mitochondrial structure, and red cells were aggregated.

6929 THE SIGNIFICANCE OF CENTRILOBULAR SINUSOIDAL CHANGES IN LIVER BIOPSIES. *(E.)*

Poulsen, H. (Comm. Hosp., Copenhagen, Denmark), K. Winkler and P. Christoffersen. *Scand J Gastroent* 5(supp. 7):103-109, 1970.

Significance of percutaneous liver biopsies, all with histological appearance of dilated central veins and sinusoidal engorgment as usually described in congestive heart failure, was investigated in 21 patients (significant centrilobular sinusoidal changes were found in 21 of 1000 biopsies). In 13 of 21 patients, a definite cause for elevation of hepatic venous pressure was observed (heart failure or caval compression). Six biopsies with sinusoidal centrilobular changes exhibiting 'passive congestion' in slight degree, 9 in moderate, and 6 in pronounced degree were found, while 4 cases did not involve intermediate zone. Confluent centrilobular necrosis was demonstrated in one case, while slight centrilobular fibrosis was found in 6. In 8 patients suffering from a variety of chronic disorders (malignant tumors, collagen disease) histologic changes were not caused by increased venous pressure nor by local pressure (thrombosis or tumor). These patients showed no clinical signs of passive congestion and many had low serum albumin concentrations, increased gamma globulin levels and 2 had unexplained hepatomegaly. Occurrence of sinusoidal dilation is not synonymous with congestive hepatopathy and when such cases are encountered, further examinations, such as right sided heart catheterization and pressure measurements in hepatic veins are recommended.

6930 THE GASTROINTESTINAL MICROFLORA OF IRRADIATED MICE: II. EFFECT OF ORAL ANTIBIOTIC ADMINISTRATION ON THE COLONIC FLORA AND SURVIVAL OF ADULT MICE. *(E.)*

Livstone, E. M. (U. Pittsburgh Med. Sch. Hosp., Pa.), T. Hersh, H. M. Spiro and M. H. Floch. *Yale J Biol Med* 42(6):448-454, 1970.

The effect of oral antibiotics on colonic bacterial proliferation, mean survival time and survival rate was studied in 100 90-day-old ICR mice exposed to lethal irradiation. Forty mice were used for *in situ* bacterial culture of colonic feces: 10 were untreated controls, 10 were given 1200r of whole-body X-irradiation and antibiotics (neomycin 50 mg/day; potassium penicillin G, 20,000 U/day), 10 were irradiated only, and 10 received only antibiotics. Two mice from each group were sacrificed at 1, 3, 5, 7, and 10 days after irradiation, and histopathologic and quantitative and qualitative bacterial culture determinations were made on intestinal tissues and colonic washings. Sixty mice were used in a survival study, in which 10 were untreated controls, 20 were irradiated, 20 were irradiated and received antibiotics, and 10 received antibiotics only. In the feces of irradiated mice there was an increase in coliform bacteria (10^{10}/g vs 10^{5}/g for controls) and in total aerobes (10^{10}/g vs 10^{7}/g for controls) on the tenth day after irradiation. There was also an increase in total anaerobes on the seventh (10^{9}/g vs $10^{7.5}$/g for controls) and tenth(10^{10} g vs 10^{8}/g for controls) days after irradiation. In antibiotic-fed mice on bacteria were cultured and only anaerobic and aerobic fungi were recovered in the media. Histologic examination of the colon revealed an unbroken mucosal surface in all animals, and none of the mice demonstrated bacterial or fungal invasion of the colon wall. All irradiated mice began to die on the eighth day post-irradiation. The mean survival time for irradiated mice was 10.7 days, and was not significantly different from the survival time of 11.7 days for antibiotic-fed irradiated mice.

6931 DISTRIBUTION OF ECHOVIRUS ANTIBODY IN SERUM NASOPHARYNX, RECTUM, AND SPINAL FLUID AFTER NATURAL INFECTION WITH ECHOVIRUS TYPE 6. *(E.)*

Ogra, P. L. (Sch. Med. St. U. New York, Buffalo). *Infect Immun* 2(2):150-155, 1970.

The distribution of echovirus 6 antibody in the serum, nasopharynx, rectum, and spinal fluid was studied in a group of children with naturally acquired echovirus type 6 infection, with or without meningeal involvement, by radioimmunodiffusion and autoradiography. The response in serum was characterized by sequential appearance of γM (detectable 1 day after onset of illness, γG (constituting the bulk of antibody present in the late serum) and rarely of γA antibody. The secretory response in the nasopharynx and rectum was limited to secretory γA immunoglobulin, detectable in half of the children about 2 weeks after onset of infection. By 4 weeks all children had appreciable levels of γA echovirus 6 antibody activity in both nasopharynx and rectum (titer: 3.2 and 5, resp.). γG was the only class of immunoglobulin detectable in the spinal fluid (2-12 mg/100 ml). No appreciable changes were demonstrable in the levels of γG immunoglobulins in the spinal fluid of the children without meningitis during the study period; however, in children with meningitis, total γG concentrations increased approximately 2-fold by 14 days of infection (7.4 mg/100 ml as compared to 3.8 mg/100 ml). At 90 days post-infection, similar mean levels of γG were observed in both groups. Echovirus 6 was recovered from the spinal fluid of 5 out of 6 patients tested with meningitis; no virus was recovered from the spinal fluid of children without meningitis. Apparently after short term acute infection with enteroviruses, the appearance of γG antibody in spinal fluid may be a reflection of increased transport of serum antibody, particularly of the γG immunoglobulin class.

;932 THE GASTROINTESTINAL MICROFLORA OF IRRADIATED MICE: I. RELATIONSHIP OF UCOSA AND MICROFLORA IN WEANLING MICE. *(E.)* Livstone, . M. (U. Pittsburgh Med. Sch. Hosp., Pa.), H. M. piro, T. Hersh and M. H. Floch. *Yale J Biol Med* 2(6):439-447, 1970.

he changes in the intestinal bacterial populations ccurring in the 10 day period following a lethal rradiation were correlated with histopathologic bservations in 28 male weanling ICR mice. Fourteen ice received 1200 r of whole-body radiation and the emaining 14 were used as untreated controls. At hr, and at 1, 2, 3, 5, 7, and 10 days following rradiation, 2 mice from each group were sacrificed nd sections of stomach, mid-jejunum and mid-colon ere prepared for histologic examination. From the emainder of each organ 0.1 g or 1 ml of luminal ontents were removed, diluted and cultured, and lices of each organ were weighed, homogenized, iluted and cultured. In fecal specimens there was n increase in total aerobes on the 5th (10^7/g vs $)^5$/g for controls), 7th (10^9/g vs 10^5/g for controls) nd 10th (10^8/g vs 10^6/g for controls) days following rradiation. Coliform bacteria increased with a aximum increase on the 7th (10^8/g vs 10^4/g for con- rols) day after irradiation. Bacterial counts of olonic washings showed an increase in total aerobes, specially on the 5th ($10^{2.7}$/g vs 10^1/g for controls) nd 7th (10^7/g vs 10^1/g for controls) day after ir- adiation. Bacterial proliferation appeared in the ucous layer and colonic wall, as well as within the olonic contents. Total aerobes increased in colonic omogenates on the 5th ($10^{5.8}$/g vs 10^1/g for controls) nd 7th ($10^{7.8}$/g vs 10^1/g for controls) days post- rradiation. Maximum histologic damage occurred in ntestinal mucosa on the first to third days, con- isting of epithelial cell vacuolation and edema, and enudation of the villi, but no microabscesses or pro- essive cellulitis was seen in damaged tissue. Bac- eria seemingly proliferate in the colonic lumen fol- owing irradiation and may invade the intestinal wall oducing bacteremia.

33 SOME EFFECTS OF PORTACAVAL ANASTAMOSIS IN THE MALE RAT. *(E.)* Kyu, M. H. (Inst. eurol., London, England) and J. B. Cavanagh. *it J Exp Path* 51(2):217-227, 1970.

fects of portacaval anastomosis on male rats were scribed. Five week, post-operative food consump- on showed operated animals ate 1/3 the amount of ntrols. From 5-8 weeks after operation, they ate lf as much as controls, while at 8 weeks or more, imals ate 2/3 or more of control amounts. Young ts (180-250 g) lost 10-20% of their original body ight, but were beginning to gain weight by 4th ek; pre-operative weights were reached by 10-14 eks. Older rats lost 20-30% of their original dy weight and did not gain weight until 7 weeks ter the operation; peak weight was reached at weeks. Examination of the portal vein at death vealed a patent vessel and there was no thickening evidence of recanalization of a thrombosis. Ad- sions around the operation site were present in l cases. Mean liver weight fell to less than half the mean normal within a week after operation, but increased steadily after 8 weeks. This increase closely paralleled the increase in body weight. Mean testicular weight showed a slow decline during the first five weeks to less than half of the mean normal weights, but increased slowly and reached normal values by 30-38 weeks. Plasma ammonium nitrogen reached a new level of 400-500 μg/100 ml postoperatively, but slowly decreased after 12 weeks. Neomycin reduced plasma ammonium concentration to half of the expected level; this was reversed by giving ammonium acetate in the drinking water. Feeding of a high protein diet, or blood daily, did not raise ammonium levels to the previous peak of 400-500 μg/ml. All features seemed to be linked and dependent upon the return of portal blood to the liver through adhesions around the operation site.

6934 TRIGLYCERIDE TRANSPORT IN PROTEIN-DEPLETED RATS. *(E.)* Flores, H. (Fac. Med. U. Chile. Santiago), W. Sierralta and F. Monckeberg. *J Nutr* 100(3):375-379, 1970.

The effect of plasma protein fractions containing protein precursors of low density lipoproteins on the tryglyceride transport from the liver was studied in protein-depleted male albino weanling rats. Experimental animals received a protein-free, low choline diet for 15 to 17 days, and control rats received standard laboratory diets. Labeled plasma proteins (50 mg/ml) were injected i.v. and ^{131}I-oleic aicd was injected i.m. The apoprotein of low density lipoproteins was prepared from the serum of normal fasted rats and the albumin from the preparation was used as a control injection. Serum triglycerides were determined by chromatographic methods and radioactivity of serum I-triglyceride was measured by a scintillation counter. Protein-depleted rats developed fatty livers, steatorrhea, mucosal lesions and symptoms similar to those of human kwashiorkor. Mean body weight in rats receiving control diet was 75 g and in the malnourished rats was 21 g. In normal rats, serum protein concentration was 6 g/100 ml, serum triglycerides measured 29 mg/100 ml and liver triglycerides were 5 mg/g; while in malnourished rats these respective values were 3 g/100 ml, 18mg/100 ml, and 18 mg/g. The injection into malnourished rats of 1 mg/g body weight of serum protein fraction containing apoprotein of low density lipoproteins raised the serum triglyceride level to greater than 30 mg/100 ml within 45 min after injection, and this level was maintained for 135 min. Injection of serum albumin in control rats produced no change in serum triglyceride levels. In the control rats the incorporation of ^{131}I-oleic acid into serum triglycerides following treatment with apolipoprotein was measured as 18,000 cpm/μmole and following treatment with albumin, was 30,000; while in the malnourished rats the apolipoprotein induced an incorporation value of 35,000 and the albumin only 9,000 cpm/μmole triglyceride. Impaired liver triglyceride is seemingly due to diminished availability of apoprotein of low density lipoproteins.

6935 *CANDIDA* ESOPHAGITIS IN CHILDREN WITH MALIGNANT DISORDERS. *(E.)*

Kaufmann, H. J. (Child. U. Hosp., Basel, Switzerland). *Ann Radiol* 13(3-4):157-162, 1970.

Occurrence of *Candida* esophagitis in children with malignant disorders is described. Dysphagia or vague retrosternal and/or abdominal pain with known predisposing factors indicate the possibility of this disorder. Predisposing factors for malignant diseases are leukemia, carcinomas, Hodgkin's Disease, and Lupus erythematodes and predisposing factors for non-malignant disorders include aplastic anemia, rheumatoid carditis, bacterial endocarditis, diabetes, ulcerative colitis, alcoholism and others after prolonged therapy with corticosteroids and/or broad spectrum antibiotics and/or cytostatic drugs and/or immunosuppressive agents. The incidence of *Candida* esophagitis in children under 1 year was 5.8% with a high incidence in the neonatal period and up to one month. Radiological findings showed a markedly disturbed or complete lack of esophageal wall motility. Alteration of the esophageal mucosa originated in the lower third of esophagus and extended upward as the condition became more severe. Individual lesions consisted of mucosal irregularities; ulcerations and rounded protrusions were also observed. Prompt therapy with Amphotericin B brought about complete disappearance of subjective complaints and regression of local lesions.

6936 PRIMARY HYPERPARATHYROIDISM AND EXOCRINE PANCREATIC FUNCTION: DISTURBANCES OF ENZYME AND ELECTROLYTE SECRETION IN DUODENAL JUICE WITH THE SECRETIN-PANCREOZYMIN TEST. *(Ger.)*

Goebell, H. (Med. Clin. Phillips U., Marburg, Germany), H. D. Horn, Ch. Bode and H. H. Gossmann. *Klin Wschr* 48(13):810-819, 1970.

The function of the exocrine pancreas was studied by a standardized secretin-pancreozymin-test in 24 patients with primary hyperparathyroidism (HPT). Nineteen of the patients were investigated before operation and 5 postoperatively. Activity of amylase, lipase, trypsin, chymotrypsin, carboxypeptidase A and the concentration of bicarbonate and calcium were measured in quantitatively collected duodenal juice. The activities of amylase and lipase in the serum were followed before and after the stimulation by secretin and pancreozymin. Out of 22 patients investigated before or within 10 days after the operation 12 showed a normal and 10 an abnormal function. The pancreatic disturbance was characterized by a lowered enzyme secretion with a normal or only slightly diminished secretion of bicarbonate. The duodenal concentration of calcium was normal (1.2 to 1.4 mmole/l) in the basal secretion and after secretin. After pancreozymin it was higher (2.3 mmole/l) in patients with normal enzyme secretion and significantly lower (0.8 mmole/l) in patients with disturbed enzyme output. A disturbed function of the exocrine pancreas in nearly 50% of the investigated patients existed without clinical signs of pancreatitis. Hypercalcemia seems to be the decisive pathogenetic principle, which exerts its influence mainly on the pancreatic acinar cell.

6937 FREQUENCY OF BLOOD GROUPS OF THE ABO AND Rh_o(D) SYSTEM IN PATIENTS WITH VIRAL HEPATITIS, CIRRHOSIS OF THE LIVER, BILE STONES, PANCREATITIS, UROLITHIASIS AND ULCERATIVE COLITIS. *(E.)*

Vesely, K.T. (Inst. Human Nutr., Prague, Czechoslovakia). *Rev Czechoslovak Med* 16(2):60-71, 1970.

The prevalence of different blood groups in various diseases was investigated by the use of 1886 case histories (440 epidemic hepatitis, 142 liver cirrhosis or chronic hepatitis, 680 with bile stones, 167 with pancreatitis, 57 with ulcerative colitis and 400 with urolithiasis). Patients with epidemic hepatitis showed a higher prevalence of blood group O (control 31.4%: patient 35.7%) and a reduced prevalence of group A (control 45.2%: patient 39.8%). The frequency of blood groups in patients with cirrhosis of the liver and chronic hepatitis was practically equal as in the control group; the same was true of 680 patients with bile stones. There was a statistically significant increase of group AB (control 6.7%: patient 12.1%) and also of Rh_o (D) negative antigen (control 15.8%: patient 23.4%) in patients with pancreatitis. The number of patients with ulcerative colitis was too small for serious reflections. In 400 patients with urolithiasis there was a marked increased incidence of group O and a reduced incidence of group A (control: 31.4, 45.3%: patient: 36.5, 40.4%, resp.). When 17 subjects of this group with stones in the urinary bladder were eliminated, the difference was statistically significant.

6938 NON-OCCLUSIVE INTESTINAL GANGRENE. *(E.)*

Larsen, A. (Inst. Path. City Cty. Aalborg, Denmark). *Acta Chir Scand* 136(3):227-234, 1970.

Retrospective autopsy material of 43 patients with non-occlusive intestinal gangrene and 27 patients with superior mesenteric artery occlusion is presented in order to compare symptomatologic and etiological differences of the two conditions. No particular differences in symptomology were observed although patients with non-occlusive gangrene showed higher incidence of vomiting (approx. 75%) than patients with mesenteric artery thrombosis (approx. 40%). Highest hemoglobin values measured were 25.8 g/100 ml in non-occlusive gangrene patients and 22.1 g/100 ml in patients with thrombosis. No patients suffered from uremia. Age and sex distribution and duration of diseases were almost the same in both. There was a higher incidence of cardiac diseases in cases of non-occlusive intestinal gangrene (70 to 90%) than in cases of thrombosis (65%). In occlusive gangrene, thrombo-embolic conditions were more frequently observed in other sites than the alimentary canal. Failure in protective mechanisms of the intestine against intestinal content seemingly occurs in non-occlusive gangrene. Failure may be produced by a lowered oxygen tension in intestinal epithelium as a result of a combination of two or more of the following factors: cardiac disease, pulmonary disease, arteriosclerosis and increased blood viscosity.

6939 IMMUNOGLOBULINS AND ANTIBODIES IN GALLBLADDER BILE. *(E.)* Keclik, M. (Tulane U., Delta Primate Res. Ctr., Covington, La.), R. H. Wolf, and O. Felsenfeld. *Amer J Gastroent* 54(1):19-29, 1970.

Immunoglobulins (Igs) and their antibodies were studied with immunological techniques (radial diffusion, hemagglutination, complementation, and toxin titration of antibodies) in 16 patas monkeys and 4 baboons challenged with *Vibrio cholerae Ogawa*, strain 11 (1 to 1.3 x 10^9 viable cells) 11 days after cholecystectomy. Serum levels (mg%) of IgG, IgM, and IgA dropped slightly from their initial values (950 to 825, 300 to 250, and 175 to 150, resp.) on day 1 after surgery, then returned to the starting values; bile levels (mg%) of IgG and IgA rose from the normal levels (10 and 6, resp.) to 36 and 44, resp. on day 3 after challenge and returned to normal on day 14, while IgM was present in detectable amounts (5 to 10) only between days 2 and 4 after challenge; and stool levels (mg%) of IgG, IgA, and IgM were undetectable until 1 to 7 days after challenge. Precipitin levels reached maximum levels on day 14 for serum (1:720), days 3 to 6 for bile (1:140), and days 3 and 4 for stool (small amounts present), while vibriocidal activity in serum rose until day 7 (1:1270) and declined after day 14, in bile rose to a maximum during days 3 to 5 (1:330) and declined, and in stool was highest on days 3 and 4 with none detectable after day 7. Maximal titers of antitoxin activity were attained on day 5 after challenge in serum (3.8), in bile (3.0), and in stools.

6940 SIGNIFICANCE OF METHEMALBUMINEMIA IN ACUTE ABDOMINAL EMERGENCIES. *(E.)* Goodhead, B. (U. Texas Med. Sch., San Antonio). *Arch Surg* 101(3):376-378, 1970.

Presence of methemalbumin has been used to distinguish between acute hemorrhagic and edematous pancreatitis. Case reports are presented documenting evidence of methemalbuminemia with abdominal catastrophy not associated with acute pancreatitis. The first case involved a 24 year old woman with colicky lower abdominal pain, vomiting and serum positive for methemalbumin. The diagnosis was pelvic hematocoele from an ectopic gestation, which was evacuated with an uneventful recovery. Case 2 was a 31 year old man admitted for stenosis of an ileostomy stoma which was refashioned without difficulty. Bleeding around the toma subsequently developed, the hemoglobin fell and methemalbumin was found present in the serum. wo other cases are presented involving gangrenous leum and superior mesenteric thrombosis with small bowel infarction and gangrene. Pancreatitis was not present in any of these four cases.

6941 QUALITATIVE AND QUANTITATIVE RELATIONSHIPS OF THE FECAL FLORA IN CIRRHOTIC PATIENTS WITH PORTAL SYSTEMIC ENCEPHALOPATHY AND FOLLOWING PORTACAVAL ANASTOMOSIS. *(E.)* Floch, M. H. (Yale U. Sch. Med., New Haven, Conn.), J. Katz and H. O. Conn. *Gastroenterology* 59(1):70-75, 1970.

Aerobic and anaerobic organisms of the colon were qualitatively and quantitatively compared by bacteriological techniques after culturing on 9 selective media in normal subjects and in cirrhotic patients with or without portal systemic encephalopathy or portacaval anastamosis. Qualitatively, the spectrum of organisms in all the subjects were similar with bacteroides, lactobacilli, and coliforms found in all the subjects and streptococci found in all but 2 controls and 2 cirrhotic patients while clostridia, diphtheroids, and veillonellae were varied even though no statistically significant differences were obvious between groups. Quantitatively, anaerobic organisms were more common ($\log_{10}$ organisms/g stool) than aerobic with bacteroides found most frequently (9.3 in cirrhotic patients and 8.9 in normal) and anaerobic lactobacilli found next most frequently (8.6 in cirrhotic and 7.9 in control subjects). Coliforms were the most common aerobes in control subjects (6.8) but streptococci were often the most common in individual cirrhotic patients even though the overall mean was lower (6.1) than for coliforms. Statistically significant differences in microflora from normal and cirrhotic subjects were evident only in the increased anaerobics and bacteroides in cirrhotic patients.

6942 EFFECT OF CYCLOHEXIMIDE ON UNIDIRECTIONAL SODIUM FLUXES IN THE JEJUNUM AFTER CHOLERA EXOTOXIN EXPOSURE. *(E.)* Grayer, D. T. (Johns Hopkins U. Sch. Med., Baltimore, Md.), H. A. Serebro, F. L. Iber and T. R. Hendrix. *Gastroenterology* 58(6):815-819, 1970.

The effects of cycloheximide on unidirectional sodium fluxes were measured in jejunal loops of New Zealand rabbits exposed to cholera exotoxin. The animals were treated in one of 4 ways: group I was control; group II received 20 mg/kg cycloheximide i.v.; group III had cholera exotoxin instilled in the jejunal loop; and group IV had i.v. cycloheximide and exotoxin in the loop. The exotoxin caused an increased flux of Na$^+$ into the loop and this movement was completely abolished by cycloheximide. Sodium ion flux out of the lumen was not affected by the exotoxin or by cycloheximide. Since cycloheximide is an inhibitor of protein synthesis, its selective inhibition of cholera exotoxin-induced Na$^+$ and water flux into the jejunum suggests that the cholera effect is dependent on protein synthesis.

6943 ORAL IMMUNIZATION IN EXPERIMENTAL SALMONELLOSIS: II. CHARACTERISTICS OF THE IMMUNE RESPONSE TO TEMPERATURE-SENSITIVE MUTANTS GIVEN BY ORAL AND PARENTERAL ROUTES. *(E.)* Fahey, K. J. (Commonwealth Serum Lab., Parkville, Victoria, Australia) and G. N. Cooper. *Infect Immun* 2(2):183-191, 1970.

A temperature-sensitive mutant of *Salmonella enteritidis*, selected because of its inability to proliferate normally at 37°C, has been investigated as a living vaccine in mice. When given parentally (10^6) or orally (2.3×10^{10}), it conferred a high degree of resistance against otherwise lethal *S. enteritidis* infections given intraperitoneally (100, 40%, resp.)

or by mouth (100, 75%, resp.). In contrast to most other effective living *Salmonella* vaccines, the temperature-sensitive mutant survived for only short (2 weeks) periods in mouse tissues. Although the vaccine provided protection against *S. typhimurium* infection (63.5% survival), possibly because of antigenic relationships between the immunizing and challenge organisms, it was ineffective against the intracellular infection caused by *Listeria monocytogenes* (10% survival). A study of the kinetics of *S. enteritidis* infection in the liver and spleen of normal and immunized mice has suggested that immunity is dependent upon the development of a secondary immunological response which arises approximately 7 days after introduction of the challenge infection. Although humoral antibody production forms part of this secondary response, it is not necessarily responsible for control of the infection.

6944 ORAL IMMUNIZATION IN EXPERIMENTAL SALMONELLOSIS: III. BEHAVIOR OF VIRULENT AND TEMPERATURE-SENSITIVE MUTANT STRAINS IN THE INTESTINAL TISSUES OF RATS. *(E.)* Cooper, G. N. (Dept. Med. Microbiol., U. New South Wales, Kensington, Australia) and K. J. Fahey. *Infect Immun* 2(2):192-200, 1970.

The behavior of *Salmonella* organisms in the lymphoid tissues of the intestinal tract by infection of rats was studied via a Peyer's patch. The course of infection in the Peyer's patch and draining mesenteric lymph node was characterized by multiplication of the organism over a period of 4 days followed by a gradual decline in numbers; the organism also passed to the liver and spleen and was isolated from these organs as well as the intestinal tissues for at least 4 weeks. Temperature-sensitive mutants derived from the virulent strain were unable to multiply and did not pass to the liver and spleen; they remained viable for periods less than 2 weeks. *Salmonella* immunity apparently can only be induced by living vaccines and although viable organisms remain in the reticuloendothelial tissues, organisms given in a challenge infection are immediately subject to enhanced bactericidal activity within the intestinal tissues.

6945 IRON ABSORPTION IN KWASHIORKOR. *(E.)* Lynch, S. R. (U. Witwatersrand, Med. Sch., Johannesburg, Union of South Africa), T. H. Bothwell, D. Becker, H. Seftel, K. Stevens and J. Metz. *Amer J Clin Nutr* 23(6):792-797, 1970.

Sixteen infants between 6 and 20 months of age (10 male, 6 female) all with moderate degrees of kwashiorkor were studied in Johannesburg to assess the absorption of various types of iron using whole-body counting. Iron absorption was initially low in the 4 infants who received test doses of ferric chloride (0.5 mg iron labeled with 0.25 μC ^{59}Fe), ranging between 1% and 10%. Following refeeding for 1 to 5 months, absorption improved in all 4 from 9% to 53%. Ferrous sulfate (1.0 mg labeled iron) was well absorbed in 4 of 5 infants tested, showing 24% or more absorption, increasing in 2 infants tested to 50% to 60% after 6 to 8 weeks. Hemoglobin iron (1.0 mg iron) was well absorbed (initially 20% or more) in all 4 infants tested. Three infants were given $^{59}FeCl_3$ in normal gastric juice, which modestly enhanced the initial iron absorption to 11%, 12%, and 13%. No obvious association was noted between the percentage absorption and the marrow iron stores, the sideroblast count, the serum iron, the percentage saturation of transferrin, serum albumin concentration, and erythrogenic activity. Since ferrous iron and hemoglobin iron were well absorbed in the majority of subjects it is suggested that mucosal abnormalities were not responsible for the differing patterns of iron absorption noted in this study.

6946 MESENTERIC INFARCTION. *(E.)* Nathan, H. (Albert Einstein Coll. Med., Bronx, N. Y.), R. Bernstein and C. Blatt. *Amer J Gastroent* 53(6):539-551, 1970.

6947 SYMPTOMS AND THERAPY OF SEGMENTAL ISCHEMIC ENTEROCOLITIS. *(Ger.)* Huber, F. B. (Surg. U. Clin. Zurich, Switzerland) and A. Akovbiantz. *Helvetia Chir Acta* 37(1-2):173-176, 1970.

6948 POSTOPERATIVE ILEUS: POSTOPERATIVE DISTURBANCES OF ELECTROLYTE AND WATER BALANCE. *(Ger.)* Dohrmann, R. (St. Behring Hosp., Berlin, Germany). *Therapiewoche* 20(26):1276-1282, 1970.

6949 MALROTATION OF THE INTESTINE WITH MIDGUT VOLVULUS: A UNIQUE CASE IN AN ADULT WITH A NEW RADIOGRAPHIC FINDING. *(E.)* Bonchek, L. I. (Vanderbilt U Hosp, Nashville, Tenn.). *Amer Surg* 36(7):455-458, 1970.

6950 EPICRITICAL OBSERVATIONS OF CAUSES OF DEATH IN MECHANICAL ILEUS. *(Ger.)* Gall, F. (Surg. Clin. Polyclin., U. Erlangen-Nuremberg, Germany) and D. Vollmar. *Therapiewoche* 20(26):1285-1287, 1970.

6951 INITIAL INTERVENTION AND POSTOPERATIVE ILEUS. *(Ger.)* Brunner, H. (Surg. U. Clin. Mainz, Germany) and S. Khatibnia. *Therapiewoche* 20(27):1301-1303, 1970.

6952 POTASSIUM METABOLISM IN THE PATHOGENESIS OF PARALYTIC ILEUS. *(Ger.)* Schultis, K. (Surg Clin. U. Giessen, Germany) and G. Skibbe. *Therapiewoche* 20(27):1306-1310, 1970.

6953 THE CLINICAL SIGNIFICANCE OF COMMUNICATION BETWEEN ABDOMINAL SPLANCHNIC ARTERIES. *(E.)* Verstraete, M. (Acad. Hosp. St. Rafael, Leuven, Belgium) and J. Vandenbroucke. *Angiologica* 7(3):160-176, 1970.

954 DYSENTERY-LIKE DISEASES OF ADULTS AND
CHILDREN CAUSED BY ENTEROPATHOGENIC
SCHERICHIA COLI. (Rus.) Novgorodskaya, E. M.
Pasteur Epidemiol. Inst., Leningrad, USSR). *Tr*
eningr Inst Epidem Mikrobiol Paster 36:117-132, 1970.

955 ELECTRON OPTICAL STUDIES OF BOVINE VIRAL
DIARRHEA-MUCOSAL DISEASE VIRUS(BVDV). *(E.)*
aess, J. (Res. Inst. Virus Dis., Tubingen, Germany)
id E. Reczko. *Arch Ges Virusforsch* 30(1):39-46,
970.

956 HEREDITARY HEMORRHAGIC TELANGIECTASIA
(OSLER'S DISEASE) AS THE CAUSE OF GASTRO-
ITESTINAL HEMORRHAGE. *(E.)* Christiansen, J. (Govt.
osp., Copenhagen, Denmark) and J. Funding. *Acta*
ir Scand 136(3):213-218, 1970.

57 PERITONEAL DIALYSIS. *(E.)* Ledingham, J.
(Radcliffe Infirm., Oxford, England). *Brit*
Hosp Med 4(1):85-86, 1970.

58 SURGERY IN GASTROINTESTINAL DISEASES IN
NEWBORNS AND INFANTS UNDER ONE YEAR OF AGE.
ap.) Nagai, N. (Sagamihara Natl. Hosp., Kanagawa,
pan), K. Akimoto, N. Enomoto, S. Tatsuzawa and T.
kafuji. *Iryo* 24(1):24-32, 1970.

59 A CASE REPORT OF GARDNER'S SYNDROME.
(Jap.) Muta, N. (Sapporo Med. Coll.,
pan), T. Sato, T. Sakurai, D. Nagasawa and K.
roya. *Nippon Acta Radiol* 29(12):1507-1509,
70.

60 MALIGNANT ABDOMINAL TUMORS IN CHILDHOOD:
DIAGNOSIS AND TREATMENT IN 134 CASES. *(E.)*
llich, E. (Hosp. Sick Child., Bremen, Germany).
n Radiol 13(3-4):163-168, 1970.

61 PERITONITIS: A REVIEW OF 194 CASES. *(E.)*
Long, W. B. (U. Maryland, Baltimore), W.
ll and J. Da Costa. *J Roy Coll Surg Edinb* 15(3):
8-163, 1970.

62 MAJOR ABDOMINAL TRAUMA IN CHILDREN. *(E.)*
Levy, J. L., Jr. (Tulane U. Med. Sch.,
w Orleans, La.) and L. H. Linder. *Amer J Surg*
0(1):55-58, 1970.

63 ABDOMINAL MASSES IN NEONATE. *(E.)* Bergman,
H. (Bronx-Lebanon Hosp. Ctr., N.Y.) and
M. Friedenberg. *New York J Med* 70(13):1770-1774,
70.

64 STUDIES ON PERITONEAL DIALYSIS. *(E.)* Yen,
T. S. (Coll. Med., Natl. Taiwan U., For-
sa), J. T. Cheng and W. Y. Chen. *J Formosa Med*
s 69(3):142-163, 1970.

6965 DIPHENOXYLATE HYDROCHLORIDE THERAPY IN THE DIARRHEA OF MALNOURISHED INFANTS. *(E.)* Bitar, J. (Dept. Pediat., American U. Beirut, Lebanon), S. S. Najjar and R. Y. Asfour. *Arch Dis Child* 45 (240):190-192, 1970.

6966 SERUM ENZYMES IN PROTEIN MALNUTRITION. *(E.)* Zaki, A. H. (Fac. Med., Cairo U., Egypt), B. El Kammah, L. Fayad, A. H. Shehata and S. Mahmoud. *Acta Biol Med* 24(1-2):137-140, 1970.

6967 EFFECTS OF RADIATION ON THE INTESTINES. *(E.)* Deeley, T. J. (Hammersmith Hosp. London, England). *J Indian Med Profession* 16(5): 7251-7258, 1969.

6968 MALNUTRITION STUDIES IN THE RHESUS MONKEY: I. EFFECT ON PHYSICAL GROWTH. *(E.)* Kerr, G. R. (Wisconsin Reg. Primate Res. Ctr., U. WisConsin, Madison), J. Allen, G. Scheffler and H. A. Waisman. *Amer J Clin Nutr* 23(6):739-748, 1970.

6969 A CRITICAL APPRAISAL OF THE GENERAL PATHOLOGY OF NON-NEOPLASTIC BOWEL DISEASE. *(E.)* Sprinz, H. (Walter Reed Army Inst. Res., Washington, D. C.). *Med Ann D C* 39(7):360-364, 1970.

6970 A SPONTANEOUS ANAPLASTIC INTESTINAL METASTASISING CARCINOMA IN A SOUTH AFRICAN CLAWED TOAD (*XENOPUS LAEVIS* DAUDIN). *(E.)* Elkan, E. (Shrodells Hosp., Watford, Hertfordshire, England). *J. Path* 100(3):205-207, 1970.

6971 OCCULT GASTROINTESTINAL BLEEDING IN THE FIRST TWO MONTHS OF LIFE. *(E.)* Anyon, C. P. (Hutt Hosp., Lower Hutt, New Zealand) and K. G. Clarkson. *New Zeal Med J* 70(450):315-317, 1970.

6972 UNUSUAL CASES OF GASTROINTESTINAL TRACT CARCINOID TUMORS. *(E.)* Kazmers, N. (Kelsey Mem. Hosp., Lakeview, Mich.) and W. R. Bennett. *J Abdom Surg* 12(7):116-120, 1970.

6973 A CLINICAL TRIAL OF ORAL THERAPY IN A RURAL CHOLERA-TREATMENT CENTER. *(E.)* Cash, R. A. (Pakistan-SEATO Cholera Res. Lab., Dacca, East Pakistan), D. R. Nalin, R. Rochat, L. B. Reller, Z. A. Haque and A. S. M. Mizanur Rahman. *Amer J Trop Med Hyg* 19(4):653-656, 1970.

6974 RECURRENT PNEUMOPERITONEUM AND CHILAIDITI SYNDROME IN A CASE OF PNEUMATOSIS CYSTOIDES INTESTINALIS. *(Ger.)* Clemencon, G. (Olten, Switzerland). *Schweiz Med Wschr* 100(21):903-908, 1970.

6975 EXPERIMENTAL ENTEROCOLITIS IN GUINEA PIGS CAUSED BY ENTEROPATHOGENIC ESCHERICHIA COLI 0124:K72(B17). *(Rus.)* Polotsky, Yu. E.

(Pasteur Epidemiol. Inst., Leningrad, USSR) and N. R. Vasser. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:156-166, 1970.

6976 EXPERIMENTAL MODEL FOR THE PATHOGENESIS OF UPPER GASTROINTESTINAL HEMORRHAGE. *(E.)* Linder, M. (Heidelberg, Germany) and D. G. McKay. *Bull Soc Int Chir* 29(2):104-111, 1970.

6977 SURGICAL ATONIA AS A CONSEQUENCE OF INAPPROPRIATE PREOPERATIVE MEASURES. *(Ger.)* Hirsch, H. H. (Surg. U. Clin. Frankfurt, Germany). *Therapiewoche* 20(26):1292-1293, 1970.

6978 MYOCARDIAL REPERCUSSIONS OF ACUTE GASTROINTESTINAL ARTERIAL ISCHEMIA: EXPERIMENTAL INVESTIGATION. *(Fr.)* Dogru, M. (Fac. Med. Ankara, Turkey) and H. Atasoy. *Lyon Chir* 66(2):94-96, 1970.

6979 THERAPEUTIC EFFECTS OF HYPOTHERMIA UPON INTESTINAL OBSTRUCTION WITH SPECIAL REFERENCE TO THE CAUSE OF DEATH. *(E.)* Matsukura, S. (Matsukura Surg. Clin., Tokyo, Japan), A. Shirota and M. Miki. *Bull Soc Int Chir* 29(2):112-120, 1970.

6980 A SINGLE OBSERVATION OF *LEPTOSPIROSIS BATAVIAE* WITH AN ICTERIC PROCESS. *(Ger.)* Wolff, E. (Polyclin. Teterow, Germany) and R. Hergt. *Deutsch Gesundh* 25(15):707-710, 1970.

6981 ASSOCIATION OF VIRUSES AND BACTERIA WITH INFANTILE DIARRHEA. *(E.)* Yow, M. D. (Baylor Coll. Med., Houston, Tex.), J. L. Melnick, R. J. Blattner, W. B. Stephenson, N. M. Robinson and M. A. Burkhardt. *Amer J Epidem* 92(1):33-39, 1970.

6982 THE EFFECT OF AMPHOCYCLINE ON CANDIDAL OVERGROWTH IN THE GUT. *(Jap.)* Yamada, R. (Tachikawa Kyosai Hosp., Japan), N. Ishio S. Takegawa, I. Yamamoto and I. Fujimori. *J Jap Ass Infect Dis* 44(1):22-27, 1970.

6983 CLINICAL EXPERIENCE WITH AMINOSIDIN IN BACILLARY DYSENTERY AND OTHER DYSENTERIC DISEASES. *(Jap.)* Takahashi, R. (Tokyo Munic. Ebara Hosp., Japan). *J Jap Ass Infect Dis* 43(12):428-433, 1970.

6984 ACUTE ENTERITIS DUE TO *AEROMONAS HYDROPHILA*. *(Ger.)* Helm, E. B. (Ctr. Intern. Med., U. Frankfurt, Germany) and W. Stille. *Deutsch Med Wschr* 94(1):18-24, 1970.

6985 INTERMITTENT ASPIRATION DRAINAGE OF THE GASTROINTESTINAL TRACT. *(Ger.)* Moser, R. (Canton Hosp. Aarau, Switzerland) and A. Widmer. *Helvetia Chir Acta* 37(1-2):149-156, 1970.

6986 ENTERIC NODULAR ERYTHEMA. *(Fr.)* Bonard, E. C. (Hosp. Inst. Diaconess, St. Loup, Switzerland). *Rev Med Suisse Roman* 90(6):473-478, 1970.

6987 SURGICAL MANAGEMENT OF TUBERCULOUS ENTERITIS. *(E.)* Freant, L. J. (Vanderbilt U. Med. Ctr., Nashville, Tenn.) and J. L. Sawyers. *Southern Med J* 63(6):711-714, 1970.

6988 PERITONEAL BLEEDING IN NORMAL RAT INDUCED BY LYOPHILIZED POWDER OF TUMOR CELLS. *(E.)* Iwaguchi, T. (Cancer Inst. Tokyo, Japan) and Y. Sakurai. *Gann* 61(1):89-91, 1970.

6989 GAS IN THE PORTAL VENOUS SYSTEM. *(E.)* Smit A. D. (Johannesburg Gen. Hosp., Union of South Africa) and G. A. G. Decker. *S Afr J Surg* 7(3):123-128, 1970.

6990 COLISTIN AND OTHER ANTIBIOTICS IN THE TREATMENT OF SPECIFIC GASTROINTESTINAL INFECTIONS. *(E.)* Heyworth, B. (Monsall Hosp., Manchester, England). *Med Officer* 123(25):349-350, 1970.

6991 FLY CONTROL AND DIARRHEAL MORBIDITY IN A RURAL COMMUNITY IN U.P. *(E.)* Kumar, P. (Kalakankar House, Lucknow, India), R. Singh and B. S. Sehgal. *Indian J Med Sci* 24(5):285-291, 1970.

6992 SALMONELLOSIS IN THE UNITED STATES: A FIVE YEAR REVIEW. *(E.)* Brachman, P. S. (Natl. Commun. Dis. Ctr., Atlanta, Ga.), B. Aserkoff and S. A. Schroeder. *Amer J Epidem* 92(1):13-24, 1970.

6993 GASTROINTESTINAL BLEEDING. *(E.)* Baloch, K. H. (St. Mary's Hosp., Colchester, Essex, Eng.) and K. Hazell. *Lancet* 1(7659):1293, 1970.

6994 GASTRO-COLIC FISTULA OF UNCOMMON TYPE. *(E* Leigh, B. (Sutherland Gen. Hosp., Engadin New South Wales, Australia). *Med J Aust* 57(18):904 1970.

6995 ACUTE ORAL TOXICITY OF DIMETHOATE IN ALBI RATS FED A PROTEIN-DEFICIENT DIET. *(E.)* Boyd, E. M. (Dept. Pharmacol., Queens U., Kingston, Ontario, Canada) and L. F. Muis. *J Pharm Sci* 59(8) 1098-1102, 1970.

6996 CHOLERA IN MAHARASHTRA. *(E.)* Thekadi, R. J. (Govt. Publ. Hlth. Lab., Poona, India) and A. G. Lakhani. *Indian J Med Sci* 24(5):266-271, 1970.

997 POTASSIUM THERAPY AND GASTROINTESTINAL
LESIONS. *(E.)* Emerson, D. N. (Mead Johnson
es. Ctr., Evansville, Ind.). *J Mississippi Med Ass*
1(6):321-326, 1970.

98 IMMUNO-STIMULATION IN GASTROENTEROLOGY, A
CLINICAL TESTING OF DUCTION (GLYCOCHOLIC
YSATE OF NEISSERIA PERFLAVA). *(Fr.)* Perier, E. A.
no affil). *Gazz Med France* 77(18):4046-4048, 1970.

99 TWENTY YEARS OF GASTROINTESTINAL CARCINOIDS.
(E.) Kuiper, D. H. (Coll. Human Med.,
chigan St. U., East Lansing), W. A. Gracie, Jr.
d H. M. Pollard. *Cancer* 25(6):1424-1430, 1970.

00 STUDIES OF LIVER FUNCTIONS IN NUTRITIONAL
EDEMA. *(E.)* Ahmed, M. (Gauhati Med. Coll.,
sam, India) and P. Goswami. *Antiseptic* 67(5):343-
7, 1970.

01 ETIOLOGY AND EPIDEMIOLOGY OF CLINICAL
DYSENTERY. *(Rus.)* Sapozhnikova, V. A.
eningrad Epidemiology Ctr., Leningrad, USSR), V. A.
buzova, N. V. Safonova, K. I. Krivonosova and V. A.
rtysheva. *Tr Leningr Inst Epidem Mikrobiol Paster*
:24-31, 1970.

7002 THE BOWEL SOUNDS. *(E.)* Mynors, J. M. (Dept. Surg., U. Coll. Rhodesia, Salisbury). *S Afr J Surg* 7(3):87-91, 1970.

7003 EFFECT OF 950 R WHOLE BODY GAMMA IRRADIATION ON SOME HEPATIC DRUG METABOLIZING SYSTEMS IN MICE. *(E.)* Shysh, A. (Fac. Pharm. U. Alberta, Edmonton, Canada) and A. A. Noujaim. *Canad J Pharm Sci* 5(2):46-49, 1970.

- ● P:Morph (6295)
- ● P:Absorp (6354)(6375)
- ● P:Secr:Stom (6395)(6403)
- ● P:Secr:Panc (6417)
- ● P:Secr:Hepatobil (6430)(6432)(6435)(6450) (6458)
- ○ P:Gen (6514)
- ○ Diagproc (6524)(6525)(6528)(6538)(6539) (6551)(6558)(6572)(6574)
- ○ D:Stomduo (6611)(6614)(6616)(6621)(6643)
- ○ D:S.Intest (6672)(6673)(6679)
- ○ D:S.Intest:Malabs (6685)
- ○ D:L.Intest (6699)(6704)(6723)
- ○ D:Pancreas (6739)(6740)
- ○ D:Livbil (6763)(6766)(6784)(6794)(6804) (6810)(6822)(6824)
- ○ D:Livbil:A.Nonv.Hep (6835)(6840)(6843) (6844)(6847)
- ○ D:Livbil:A.V.Hep (6856)
- ○ D:Livbil:Cirrh (6875)(6883)(6889)(6894) (6896)
- ○ D:Livbil:Gallb (6915)(6919)
- ○ D:Gen:Parasit (7014)

GENERAL

Parasitology

04 PORTAL HYPERTENSION AND SCHISTOSOMIASIS.
(E.) Von Lichtenberg, F. (Harvard Med.
h., Boston, Mass.). *Ann NY Acad Sci* 170(1):100-114,
70.

perimental induction of pipe stem fibrosis was per-
rmed in 6 young chimpanzees given a single exposure
250, 1000 or 2000 *Schistosoma mansoni* cercariae
d necropsied after 7 or 36 months, and in 4 other
impanzees exposed monthly to 100 or 250 cercariae
d necropsied between 24 and 36 months after the
rst exposure; there were 6 control animals. Para-
tological, hematologic, biochemical and serologic
terminations were performed. In the postmortem
udies, most of the schistosomes were found in the
stal branches of the mesenteric veins and were
tive and well developed. Organ egg assays revealed
correlation between eggs in tissues and extent of
inical and pathological involvement. In antemortem
udies, mean portal pressure and hepatic blood flow
terminations conducted in a number of animals near
e end of the experiment failed to demonstrate sig-
ficant differences. In a few animals, irregular
ld elevations in BSP retention and in serum trans-
inases were observed on some occasions as well
increases in total serum proteins. Antibody
velopment was quite similar for all animals. In
e livers of 3 chimpanzees, labeled globulin from a
ronically infected animal caused the staining of
gs within the granulomas and fibrous scars. There
was no evidence of *schistosoma* antigen beyond the confines of these granulomas. Pathological observations closely corresponded to stages seen in earlier surgical biopsies of the liver. These stages included mild portal inflammation without fibrosis, moderate fibrosis of small and some medium sized portal fields, fibrosis of large portal fields without granulomatous invasions, and established pipe stem fibrosis. By following development of the lesions in multiple successive biopsies and in the subsequent autopsy, it could be verified that the changes occurred regularly in this order but at variable individual rates and degrees of progression.

7005 ENHANCED PROLIFERATION OF H-1 VIRUS IN LIVERS OF RATS INFECTED WITH *CYSTICERCUS FASCIOLARIS*. *(E.)* Kilham, L. (Dartmouth Med. Sch., Hanover, New Hampshire), G. Margolis and E. D. Colby. *J Infect Dis* 121(6):648-652, 1970.

Susceptibility of adult rat liver to infection by Toolan's H-1 virus was enhanced by pre-infection of animals with *Cysticercus fasciolaris*, a larval form of *Taenia taeniae*-formis. A single control animal receiving virus alone and which had hepatic granulomas of unknown origin also developed a high viral titer, suggesting that the action of cysticerci in increasing susceptibility to H-1 viral infection was non-specific and due to damage and repair of tissues.

7006 A CLINICAL TRIAL OF IODOTHYMOL PIPERAZINE COMPLEX IN HOOKWORM INFESTATION. *(E.)* Janardhana Rao, K. (Med. Coll. Guntur, India) and K. Kothandaramiah. *Antiseptic* 67(4):281-283, 1 0.

7007 AN UNUSUAL CAUSE OF ACUTE ABDOMEN: A CASE REPORT. *(Jap.)* Lin, J. S. (Kumamoto U. Med. Sch., Japan) and H. A. Fan. *J Kumamoto Med Soc* 44(3):240-250, 2970.

7008 IS THE ONSET OF SCHISTOSOMIASIS IN EUROPE FICTION OR FACT? *(Fr.)* Bayon, N. (no affil). *Gazz Med France* 77(18):4049-4056, 1970.

7009 THE CIRCULATING IMMUNOGLOBULINS INVOLVED IN PROTECTIVE IMMUNITY TO THE INTESTINAL STAGE OF *NIPPOSTRONGYLUS BRASILIENSIS* IN THE RAT. *(E.)* Jones, V. E. (Nat. Inst. Med. Res., London, England), A. J. Edwards and B. M. Ogilvie. *Immunology* 18(5):621-633, 1970.

7010 NICLOSAMIDE TREATMENT OF CESTODIASIS: CLINICAL TRIALS IN THE UNITED STATES. *(E.)* Perera, D. R. (U.S. Publ. Hlth. Service, Atlanta, Ga), K. A. Western and M. G. Schultz. *Amer J Trop Med Hyg* 19(4):610-612, 1970.

7011 METRONIDAZOLE AND NIRIDAZOLE COMBINED WITH DEHYDROEMETINE IN TREATMENT OF CHILDREN WITH AMEBIC LIVER ABSCESS. *(E.)* Scragg, J. N. (Dept. Pediat., U. Natal, Union of South Africa), S. J. Powell. *Arch Dis Child* 45(240):193-195, 1970.

7012 INTRAPERITONEAL RUPTURE OF AN AMEBIC ABSCESS IN A PREGNANT WOMAN AT TERM. *(E.)* De Silva, K. (Dept. Obstet. Gynec., U. Ceylon, Colombo). *Ceylon Med J* 15(1):51-53, 1970.

7013 TAENIA INFESTATION OF THE VERMIFORM APPENDIX. *(E.)* Payne, J. E. (Roy. South Sydney Hosp., New South Wales, Australia). *Med J Aust* 1(15):768-769, 1970.

7014 PATHOGENESIS OF ANEMIA IN COSTA RICA: EPIDEMIOLOGIC STUDY OF HEMOGLOBIN AND SERUM PROTEIN LEVELS AND HOOKWORM INFECTION IN CHILDREN. *(E.)* Villarejos, V. M. (Louisiana St. U. Internat. Ctr. Med. Res. Training, San Jose, Costa Rica). J. Bickers, A. Rivera, A. Pena Chavarria, G. W. Hunter, III and E. Kotcher. *Amer J Trop Med Hyg* 19(4):603-609, 1970.

7015 HEALING RATE OF HEPATIC AMEBIC ABSCESSES: THEORY AND SCAN MEASUREMENTS. *(E.)* Spencer, R. P. (Yale U. Sch. Med., New Haven, Conn.) and G. S. Johnston. *J Nucl Med* 11(7):452-454, 1970.

7016 LIVER SCANNING: ANALYSIS OF 2500 CASES OF AMEBIC HEPATIC ABSCESSES. *(E.)* Cuaron, A. (Nat. Med. Ctr., Mexico City, Mexico) and F. Gordon. *J Nucl Med* 11(7):435-439, 1970.

7017 SYSTEMIC EFFECTS OF CHRONIC COLITIS: WITH SPECIAL EMPHASIS ON CHRONIC AMEBIC COLITIS. *(E.)* Kasliwal, R. M. (S. M. S. Med. Coll., Jaipur, India). *Amer J Proctol* 21(4):247-252, 1970.

7018 REDUCED LEVELS OF GLYCOGEN AND GLUCOSE-6-PHOSPHATASE IN LIVERS OF GUINEA PIGS INFECTED WITH *TRYPANOSOMA GAMBIENSE*. *(E.)* Marciacq, Y. (Dept. Biol., Tulane U. New Orleans, La.) and J. R. Seed. *J Infect Dis* 121(6):653-655, 1970.

7019 PARASITIC PROBLEMS IN PRACTICE: THERAPEUTIC GUIDELINES. *(E.)* Klein, N. C., (New York Hosp. Cornell Med. Ctr., New York) and D. T. Dennis. *Postgrad Med* 47(6):120-123, 1970.

7020 HYDATID DISEASE IN MAN. *(E.)* Nandi, R. L. (Dr. V. M. Med. Coll, Sholapur, India), S. B. Yadav, P. N. Patil and R. N. Sukla. *J Indian Med Profession* 16(9):7369-7372, 1969.

7021 TREATMENT OF CHILDREN WITH ACUTE AMEBIC DYSENTERY: COMPARATIVE TRIAL OF METRONIDAZOLE AGAINST A COMBINATION OF DEHYDROEMETINE, TETRACYCLINE AND DILOXANIDE FUROATE. *(E.)* Rubidge, C. J. (Dept. Pediat., U. Nairobi, Kenya), J. N. Scragg and S. J. Powell. *Arch Dis Child* 45(240):196-197, 1970.

- Diagproc (6578)
- D:Livbil:Gallb (6919)

DESCRIPTION OF INDEXES

BJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line mputer print-out of key-punched cards.

e SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance d describe the content of the abstract or citation. In addition, in this indexing system, some *key word scriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An stract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be entified by an asterisk outside of the brackets.

illustrative example of this indexing system follows:

TESTINE, LARGE

Colon, Carcinoma, Radiological Detection, Rectum (0188)*

LON

Cancer, Polyps, Radiological Detection (0188)*

CTUM

Cancer, Polyps, Precancerous (0188)*

NCER

Large Intestine, Detection, Radiology (0188)*

AGNOSIS

Radiology, Cancer, Large Intestine (0188)*

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

AAGAARD, P.
6642
ABBOTT, A.G.
6392*
ABE, M.
6975
ABERNETHY, B.C.
6713
ABRAHAM, J.M.
6691
ACCARY, J.P.
6402
ADIBI, S.A.
6349*
ADLARD, B.P.F.
6772*
ADLOFF, M.
6701
AGARWAL, M.K.
6298*
AGID, R.
6800
AHMED, M.
7000
AHRENS, E.H., JR.
6352*
AKASAKA, Y.
6545
AKIMOTO, K.
6958
AKINO, T.
6464
AKOVBIANTZ, A.
6947
ALDRETTE, J.A.
6840
ALDRIDGE, W.N.
6444*
ALEXANDER, D.P.
6456
ALKIEWICZ, J.A., JR.
6919
ALLEGRA, G.C.
6870
ALLEN, J.
6968
ALLGOWER, M.
6627, 6631
ALPERS, D.H.
6296*
ALPERT, L.I.
6819
ALVARADO, F.
6363
ALVARES, A.P.
6452*
AMAKI, M.
6828
AMMANN, R.
6548, 6757
ANDO, T.
6603
ANDREWS, W.H.H.
6456
ANONYMOUS
6617, 6707, 6735
ANYON, C.
6971

ARNDT, H.
6875*
ARNOLDT, K.H.
6886
ASAI, K.
6786
ASAKAWA, H.
6625
ASCIONE, A.
6873
ASERKOFF, B.
6992
ASFOUR, R.Y.
6965
ASKOVIC, D.
6924
ATASOY, H.
6978
ATHUKORALA, A.W.
6759
AUNE, S.
6373
AURES, D.
6397*
AUTARD, A.M.
6346
AXELSSON, C.
6564
BACH, G.G.
6377
BADEN, A.
6793
BADLEY, B.W.D.
6764*
BAERLOCHER, C.
6558
BAES, C.
6443*
BAGGENSTOSS, A.H.
6905
BAGSHAWE, A.
6866
BAILEY, E.
6423*
BAILEY, J.A.
6532
BALATRE, J.
6678
BALDUS, W.P.
6898
BALOCH, K.H.
6993
BALSLEV, I.
6693*
BALSLOV, J.T.
6857*
BALTZER, G.
6975*
BARAKAT, M.
6650
BARBER, A.A.
6305*
BARNES, D.W.
6472
BARNES, J.M.
6844
BARNHART, M.I.
6455

BARRET, C.
6911*
BARTSOKAS, S.C.
6388, 6389
BASERGA, R.
6816
BASS, P.
6671*
BATEMAN, J.C.
6708
BAUE, A.E.
6618
BAUGNET-MAHIEU, L
6443*
BAUMGARTEN, H.G.
6299*
BAYON, N.
7008
BEAU, A.
6677
BEAULIEUX, J.
6594
BECK, C.
6562
BECK, G.
6481, 6482
BECK, J.P.
6482
BECK, K.
6429*
BECKER, D.
6945*
BECKER, H.
6703
BECKER, N.H.
6611*
BEFELER, D.
6796
BEHRENS, N.H.
6307*
BELTZ, L.
6838
BENABADJI, R.
6822
BEN-AMI, P.
6794
BENAZIC, B.
6495
BENHAMOU, J.P.
6780*
BENISCH, B.
6819
BEN-MENACHEM, J.
6391
BENNET, J.
6808
BENNETT, T.P.
6323
BENNETT, W.R.
6972
BENTZEL, C.J.
6351*
BERANT, M.
6619
BERARDI, T.
6921
BERAUD, C.
6562

ERCHTOLD, R.
6575
ERCI, G.
6557
ERCOVICI, J.P.
6490
ERG, P.
6991
ERGDAHL, L.
6621
ERGMAN, H.
6963
ERGSTEIN, N.
6771*
ERGSTEIN, N.A.M.
6842
ERKO, G.
6839
ERNDT, W.
6417
ERNHARD, G.C.
6395*
ERNSTEIN, R.
6946
ERTOLLINI, R.
6344
ERTOLOTTI, A.
6578
ERTRAND, L.
6825
ESANCON, F.
6911*
ETHEIL, J.J.
6446*
EZIAT, J.M.
6547
HASIN, R.P.
6719
ICKERS, J.
7014
IERWISCH, J.
6429*
IOTOIS, H.
6722
IRK, Y.
6410*
IRNBAUM, D.
6391
IRZLE, H.
6577
ISHT, D.B.
6896
ITAR, J.
6965
ITHELL, T.C.
6909
JORK, L.
6527
.ACK, R.G.
6805
.ACK, W.C.
6915
.AKELY, J.D.
6438*
.ANC, J.N.
6547
.ANQUET, P.
6562

BLATT, C.
6946
BLATTLER, W.
6570
BLATTNER, R.J.
6981
BLEIBERG, H.
6731*
BLERY, M.
6525
BLOCH, E.H.
6320
BLONDHEIM, S.H.
6358*
BOCK, D.A.A.
6670
BODDY, K.
6357*
BODE, CH.
6936*
BODIN, F.
6885
BOELCKE, G.
6467
BOHRER, S.P.
6634
BOLEY, S.J.
6611*
BOLOGNA, E.
6370, 6699
BONARD, E.C.
6986
BONARD, M.
6742
BONCHEK, L.I.
6949
BONFILS, S.
6402
BONNEMAZOU, A.
6525
BOQUIST, L.
6621
BORGESKOV, S.
6642
BORRIE, J.
6587
BOSSINI, A.
6370, 6699
BOTHWELL, T.H.
6945*
BOUCHIER, I.A.D.
6764*
BOUCHILLON, C.D.
6704
BOUGHA, P.
6747
BOUMGHAR, M.
6741, 6745
BOUTON, J.
6674
BOWRY, S.
6988
BOYD, E.M.
6995

BRACHMAN, P.S.
6992
BRACHOTT, D.
6865

BRADLEY, R.L.
6918
BRADLEY, S.E.
6843
BRATLID, D.
6770*
BRECHER, G.A.
6498*, 6500*
BRETTE, R.
6884
BREUER, H.
6767*
BREUER, J.
6767*
BRIERE, N.
6302*
BRITTON, H.G.
6456
BRITTON, R.C.
6785
BROBMANN, G.F.
6498*, 6500*
BROOKS, F.P.
6394*, 6412*
BROUGHTON, C.W.
6283*
BROWN, D.P.
6649
BROWN, H.J.
6926
BROWNING, A.B.
6440*
BRUN, C.
6999
BRUNNER, H.
6951
BUCHTA, I.
6875*
BUFFAT, J.D.
6663
BUNCH, W.
6616
BUNNAG, B.
6694*
BURGESS, E.A.
6691
BURHOL, P.G.
6406
BURKE, K.
6518*
BURKHARDT, M.A.
6981
BURKI, H.
6679
BURLUI, D.
6636
BURNS, G.P.
6510
BURNSTOCK, G.
6328
BUSCH, H.
6765*, 6781*, 6817
BUSSMANN, J.F.
6639
BUTLER, W.H.
6844
BUTTERICK, J.D.
6868

CABANIE, H.
6332
CABASSO, V.J.
6862
CADALBERT, M.
6723
CAMPADELLI-FIUME, G.
6821
CANTO, M.
6835*
CAPELLI, V.
6361
CAPPELLI, G.
6626
CARBARY, B.J.
6690
CARTER, R.L.
6515
CASH, R.A.
6973
CASTANEDA, H.
6835*
CAVANAGH, J.B.
6933*
CAVES, P.K.
6705
CELLINI, N.
6755
CHABAL, J.
6623
CHALENCON, J.F.
6594
CHALMERS, F.T.
6484
CHAMBERLAIN, B.E.
6876*
CHAMLIAN, A.
6346
CHAN, C.H.
6988
CHANDRASEKHARA, N.
6295*
CHAPEVILLE, F.
6483
CHAPMAN, B.L.
6661
CHAPMAN, J.R.
6460
CHARBONNIER, A.
6371
CHASE, N.E.
6342
CHEN, C.C.
6321
CHEN, W.Y.
6964
CHENG, J.T.
6964
CHEVAN, J.
6360
CHEVREL, B.
6655
CHEVREL, J.P.
6655
CHEY, W.Y.
6379*
CHOI, Y.C.
6781*
CHOUDHURY, A.
6738
CHRETIEN, J.
6731*
CHRISTIANSEN, J.
6642, 6956
CHRISTIANSEN, P.A.
6348*
CHRISTOFFERSEN, P.
6776*, 6929*
CICCOLINI, A.
6567, 6698
CIURANA, A.J.
6825
CIVARDI, F.
6491
CLANCY, J.J.
6606
CLARKE, A.D.
6613*
CLARKSON, K.G.
6971
CLASSEN, M.
6530, 6561
CLEMENCON, G.
6974
CLINGER, W.A.
6671*
COCCO, A.E.
6690
COHEN, M.I.
6611*
COHEN, M.M.
6509
COLAO, G.
6873
COLBY, E.D.
7005*
COLCHER, H.
6560
COLE, D.R.
6796
COLIN, R.
6861
COLLAN, Y.
6501*
COLLIS, J.L.
6584
COMOLI, G.
6870
CONN, H.O.
6582, 6941*
CONNEY, A.H.
6449*
CONSTANTINESCU, C.
6636
COOKE, W.T.
6685*
COOPER, G.N.
6943*, 6944*
COPP, E.F.F.
6465
CORCINO, J.J.
6375
CORONAT, L.
6678
CORREARD, R.P.
6678
CORTE, E.D.
6821
CORTESINI, C.
6626
COUINAUD, C.
6722
COULLAUD, D.
6367
COURVOISIER,
6688
COUTURIER, D.
6387
CRANE, M.
6453*
CRESS, D.C.
6455
CREUTZFELDT,
6467
CROCKARD, H.A
6705
CROSS, S.A.M.
6308*
CROYDON, M.J.
6613*
CSAKY, T.Z.
6351*
CSILLAG, J.
6303*
CUARON, A.
7016
CUCINOTTA, U.
6654
CURRIE, R.A.
6588
CZAJKA, D.M.
6440*
DA COSTA, J.
6961
DAGHER, F.J.
6585
DAIDO, R.
6592
DALAINAS, V.
6662
DALMONTE, P.
6874
DANDRIFOSSE,
6401, 6
DANIELI, G.
6874
DANON, P.
6656
DAOUST, R.
6316
DARDANI, G.
6632
DA SILVA, A.
6700
DAVARIS, P.
6853
DAVARIS, P.S
6609*
DAVIES, M.W.
6365
DEBARROS, Q.
6688
DE BAUN, J.R
6433*

EBRAY, C.
6387, 6416
ECKER, G.A.G.
6989
ECKER, K.
6845
EELEY, T.J.
6967
E FRANCHIS, R.
6850
EHNHARDT, H.G.
6347
ELANEY, J.
6616
E LA TOUR, J.
6416
E LEON, V.
6432*
EL GUERCIO, L.R.M.
6903
ELLA CORTE, E.
6466
ELMONT, J.
6346
EL NINNO, E.
6850
E MARTINO ROSAROLL, G.
6370, 6699
EMLING, L.
6561
EMMER, D.
6326
EMUTH, W.E.
6618
NIS, P.
6861
NISON, E.K.
6894
NNIS, D.T.
7019
ROSSI, G.
6755
SILVA, K.
7012
UCHER, F.
6716
VIC, G.
6743
CK, W.
6385
ETER, R.A.
6586
ETSCHY, J.M.
6374
KOW, A.
6761*
LLARD, B.M.
6915
LUZIO, N.R.
6427*
MSON, S.B.
6528
NBAR, A.
6763*
PPON, R.
6716
TKOWSKY, S.P.
6728
DIWOK, K.
6333
DJAHANGUIRI, B.
6615*
DJAJA, V.
6924
DJORDJEVIC, M.
6924
DOBOZY, A.
6839
DOGAN, E.B.
6979
DOGRU, M.
6978
DOHRMANN, R.
6948
DOLL, E.
6511
DOLLE, W.
6854*
DOMAGK, G.F.
6326
DOMBROWSKI, H.
6976
DOMINGUEZ, F.
6918
DOMSCHKE, W.
6326
DRAWERT, J.
6415
DUBARRY, J.J.
6562
DUBOS, R.
6497*
DUBRASQUET, M.
6402
DUGGAN, J.M.
6661
DUMONT, A.E.
6904
DUNNICK, J.
6447*
DUPONT-MAIRESSE, N.
6731*
DURET, P.
6706
DUTT, B.
6524
DWYER, W.A.
6675
DZOLJIC, M.
6495
EASTWOOD, M.A.
6493*
EBEL, J.P.
6481, 6482
EBINE, S.
6556
ECKMANN, L.
6644
EDDLESTON, A.L.W.F.
6766*
EDWARDS, A.J.
7009
EGDAHL, R.H.
6365
EGENSE, J.
6954
EGUCHI, M.
6831*
EIGLER, F.W.
6574
EISENBERG, H.
6337
EKER, P.
6340
EKLOF, O.
6591
ELBERS, C.
6883
EL KAMMAH, B.
6966
ELKAN, E.
6970
ELKELES, A.
6620
EL-KHATIB, S.M.
6781*
ELMSLIE, R.G.
6414
ELSTER, K.
6593
EMERSON, D.N.
6997
EMMELOT, P.
6292*
ENDO, H.
6831*
ENDO, M.
6556, 6559
ENGELMAN, R.M.
6991
ENGLEHARDT, D.
6739
ENGELHARDT, G.
6558
ENOMOTO, N.
6958
ENOMOTO, Y.
6666
ERDMANN, W.D.
6467
ERGE, D.
6801
ERIKSON, U.
6527
ESPARZA, A.R.
6718
ESPOSITO, V.M.
6514
EUFINGER, H.
6925
EVANS, D.G.
6513
FABER, V.
6878*
FAHEY, K.J.
6943*, 6944*
FAHRLANDER, H.
6558
FAKHOURY, H.
6347
FAN, H.A.
7007
FARINET, G.
6568

FATTERPAKER, P.
6291*
FAVRE-GILLY, J.
6595
FAYAD, L.
6966
FEELEY, J.C.
6513, 6514
FEIGELSON, P.
6424*
FEKETE, F.
6836
FELSENFELD, O.
6939*
FELTKAMP, C.A.
6292*
FENNER, A.
6723
FENNESSY, J.J.
6536, 6734
FENTON, B.H.
6613*
FESTGE, A.
6633
FEX, G.
6502*
FIELD, C.D.
6508
FIGUEROA, E.
6470
FINCKH, E.S.
6607*
FINKELSTEIN, J.D.
6484
FINTELMANN, V.
6910
FIRQUET, M.P.
6418
FLOCH, M.H.
6930*, 6932*, 6941*
FLORES, H.
6934*
FOERSTER, W.
6369
FOG, J.
6770*
FONDIMARE, A.
6861
FONKALSRUD, E.W.
6763*
FORDTRAN, J.S.
6612*
FORGET, A.
6316
FORRESTER, A.T.T.
6866
FORTIER-BEAULIEU, M.
6808
FOTHERBY, K.
6460
FOUET, P.
6885
FOUTS, J.R.
6420*
FOX, R.A.
6778*
FRANKLIN, D.
6499*
FREANT, L.J.
6987
FRENCH, W.E.
6787
FRIEDENBERG, R.M.
6963
FRIEDLAENDER, E.
6712
FUJIMORI, I.
6982
FUJIMURA, S.
6610*
FUJITA, T.
6284*, 6294*, 6553
FUKAI, Y.
6666
FUNADA, M.
6592
FUNDING, J.
6956
FUNK, G.
6886
FURSTENBERG, H.S.
6639
FURUKE, M.
6637
FURUYA, Y.
6600
GAAZ, J.W.
6467
GABLER, W.
6344
GABRIELE, R.
6920
GALAND, P.
6731*
GALANI, N.
6662
GALANTI, B.
6859*
GALENT, N.
6360
GALL, F.
6950
GANGULY, J.
6492*
GARBAG, M.
6403
GARCIA-ROMERO, H.
6835*
GARDE, J.
6743
GAVA, L.
6632
GEFFROY, Y.
6861
GEHRMANN, G.
6883
GELAIN, J.
6743
GELFAND, M.D.
6737
GENTILE-RAMOS, I.
6566
GENTON, N.
6640
GEORGE, P.
6784
GEORGESCU, A.
6872
GHADIALLY, F.N.
6286*
GIERSBERG, O.
6824
GILBERT, I.G.F.
6354*
GILDER, H.
6432*
GILL, W.
6961
GILLELAND, M.J.
6436*
GILLES-BAILLIEN,
6359
GINEVRINO, P.
6921
GITLIN, N.
6526
GIULI, R.
6754
GIUSTI, G.
6859*
GLENN, J.S.
6323
GLEW, D.
6694*
GLIEDMAN, M.L.
6611*
GO, V.L.W.
6409*
GOEBELL, H.
6936*, 6976
GOETZ, F.C.
6740
GOHARA, M.
6786
GOKIM, G.C., JR.
6690
GOLD, P.
6694*
GOLDSTEIN, M.J.
6734
GOLDSTONE, A.
6338
GOLENHOFEN, K.
6386
GOODHEAD, B.
6940*
GOODRIDGE, A.G.
6434*
GOPAL RAO, H.S.
6643
GORDON, F.
7016
GORDON, J.H.
6497*
GORESKY, C.A.
6377
GOSSMANN, H.H.
6936*
GOSWAMI, P.
7000
GOTTSAGEN, W.
6630
GOUGH, D.P.
6476

UTIER, R.
6443*
WDY, J.
6820
YAL, R.K.
6606
AYER, D.T.
6942*
EEN, S.H.
6903
EENWAY, C.V.
6509
ENZMANN, M.
6838
IGOR, M.R.
6512
ISS, P.
6856*
NOWSKA-SENGER, A.
6494*
JNCY, S.M.
6352*
JNDMANN, E.
6775*
JNERT, R.D.
6496
JNICKE, H.
6287*
RRIERO-BOBYLEVA, V.
6313
RRA, J.P.G.
6700
RRE, J.
6638
GENHEIM, K.
6410*
LLAMOT, M.
6677
LLET, R.
6836
AN, E.
6872
N, A.A.
6646
TAFSSON, J.A.
6445*
NES, G.
6927
RFFY, A.
6405
HEN, H.J.
6665
JIOLOV, D.
6761*
CKLE, H.
6475
CKLE, R.
6475
IHARA, M.
6325
NLOSER, P.B.
6510
ANSON, R.
6404
ABI, M.
6382*
GRIMSON, C.G.
6792
HAMILTON, D.
6493*
HAMILTON, T.
6681
HAMMAR, U.B.
6431*
HAMORI, A.
6669
HANSEN, J.L.
6807
HAQUE, Z.A.
6973
HARDEWIG, A.
6875*
HARGROVE, M.D., JR.
6782
HARING, R.
6651
HARRIS, O.D.
6685*
HARTEL, G.
6692
HARTIALA, K.
6659*
HARTWICH, G.
6539
HASAN, S.H.
6777*, 6848
HASHIMOTO, Y.
6637
HASSAN, M.
6525
HATZFELD, A.
6818
HAU, T.
6602
HAVEMANN, K.
6854*, 6871
HAWKES, C.H.
6522*
HAYASAKA, N.
6749*
HAZELL, K.
6993
HEALEY, J.E., JR.
6322
HEIKEL, T.A.J.
6339
HEINZ, F.
6327
HELANDER, H.F.
6407
HELM, E.B.
6984
HELMER, F.
6583
HEMMATI, M.
6615*
HEMMING, F.W.
6476
HENDRICKS, J.
6379*
HENDRIX, T.R.
6942*
HENNING, H.
6573
HENRIKSON, B.
6596
HENRIKSON, R.C.
6334
HENTZEN, D.
6481
HERBERMAN, R.
6694*
HERBERT, V.
6375
HERFORT, K.
6551
HERGT, R.
6980
HERRINGTON, J.L., JR.
6648
HERRMANN, K.
6624
HERSH, T.
6930*, 6932*
HESCHL, R.
6550
HIASA, Y.
6827
HIDVEGI, D.V.S.F.
6536
HIGUCHI, Y.
6600
HILOTANI, K.
6592
HIRATA, G.
6376
HIRAYAMA, C.
6448*
HIROSHIGE, K.
6448*
HIRSCH, H.H.
6977
HIRSCHOWITZ, B.I.
6529
HIRSHOWITZ, B.I.
6406
HIRVONEN, J.
6285*
HITANANT, S.
6379*
HOFMAN, S.
6385
HOFMANN, A.F.
6409*
HOJGAARD, K.
6857*
HOK, K.A.
6862
HOLINGER, P.
6586
HOLLINSHEAD, A.
6694*
HOLLMANN, S.
6422*
HOLSTEIN, A.F.
6299*
HONIGMAN, F.
6618
HOPPENSTEIN, J.
6588
HORECKER, B.L.
6290*
HORI, R.
6733

HORN, H.D.
6936.
HORNER, R.M.
6909
HORTON, A.A.
6437.
HOSBRO OSTERGAARD, A.
6793
HOSOYA, N.
6355.
HOURIGAN, K.
6784
HOWARD, E.
6817
HUBER, F.B.
6947
HUGHES, M.
6833.
HUGUET, J.F.
6547
HUIZENGA, K.A.
6730.
HULTEN, J.
6914
HUNTER, G.W., III
7014
HUTTERER, F.
6895
HYODO, M.
6343
IBER, F.L.
6779., 6942.
ICHIHARA, K.
6828
ICHIKAWA, H.
6478
ICHIKAWA, Y.
6300.
IDE, Y.
6786
IDEO, G.
6850
IKEDA, S.
6516.
IKESHITA, T.
6664
ILIESCU, D.
6872
ILLINGWORTH, J.A.
6335
IMAMI, R.H.
6348.
INADA, M.
6356.
INAMASU, M.
6485
INAMOTO, K.
6554
INFANGER, K.
6590
INGELMAN, B.
6527
INOUE, M.
6786
INOUE, Y.
6330
IONESCO, A.
6667
IRIFUNE, T.
6581
ISHIHARA, S.
6773.
ISHIKAWA, E.
6479
ISHIKAWA, K.
6828
ISHIKAWA, M.
6790
ISHIO, N.
6982
ISHIYAMA, K.
6586
ISRAEL, Y.
6439.
IVERSEN, K.
6776.
IVERSEN HANSEN, R.
6362
JACOB, G.
6467
JACOBSON, E.D.
6364, 6498., 6500.
JACQUOT, R.
6483
JAFFE, B.M.
6393.
JAIN, P.K.
6908
JAKOB, G.
6601
JAKUBOWSKA, K.
6647
JAKUBOWSKI, A.
6647
JALALI, B.K.
6719
JANAKI, M.
6896
JANARDHANA RAO, K.
7006
JANIAKOWA, E.
6919
JANSSEN, W.
6422.
JARNUM, S.
6471, 6880.
JAVOR, T.
6405
JENSEN, H.E.
6693.
JENSEN, K.B.
6855.
JERSILD, T.
6857.
JERVIS, H.R.
6672.
JESSEN, O.
6878.
JEZOWA, L.
6919
JEZYK, P.F.
6442.
JINDANI, A.
6866
JOHANSEN, A.
6564, 6857.
JOHANSEN, C.
6857.
JOHANSSON, H.
6914
JOHN, D.W.
6473
JOHNSON, F.R.
6314
JOHNSON, L.R.
6397.
JOHNSON, M.G.
6815
JOHNSON, R.C.
6507
JOHNSTON, G.S.
7015
JONES, V.E.
7009
JORGENSEN, M.
6880.
JOUFFRE, C.
6920
JOUVE, P.
6547
JUHL, E.
6888, 6890, 6891,
6899, 6900
KAHANA, D.
6619
KAJUBI, S.K.
6524
KALIDAS, C.
6913
KALIMA, T.V.
6501.
KALLENBERG, A.
6574
KANEKO, M.
6829, 6863
KANO, M.
6592
KANTOR, E.
6927
KAPITULNIK, J.
6358.
KARAGEORGIOU, C.
6388, 6389
KARHUNEN, P.
6692
KARK, R.M.
6892
KARL, H.J.
6739
KASLIWAL, R.M.
7017
KASPER, H.
6732.
KATER, F.
6869
KATO, H.
6789
KATO, K.
6435.
KATSUI, T.
6823
KATYARE, S.S.
6291.
KATZ, J.
6941.

ATZ, S.
6988
AUFMANN, H.J.
6935*
AUFMANN, N.A.
6358*
AVETSOS, G.
6853
AWAI, K.
6545
AYABALI, I.
6887
AZMERS, N.
6972
ECLIK, M.
6939*
EEL, H.J.
6570
ELLER, J.
6421*
EMP, M.L.
6613*
ENT, S.P.
6310*
EPPLER, D.
6845
ERR, G.R.
6968
ERR, J.F.R.
6834*
HAIRALLAH, E.A.
6438*
HATIBNIA, S.
6951
HAZEI, A.M.
6738, 6852
HURI, S.
6585
ILHAM, L.
7005*
IMURA, A.
6477
IN, T.
6516*
IRIMOTO, K.
6828
IRKSEY, A.
6441*
IRSNER, J.B.
6534, 6734
IVIKANGAS, V.
6692
IVILAAKSO, E.
6503, 6504
IYONARI, H.
6555
LEIN, N.C.
7019
LEMM, G.
6841
LOPSTOCK, R.
6579*
LOSE, W.
6457
NOBIL, E.
6486
NOBLAUCH, M.
6805
KNODELL, R.G.
6412*
KNOTHE, H.
6511, 6538
KOBAYASHI, S.
6284*, 6519*, 6534,
6600
KOCH, H.
6530
KOENIG, H.
6338
KOEPPE, P.
6651
KOGURE, K.
6610*
KOHLER, J.J.
6701
KOMO, H.
6828
KOMOTO, S.
6294*
KONDO, T.
6519*, 6553, 6554,
6559
KONIJN, A.M.
6410*
KONTUREK, S.J.
6411*
KORB, G.
6297*
KORETZ, S.
6447*
KORN, R.J.
6858*
KOSHIBA, K.
6765*
KOSTER, K.H.
6889
KOTAKI, A.
6777*, 6848
KOTCHER, E.
7014
KOTHANDARAMIAH, K.
7006
KOUTSIKOS, S.
6662
KOZU, T.
6517*
KRAINES, R.
6454*
KRALIK, J.
6380*
KREEK, M.J.
6783
KREEL, L.
6526
KRONE, C.L.
6737
KRUEGER, K.C.
6533
KUCHII, M.
6366
KUCHINO, Y.
6341
KUHN, H.A.
6732*
KUITUNEN, P.
6689
KULBE, K.D.
6327
KUMAKURA, K.
6516*
KUMPOSCHT, G.
6925
KUNDERT, J.G.
6812
KUNTZMAN, R.
6452*
KURIMURA, O.
6828
KURTZ, L.H.
6795
KYU, M.H.
6933*
LACKEY, J.O.
6862
LAFITTE, A.
6676
LAFON, J.
6346
LAFRENZ, M.
6695
LAHELLEC, M.
6371
LAISSUE, J.
6679
LAKHANI, A.G.
6996
LANCASTER, J.R.
6588
LANZOWSKY, P.
6684*
LAPEGUE, A.
6523*
LARSEN, A.
6938*
LARSON, S.J.
6408
LATHE, G.H.
6339, 6772*
LATNER, A.L.
6309*
LAUMONIER, R.
6683*, 6686*
LAUSCHKE, H.
6602
LAVOIE, P.
6879*
LAWSON, T.C., JR.
6709
LAYRISSE, M.
6353*
LE BRAS, M.
6562
LECCE, J.G.
6283*
LEDINGHAM, J.
6957
LEE, J.C.K.
6813
LEEVY, C.M.
6454*, 6768*
LEGARE, A.
6879*
LEGGERI, A.
6578

LEIGH, B.
6994
LELOIR, L.F.
6307*
LEOPOLD, J.G.
6802
LE QUINTREC, Y.
6523*
LERNER, A.G.
6903
LESCH, R.
6845
LE VEEN, H.H.
6579*
LEVEQUE, J.
6367
LEVIN, B.
6691
LEVIN, W.
6449*, 6452*
LEVY, J.L., JR.
6962
LEVY, L.S.
6515
LEWIS, E.A.
6634
LEY, I.
6687
LIBBY, P.R.
6459
LIBERTI, J.P.
6442*
LIE, T.S.
6767*
LIEBERMAN, F.L.
6894
LIEDBERG, G.
6382*
LIEN, W.M.
6365
LIGUORY, C.
6885
LILLEHEI, R.C.
6740
LIN, J.S.
7007
LINDER, L.H.
6962
LISBOA, B.P.
6445*
LITSIOS, B.
6853
LIVADITIS, A.
6591
LIVET, H.
6640
LIVSTONE, E.M.
6930*, 6932*
LOCHER, D.
6739
LOCKWOOD, E.A.
6423*
LOCKWOOD, K.
6642
LODIGIANI, F.
6922
LOESCHKE, K.
6351*
LONG, W.B.
6961
LOOK, D.
6573
LORBER, S.H.
6379*
LORING, J.
6453*
LOWY, C.
6425*
LUCKS, R.
6580*
LUDWIG, J.
6905
LUNDQUIST, A.
6531
LYNCH, S.R.
6945*
MABUCHI, Y.
6288*
MAC DONALD, A.J.
6852
MAC GREGOR, A.B.
6681, 6713
MACHOVICH, R.
6303*
MACINOT, C.
6677
MAC PHERSON, A.I.S.
6522*
MACRIS, G.
6662
MADSEN, S.
6999
MAESS, J.
6955
MAHMOUD, S.
6966
MAILLARD, J.N.
6780*
MAINGUET, P.
6731*
MAKINO, K.
6637
MALDONADO, P.
6729
MALTHUR, V.P.
6908
MAMOUN, S.
6585
MANCINI, A.
6859*
MANGIWA, J.
6748
MANN, K.G.
6336
MANSOURI, H.
6822
MANSOURI, R.
6822
MAO, C.C.
6364
MAPPES, G.
6696
MARCHE, C.
6683*, 6686*, 6911*
MARCIACQ, Y.
7018
MARELLA, M.S.
6674
MARGOLIS, G.
7005*
MARGULIS, A.R.
6714
MARINETTI, G.V.
6428*, 6447*
MARKWARDT, F.
6415
MARQUIE, G.
6800
MARSCH, W.
6875*
MARTINEZ-TORRES, C.
6353*
MARTINI, G.A.
6854*, 6875*, 69
MARUYAMA, M.
6516*
MASI, C.
6626
MASSARI, N.
6491
MASUDA, M.
6545
MASUDA, T.
6828
MATRAY, F.
6861
MATSUDA, M.
6990
MATSUDA, S.
6489, 6975
MATSUMOTO, T.
6637
MATSUYAMA, M.
6304*
MATTHEY, M.
6541
MATTIG, H.
6912
MATTOCKS, A.R.
6844
MAUVAIS-JARVIS, P.
6490
MAZAHERI, A.
6460
MC ALLISTER, H.A.
6847
MC CARTHY, L.J.
6552
MC CONN, R.
6903
MC CORMICK, J.R.
6365
MC DERMOTT, F.T.
6614*
MC DERMOTT, W.V.
6791
MC FARLAND, L.Z.
6506
MC GUIGAN, J.E.
6393*
MC MINN, R.M.H.
6314
MC NAMARA, H.
6611*

NEILL. J.R.
6509
ADOWS, J.A., JR.
6597
HDIRATTA, K.S.
6719
IER, A.L.
6797
IER-RUGE, W.
6717
INE, J.
6627
LIUS, P.
6413*
LNICK, J.L.
6981
LO, J.R.DA C.
6700
RRITT, A.M.
6394*
RTZ, D.P.
6396*
RVEILLE, P.
6803
STER, E.
6927
TAYER, J.
6683*, 6686*
TZ, J.
6945*
TZGER, R.P.
6465
TZGER, S.A.
6465
YER, R.R.
6474
YER-BERTENRATH, J.G.
6326
YER-BURG, J.
6869
YER-FURST, P.
6541
CHEL, F.
6724
CHEL, W.
6576
CULINIC. T.
6495
DTVEDT. T.
6608*
LLER, E.C.
6433*
LLER, J.A.
6433*
LLER, L.L.
6473
LLER, S.A.
6440*
MURA, H.
6786
SAKI, F.
6545
TCHELL. C.G.
6766*
ZANUR RAHMAN. A.S.M.
6973
HAN, M.
6414
MOLIMARD, R.
6803
MONCKEBERG, F.
6934*
MONGES, H.
6346
MONTANEZ, O.
6729
MONTRONI, M.
6874
MORAVA, E.
6350*
MORGAN, J.P.
6506
MORGANTHALER, F.R.
6852
MORGER, R.
6717
MORIUCHI, S.
6355*
MOROTOMI, I.
6448*
MORRIS, H.P.
6287*, 6762*, 6816
MOSER, R.
6985
MOSLEY, J.M.
6865
MOULIN, G.
6724
MOZSIK, G.
6405
MUHLENBERGER, G.
6297*
MUIS, L.F.
6995
MULLER, C.A.
6520*
MULLER, H.A.
6345
MULLER, M.
6747
MUNASINGHE, D.R.
6750
MUNSCH, N.
6461
MURIKAMI, K.
6545
MURIKAMI, S.
6863
MUROYA, K.
6959
MURPHY, G.M.
6764*
MUSCATELLO, U.
6313
MUSTE, H.
6842
MUTA, N.
6959
MYNORS, J.M.
7002
NAGAI, N.
6958
NAGASAKO, K.
6559
NAGASAWA, D.
6959
NAHUM, H.
6808
NAJARIAN, J.S.
6740
NAJJAR, S.S.
6965
NAKAGAWA, Y.
6516*, 6848
NAKAJIMA, K.
6479
NAKAJIMA, S.
6666
NAKAMURA, M.
6592
NAKASHIMA, K.
6290*
NAKAYAMA, K.
6645
NALIN, D.R.
6973
NANBA, R.
6384
NANDI, R.L.
7020
NARAY, A.
6303*
NARAYAN, K.A.
6295*, 6762*
NARDI, G.L.
6916
NATHAN, H.
6946
NAUMIK, A.
6647
N'DOYE, M'B.
6623
NEGISHI, M.
6315
NEMETH, P.
6753
NEWTON, W.T.
6393*
NEYA, T.
6383
NIAZI, S.P.
6778*
NIEMAN, R.
6862
NIEMANN, H.
6601
NIESSING, J.
6451*
NIGRI, G.
6921
NINOMIYA, K.
6863
NISHIHARA, H.
6289*
NISHIHARA, T.
6399
NISHIMURA, S.
6341
NISHIMURA, T.
6488
NISHIUCHI, M.
6828
NISKANEN, E.
6503, 6504

NIXON, D.A.
6456
NOONAN, S.M.
6455
NORDENFELT, E.
6860*
NORGAARD, F.
6693*
NORGAARD, R.P.
6612*
NORMAN, A.
6419*, 6808*
NOUJAIM, A.A.
7003
NOVELLO, F.
6317
NOYES, D.H.
6390
NUMANN, P.J.
6876*
NYGAARD, K.
6608*
NYOTH, J.
6756
O'BRIEN, R.F.
6675
OCHSNER, A.
6660
OCKERMAN, P.A.
6531
OGATA, Y.

6738
OGDEN, WM.W., II
6630
OGILVIE, B.M.
7009
OGRA, P.L.
6931*
OHARA, Y.
6294*
OHIRA, S.
6805
OHMAN, U.
6629
OHMART, R.D.
6506
OI, I.
6517*, 6519*, 6553,
6645
OI, S.
6485
OKABE, H.
6487
OKABE, M.
6400
OKADA, T.
6786
OKAMOTO, M.
6637
OKITA, H.
6828
OKMIAN, L.
6591
OKOCHI, K.
6863
OKUDAIRA, M.
6366
OKUMURA, M.
6777*
OLDING, L.
6914
OLSEN, S.
6999
OLSEN, T.S.
6657*
OLSNES, S.
6311
OMURA, I.
6828
OMURA, T.
6315
ONAI, Y.
6581
ONO, T.
6343
OPPER, A.
6768*
ORATZ, M.
6902
ORLOFF, M.J.
6392*, 6906
OSHIMA, H.
6549, 6571
OTT, C.
6857*
OTTENJANN, R.
6622, 6641
OVERBECK, W.
6577
OWMAN, C.
6299*
OZAWA, H.
6478
OZAWA, T.
6325
PABST, R.
6344
PACKER, L.
6437*
PAINTER, N.S.
6715
PALMA, F.
6727
PALME, G.
6680
PALMER, E.D.
6635, 6907
PAN, C.M.
6718
PAOLAGGI, J.
6387
PAPACHARALAMPOUS, N.X.
6853
PAPP, M.
6753
PARIS, J.
6803
PARROT, J.
6911*
PARRY, E.W.
6286*
PARRY, T.E.
6802
PARSONS, M.E.
6309*
PATEL, D.D.
6852
PATIL, P.N.
7020
PAUMGARTNER, G.
6454*
PAVLICA, D.
6806
PAYNE, J.E.
7013
PEIPER, H.J.
6602
PELKONEN, P.
6689
PENA CHAVARRIA, A
7014
PENN, I.
6792
PENTTILA, A.
6285*
PERERA, D.R.
7010
PERIER, E.A.
6998
PERLAK, G.J.
6378*
PERREN, S.M.
6627
PERRIN, J.
6371
PETERMANN, H.D.
6801
PETERS, M.A.
6420*
PETTAVEL, J.
6747
PETTERSON, G.
6596
PEYCELON, R.
6678
PFEIFER, U.
6774*
PFORDTE, K.
6369
PHILIP, H.M.
6685*
PIASCO, D.
6568
PICCONE, V.A.
6579*
PICHLER, H.
6538
PICK, R.
6864
PIETRA, P.
6361
PIETRON, K.
6647
PIGNEUX, A.
6562
PIHL, A.
6340
PIPER, D.W.
6613*
PISANO, J.C.
6427*
PLAS, C.
6483

ESSIS, J.L.
6332
CHEDLY, C.
6540
LEY, F.
6923
LIN, S.G.
6725
LL, P.
6693*
LTER, D.E.
6612*
NTREMOLI, S.
6290*
POVIC, S.
6768*
PPER, H.
6846, 6895
TET, F.
6676
TTER, V.R.
6287*
ULSEN, H.
6776*, 6929*
UYET, J.
6337
VER, W.F.R.
6685*
WELL, L.W.
6833*
WELL, S.J.
7011, 7021
WERS, J.J.
6532
EISIG, R.
6471
IBILLA, W.
6651
ICE, J.B., JR.
6897
INCE, A.M.
6518*, 6864
IOR, C.
6535
IOTON, J.B.
6825
ITHAM, H.G.
6725
OLLA, J.C.
6534
YOR, H.
6522*
DVAN, W.R.
6668
RCHASE, I.F.H.
6769*
AADE, F.
6888
INTON, A.
6562
COUCHOT, J.
6724
DOJKOVIC, J.
6324
HMOUNI, D.
6822
ITH, L.
6739
RAJASURIYA, K.
6780
RAMSOE, K.
6471, 6880*
RANEK, L.
6881*, 6890
RANGANADHAM, H.
6643
RANGEL, D.M.
6763*
RAPPAPORT, A.M.
6805
RAPPAPORT, H.
6734
RATIU, C.
6636
RAUSIS, C.
6738, 6744
RAY, T.K.
6428*, 6447*
READ, J.B.
6328
REBER, H.A.
6412*
RECZKO, E.
6955
REDING, R.
6633
REDDY, B.R.
6643
REHBEIN, F.
6717
REHFELD, J.F.
6882*
REHM, W.S.
6390
REID, E.
6832*
REID, I.M.
6830*
REIGEL, D.H.
6408
REINAUER, H.
6422*
REINICKE, V.
6860*
REINIKAINEN, M.
6692
REISLER, D.M.
6865
REISLER, E.
6337
REISER, S.
6348*
RELLER, L.B.
6973
RE MINE, S.G.
6730*
REUBER, M.D.
6818
REUSSER, F.
6469
REUTTER, W.
6845
REYES, E.L.
6682
REYNOLDS, T.B.
6788, 6894
RICHARDSON, S.H.
6513
RICHTER, G.W.
6813
RIKER, W.L.
6586
RIVERA, A.
7014
RIVERA, R.A.
6847
ROBERTSON, J.D.
6789
ROBINOWITZ, M.
6847
ROBINSON, L.A.
6521*
ROBINSON, N.M.
6981
ROBST, P.
6454*
ROCHAT, R.
6973
RO-CHOI, T.S.
6781*
RODL, W.
6726
ROE, F.J.C.
6515
ROESCH, W.
6641
ROSE, T.F.
6697
ROSEN, H.
6392*
ROSS, P.J.
6668
ROSSI, P.
6544
ROSSLER, R.
6854*, 6871
ROTH, F.J.
6576
ROTH, H.
6653
ROTHSCHILD, M.A.
6902
ROZE, C.
6387, 6416
ROZEN, P.
6858*
RUBIDGE, C.J.
7021
RUCHTI, C.
6575
RUDERMAN, N■B.
6425*
RUDIGER, W.
6457
RUDIGIER, J.
6845
RUDLER, J.C.
6754
RUDNEY, H.
6426*
RUDOLPH, N.
6446*
RUEFF, B.
6780*

RUOZI, P.
6922
RUZICKA, F.F., JR.
6544
RYAN, M.L.
6658•
RYNICKI, P.V.
6756, 6758
RYTOMAA, T.
6503, 6504
SAEGESSER, F.
6745, 6747
SAILER, S.
6550
ST, JOHN, D.J.B.
6614•
SAKAGAMI, K.
6786
SAKURAI, T.
6959
SAMAJA, U.
6491
SAMUEL, I.
6806
SANADIZADEH, S.M.
6852
SANCES, A., JR.
6408
SANDERS, E.M.
6310•
SANDSTROM, B.
6319
SANO, I.
6829
SANTAMBROGIO, C.
6491
SANYAL, N.N.
6298•
SARCIONE, E.J.
6450•
SARKAR, N.K.
6462, 6468
SASAGAWA, T.
6284•
SASAKI, T.
6816
SASANO, N.
6749•
SATO, T.
6959
SATYANAND
6719
SAUBIER, E.
6594
SAUGER, F.
6861
SAWA, A.
6572
SAWYERS, J.L.
6710, 6987
SCALI, P.
6676
SCHACHTER, H.
6734
SCHAEFER, J.W.
6809
SCHAFFNER, F.
6849
SCHAMAUN, M.
6590, 6723
SCHAPIRA, F.
6818
SCHEFFLER, G.
6968
SCHENK, W.G., JR.
6510
SCHEUER, P.J.
6778•
SCHICKEDANZ, H.
6624
SCHIER, J.
6673
SCHILDBERG, F.W.
6824
SCHIMA, E.
6381•
SCHIMMEL, R.J.
6486
SCHIODT, T.
6880•, 6881•
SCHMAHL, D.
6837
SCHMAHL, F.W.
6421•
SCHMAUSS, A.
6923
SCHMID, E.
6814
SCHMIDT, A.
6362
SCHMIDT, H.
6601
SCHMIDT, H.A.
6875•
SCHMIDTMANN, W.
6838
SCHMITZ-MOORMAN, P.
6976
SCHNEIDER, H.E.
6751
SCHOOR, W.P.
6413•
SCHREIBER, S.S.
6902
SCHREIBER, W.M.
6789
SCHROEDER, E.T.
6876•
SCHROEDER, S.A.
6992
SCHULMAN, N.H.
6725
SCHULTHEISS, H.R.
6627
SCHULTIS, K.
6952
SCHULTZ, M.G.
7010
SCHUSTER, H.
6605
SCHWARTZ, A.
6391
SCHWARTZ, H.
6589
SCHWARTZ, M.
6954
SCHWARTZ, S.
6342
SCHWARTZ, S.I.
6804
SCHWARZ, H.
6886
SCHWARZ, P.
6702
SCOTT, A.J.
6463
SCOTT, R.B.
6331
SCRAGG, J.N.
7011, 7021
SCRIABINE, A.
6378•
SCWARTZ, R.
6438•
SEED, J.R.
7018
SEFTEL, H.
6945•
SEGE, D.
6721
SEIFART, K.H.
6451•
SEKERIS, C.E.
6451•
SENFT, H.H.
6639
SEREBRO, H.A.
6942•
SESTOFT, L.
6882•
SHABETAI, R.
6809
SHAFFNER, F.
6846
SHAFRIR, E.
6425•
SHARMA, S.
6524
SHEAHAN, D.G.
6672•
SHEAT, J.
6587
SHEFT, D.J.
6714
SHEHATA, A.H.
6966
SHERLOCK, S.
6526, 6764•, 6778•
6784, 6901
SHIMADE, K.
6485
SHIMAI, K.
6330
SHIMAKAWA, T.
6733
SHIMIZU, Y.
6366
SHIMOJO, T.
6464
SHINOZUKA, H.
6830•
SHORE, J.D.
6436•
SHORE, J.M.
6557

ORTER, R.G.
6730*
YSH, A.
7003
DRANSKY, H.
6830*
EGEL, J.H.
6903
ERRALTA, W.
6934*
EW, F.P.
6342
EW, S.
6342
INA, H.
6384
KA, J.
6579*
LAH, J.G.
6430*
MKIN, E.P.
6599
MMONS, R.L.
6740
MON, G.
6350*
MON, N.
6839
MPSON, M.V.
6474
MPSON, R.T.
6329
NGH, I.
6306*
NN, I.
6480
RCUS, W.
6736
TAR, D.S.
6509
ZONENKO, P.C.
6402
IBRE, G.
6952
ILLEN, A.W.
6309*
EISENGER, M.H.
6783
OTH, K.
6900
ETANA, K.
6765*
ITH, A.D.
6989
ITH, J.M.
6618
ITH, M.G.M.
6766*
ITH, M.W.
6372
ART, R.S.
6298*
BER, H.A.
6329
BORG, M.
6877*, 6881*
LEYMANI, Y.
6540
SOLIN, M.
6296*
SOLING, H.D.
6794
SOMEYA, N.
6516*
SOS, J.
6350*
SOUCHARD, M.
6416
SPENCER, F.C.
6991
SPENCER, R.J.
6730*
SPENCER, R.P.
7015
SPIEGEL, E.S.
6318
SPIEGEL, M.
6318
SPIRO, H.
6606
SPIRO, H.M.
6930*, 6932*
SPITZ, L.
6711
SPRINZ, H.
6672*, 6969
SREENIVASAN, A.
6291*
SRINIVASACHARI, P.
6643
STADELMANN, O.
6537, 6539
STAIB, W.
6422*
STANCIU, T.
6872
STARZL, T.E.
6792
STAUDT, U.
6417
STEINHOFF, D.
6775*
STELL, P.M.
6599
STEPHEN, S.J.
6598
STEPHENSON, W.B.
6981
STERNBERG, D.
6432*
STERNS, E.E.
6505
STEVENS, K.
6945*
STEWART, G.J.
6928*
STILL, W.J.S.
6331
STILLE, W.
6984
STIRNEMANN, H.
6679
STIRPE, F.
6317, 6466, 6821
STOJANOVIC, V.K.
6924
STOLTERFOHT, C.A.
6814
STORMER, B.
6422*
STORRING, F.K.
6802
STRAHLER, F.
6480
STRECKER, H.J.
6431*
STREET, B.W.
6444*
STUTINSKY, F.
6482
SUBBAIAH, P.V.
6492*
SUGIMURA, T.
6610*
SUKLA, R.N.
7020
SULLIVAN, R.H.
6543
SUMMERSKILL, W.H.J.
6409*
SUN, D.C.H.
6658*, 6760
SUSTEN, S.S.
6441*
SUZUKI, H.
6304*
SUZUKI, S.
6517*
SZABO, E.
6338
SZMUNESS, W.
6864
TAKADA, T.
6516*
TAKAFUJI, T.
6958
TAKAGI, K.
6516*
TAKAHASHI, K.
6786
TAKAHASHI, R.
6983
TAKAYAMA, S.
6610*
TAKEGAWA, S.
6982
TAKEKOSHI, T.
6516*
TAKEMOTO, T.
6517*, 6553, 6559
TAKEUCHI, A.
6672*
TAKITA, T.
6666, 6826
TALKE, H.
6421*
TALLEY, R.W.
6682
TAMBAKU, S.N.
6720
TAMBIAH, R.
6482
TANAKA, N.
6376

TANAKA, T.
6637
TANNOCK, G.W.
6512
TARNAY, T.J.
6588
TATSUZAWA, S.
6958
TAUBER, J.
6471
TAVERNIER, J.
6562
TAYLOR, C.B.
6423*
TENCONI, L.
6491
TEN HOVE, W.
6768*
TERHO, T.
6659*
THEKADI, R.J.
6996
THELEN, M.
6838
THEMANN, H.
6293*
THENABADU, P.N.
6750
THEODOSSIOU, A.
6345
THIEMANN, K.J.
6798
THIERREE, R.A.
6656
THIERS, H.
6724
THODE, I.
6639
THOMAS, M.
6523*
THOMFORD, N.R.
6917
THOMSEN, A.C.
6891
THOMSON, J.W.W.
6713
THONGBHOUBESRA, T.
6396*
TIBBLIN, S.
6510
TILZ, G.P.
6550
TINBERG, H.M.
6305*
TIPTON, K.F.
6335
TISSOT-FAVRE, A.
6884
TOD, R.
6656
TOEWS, C.J.
6425*
TOMARU, T.
6581
TOMASI, V.
6428*, 6447*
TOSKES, P.P.
6412*
TOWNSEND, H.R.A.
6522*
TRAMMELL, S.W.
6660
TRANIELLO, S.
6290*
TRAUTMAN, W.J., JR.
6630
TREIBER, W.
6611*
TRONCONE, L.
6755
TRUITT, E.B., JR.
6851
TSUNEOKA, K.
6553
TUMEN, H.J.
7001
TYGSTRUP, N.
6362, 6471, 6657*,
6877*, 6880*, 6881*,
6899, 6900
UCHIDA, I.
6581
UEBERSAX, R.
6688
UEDA, T.
6666
UNGEHEUER, E.
6703
UNGVARY, G.
6753
URAGODA, C.G.
6598
URETA, T.
6324
UTSUMI, I.
6376
VAILLE, C.
6416
VALCIC, M.
6432*
VALENTE, U.
6535
VAN CITTERS, R.L.
6499*
VANDENBROUCKE, J.
6953
VAN DER WATT, J.J.
6769*
VAN HAELST, U.
6771*
VAN KAICK, G.
6576
VARIAKOJIS, D.
6536
VARNER, P.
6671*
VARONOS, D.
6388, 6389
VASKO, J.S.
6917
VATNER, S.F.
6499*
VAUGHAN, G.E.R.
6505
VAUGHAN, J.P.
6810
VAZ DIAS, H.
6292*
VEDRENNE, C.
6822
VEGA, P.
6470
VEITH, F.J.
6611*
VENNES, J.A.
6563
VERSTRAETE, M.
6953
VESELY, K.T.
6937*
VESTLING, C.S.
6336
VIALLET, A.
6879*
VIDELA, L.
6439*
VILLAREJOS, V.M.
7014
VILLAR-VALDES, H.
6392*
VILLEE, C.A.
6453*
VISAKORPI, J.K.
6689
VOGT-MOYKOPF, I.
6604
VOLLMAR, D.
6950
VOLPE, P.
6431*
VON BASSEWITZ, D.
6293*
VON LICHTENBERG,
7004*
VON LOH, D.
6386
VON WOLFF, C.
6680
VOORHEES, A.B., J
6897
VOSSSCHULTE, K.
6752
VREELAND, I.
6425*
WACHTER, J.
6639
WAGNER, E.
6752
WAISMAN, H.A.
6968
WALLINDER, L.
6502*
WALLIS, P.G.
6691
WALLOSCHEK, C.
6396*
WALSH, R.T.
6455
WALSHE, J.M.
6811
WALSMANN, P.
6415
WALZ, A.
6651

NG, F.L.
6438*
NKE, M.
6604
RD, P.
6657*
RDEN, H.E.
6588
RIDEL, D.
6744
RNER, O.G.
6795
TABE, N.
6625
TANABE, T.
6355*
TKINS, E., JR.
6852
X, J.
6671*
XMAN, S.
6375
Y, L.W.
6397*
YLONIS, G.W.
6532, 6533
BER, M.
6840
IDENMULLER, R.
6340
INBERGER, I.
6923
ISS, H.
6988
IST, F.
6814
LCH, R.M.
6449*
LLERS, G.
6360
RNER, H.
6580*
SCH, H.
6979
STERGAARD, H.
6471, 6880*
STERN, K.A.
7010
TTERFORS, J.
6629
EELER, J.W., JR.
6612*
ITE, L.W.
6426*
ITE, T.T.
6521*, 6746
CK, A.N.
6465
CK, T.
6396*
OMER, A.
6716, 6985
EDEMANN, B.
6511
JESEKERA, W.K.M.P.L.
6759
JESUNDERA, C.DE S.
6759
WIKMAN, J.
6817
WILDNER, G.P.
6687
WILL, G.
6357*
WILLE, L.
6856*
WILLIAMS, R.
6766*
WILLIAMS, R.J.
6392*
WILLIAMSON, R.
6312
WILLICH, E.
6960
WILLMS, B.
6794
WILSON, P.R.
6868
WINANS, C.S.
6534
WINDER, C.V.
6671*
WINKEL, P.
6899
WINKLER, K.
6362, 6929*
WINSHIP, D.H.
6395*
WINSLOW, P.R.
6611*
WINTER, M.
6350*
WITTE, C.L.
6904
WITTE, M.H.
6904
WITTE, S.
6546
WOLF, G.
6494*
WOLF, M.
6687
WOLF, R.H.
6939*
WOLFF, E.
6980
WOLFF, G.
6628
WOLFF, H.
6565
WONG, J.
6607*
WOODCOCK, N.A.
6438*
WOOLES, W.R.
6472
WORMSLEY, K.G.
6398*
WRIGHT, R.
6867
WUHRMANN, F.
6893
WUNDISCH, H.
6593
YADAV, S.B.
7020
YAGI, K.
6777*, 6848
YAJIMA, H.
6569
YAMADA, G.
6652
YAMADA, R.
6982
YAMAMOTO, I.
6982
YAMANAKA, N.
6325
YAMANO, K.
6975
YAMANO, T.
6300*
YAMANOUCHI, M.
6666
YAMASAKI, H.
6294*
YANAGI, S.
6831*
YANI, K.
6325
YASUNOBU, K.T.
6485
YASUTOMI, T.
6637
YATVIN, M.B.
6458
YEN, T.S.
6964
YOKOTA, Y.
6666
YOSHIOKA, Y.
6368
YOW, M.D.
6981
YU, F.L.
6424*
ZACHARIAE, F.
6889
ZACHMAN, J.O.
6917
ZAKI, A.H.
6966
ZARATE, J.R.
6729
ZATERKA, S.
6542
ZEHNDER, P.R.
6660
ZIEGLER, K.
6799
ZIMMER, G.
6301*
ZIMMERER, J.
6979
ZIMMERMAN, B.
6588
ZIMMERMAN, H.J.
6858*, 6988
ZUIDEMA, G.D.
6585
ZUMTOBEL, V.
6574
ZWACKA, G.
6624
ZWEYMULLER, E.
6583

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

ABDOMEN
    ACUTE, ASCARIASIS, PANCREAS (7007)
    ACUTE, LESIONS, AMMONIA, ULCER (6572)
    ATONIA, SURGERY, PREOPERATIVE PREPARATION (6977)
    BILHARZIASIS, EPIDEMIOLOGY, METEORISM (7008)
    EMERGENCY, METHEMALBUMIN, PANCREATITIS (6940)*
    ENTEROCOLITIS, CARDIOVASCULAR, STENOSIS, METEORISM (6947)
    FEVER, LYMPHOGRANULOMATOSIS, IRRADIATION, HODGKIN'S DISEASE (6539)
    MASS, NEONATE, RADIOLOGY (6963)
    PAIN, AMPULLA OF VATER OBSTRUCTION, PANCREAS (6916)
    PAIN, CARCINOMA, PANCREAS, STEATORRHEA (6739)
    PAIN, DYSPEPSIA, ULCER, PANCREATITIS (6551)
    PAIN, LIPOMA, OCCLUSION, HEMORRHAGE (6676)
    TRAUMA, DUODENAL, ADRENAL GLAND, PANCREAS (6541)
ABSCESS
    AMEBIC LIVER, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
    AMEBIC LIVER, RUPTURE, PREGNANCY (7012)
    AMEBIC, LIVER, SCAN (7016)
    HEPATIC AMEBIC, HEALING RATE, SCAN (7015)
ABSORPTION
    CALCIUM, INTESTINE, VITAMIN D3 (6355)*
    CALCIUM, PARATHYROID GLANDS (6350)*
    FRUCTOSE, GLUCOSE, SERUM FREE FATTY ACID, TRIGLYCERIDES (6358)*
    GASTROINTESTINAL, POLYMERS, DRUGS (6376)
    GLUCOSE, JEJUNAL LOOP, WATER, NA, CL (6367)
    INTESTINAL, BLOOD FLOW (6364)
    INTESTINAL, RAT, AMINO ACIDS (6360)
    INTESTINE, SODIUM, AMINO ACID (6349)*
    IRON, AMINO ACID, CYSTEINE, METHIONINE (6353)*
    IRON, SUCCINIC ACID (6357)*
    IRON, VITAMIN B12, ATROPHIC GASTRITIS (6651)
    LIVER, TUMOR, K+, RB+ (6354)*
    SMALL INTESTINE, PROTEOLYTIC ENZYME (6368)
    STOMACH, INTESTINE, ISONIAZID (6366)
    VITAMIN B12, MALABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
ACETYLCHOLINE
    SECRETION, PANCREATIC, BILIARY, REGULATOR (6416)
ACETYLCHOLINESTERASE
    HIRSCHSPRUNG'S DISEASE, PERISTALSIS (6717)
ACHALASIA
    ESOPHAGEAL, HYPERMOTILITY, SPASM, SPHINCTER (6601)
ACID
    SECRETION, GASTRIC, HISTALOG (6396)*
    SECRETION, STOMACH, ANTICHOLINERGICS, HISTALOG (6612)*
ACIDITY
    GASTRIC, AGE, HISTAMINE, MICE (6407)
ADDICTION
    AUSTRALIA, ANTIGEN, VIRAL, HEPATITIS (6860)*
    VIRAL, HEPATITIS (6857)*
ADENOCARCINOMA
    PANCREAS, ISLET CELL, VATER'S PAPILLA, ANEMIA (6744)
    STOMACH, EPITHELIAL CELLS, N-METHYL-N'-NITRO-N-NITROSOGUANIDINE (6610)*
ADHESION ILEUS
    PROPYLIODON, ABDOMINAL, OPERATION, PERISTALSIS (6574)
ADRENAL
    RESECTION, ALPHA-IRRADIATION, RNA POLYMERISE, LIVER NUCLEI (6458)
ADRENALECTOMY
    CORTISOL, PYRIDOXINE, FETAL RAT LIVER (6441)*
ADRENERGIC BLOCKING AGENT
    LIVER, AMINOTRANSFERASE, PHENTOLAMINE, PROPRANOLOL (6435)*
    PHENOXYBENZAMINE, PROPRANOLOL, MESENTERIC FLOW (6499)*
ALBUMIN
    BILIRUBIN, BINDING, KERNICTERUS (6770)*
    LIVER TURNOVER, CIRRHOSIS, SYNTHESIS (6880)*
    SERUM, CLEARANCE, PERITONEUM, FLUID FLUX, RABBIT (6373)
    SERUM, RADIOACTIVE GASTRIN, ELECTROPHORESIS, BLOOD (6402)
ALCOHOL
    ALCOHOLISM, BIOCHEMICAL LESION (6851)
    CIRRHOSIS, ASCITES, SURGERY (6906)
    CIRRHOSIS, LIVER, BLOOD GROUP (6890)
    GLYCEROL, INCORPORATION, LIVER SLICE (6442)*
    HEPATITIS, LIVER, FATTY LIVER (6846)
ALCOHOL DEHYDROGENASE
    COMPLEX, COENZYME, PYRAZOLE, KINETICS, BINDING (6436)*
ALPHA-FETOPROTEIN
    VIRAL, HEPATITIS, TUMOR, CORTICOTHERAPY, REGENERATION (6861)
AMINE
    GALACTOSAMINE HEPATITIS, OROTATE, LIVER (6845)
    HISTAMINE, 5-HYDROXYTRYTAMINE, DOPAMINE, GASTRIC MUCOSA (6404)
    HISTAMINE, GASTRIC ACIDITY, AGE, JUICE (6407)
    HISTAMINE, MAST CELLS, HISTOCHEMISTRY (6330)
    HISTAMINE, PENTAGASTRIN, GASTRIC FISTULA (6406)
    PHOSPHATIDYLETHANOL-, METABOLISM, ETHANOLAMINE, MOUSE (6487)
    STORING CELLS, GASTRIC MUCOSA, STAINING (6285)*
AMINO ACID
    ALANINE, LIVER, GLUTAMATE, OXOGLUTACATE, GUINEA PIG (6475)
    ESSENTIAL, ABSORPTION (6360)
    GASTRIC MUCOSA, CHIEF CELL, PRODUCTION (6288)*

  INTESTINAL TRANSPORT, CARBOHYDRATES (6363)
  INTESTINE, TRANSPORT, GOLDFISH (6372)
  IRON ABSORPTION, VEGETABLE, CYSTEINE, METHIONINE (6353)*
  LIVER, FIBRINOGEN SYNTHESIS, HORMONE, FAST, THROMBIN (6473)
  METHIONINE, CHANG'S LIVER CELLS, CELL, PROTEIN (6431)*
MONIA
  PERITONEAL FLUID, ACUTE, ABDOMEN (6572)
PULLA OF VATER
  CARCINOID, VON RECKLINGHAUSEN'S DISEASE (6726)
  DUODENOSTOMY, JEJUNOSTOMY, DUODENAL ULCER (6561)
  ENDOSCOPY, PANCREATOGRAPHY, PANCREOZYMIN (6516)*
  OBSTRUCTION, ABDOMINAL PAIN, PANCREAS (6916)
YLASE
  INTESTINE, RAT, ISOLATION, CHARACTERIZATION (6296)*
  PANCREATIC, PROPERTIES, STARCH, DIET (6418)
LGESIC
  ASPIRIN, GASTROINTESTINAL BLEEDING (6993)
  ASPIRIN INGESTION, PEPTIC ULCER (6661)
STOMOSIS
  ESOPHAGEAL ATRESIA (6596)
  ESOPHAGOGASTRIC, RECONSTRUCTION, SINGLE-LAYERED, GASTRIC MUCOSA (6589)
  ESOPHAGOJEJUNAL, GASTRECTOMY, RESECTION (6631)
  ESOPHAGUS (6592)
  ESOPHAGUS, ATRESIA (6597)
  GASTRODUODENAL, VAGOTOMY, ANTRECTOMY, RADIOLOGY (6648)
  PORTACAVAL, CIRRHOSIS, ADHESIONS, PORTAL HYPERTENSION (6887)
  PORTACAVAL, LIVER, WEIGHT, FOOD (6933)*
  PORTAL HYPERTENSION (6785)
  PORTAL HYPERTENSION, SHUNT SURGERY, CIRRHOSIS (6784)
  PORTAL SYSTEMIC SHUNT, HEPATIC CIRCULATION (6788)
MIA
  HEMOLYTIC, HEMANGIOENDOTHELIOMA, LIVER (6819)
  HOOKWORM, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
  HYPOCHROMIC, THROMBOSIS, HERNIA, ULCER (6595)
STHESIA
  HALOTHANE, FULMINANT HEPATIC NECROSIS (6847)
  LIVER, CIRCULATION (6843)
  LIVER, HYPOTENSION, HYPOTHERMIA, TOXIC (6840)
URYSM
  ARTERY, HEPATIC (6824)
  BILIARY TRACT, HEPATIC ARTERY, GASTRODUODENAL ARTERY, POST-OPERATIVE (6822)
  HEPATIC, ARTERY, BILIARY TRACT (6822)
ANOMALY
  CONGENITAL, ANORECTAL, SURGERY (6719)
  CONGENITAL DIAPHRAGMATIC OCCLUSION, DUODENUM (6650)
  SMALL INTESTINE, MALROTATION, VOLVULUS, RADIOLOGY (6949)
  TRACHEOESOPHAGEAL FISTULA, ESOPHAGEAL ATRESIA, SURGERY (6588)
ANORECTUM
  MELANOBLASTOMA, HEMORRHOIDS, MALPIGHIAN, MUCOSA (6724)
ANTACID
  AMYLOPECTIN SULFATE, ULCER, DUODENUM (6658)*
ANTIBIOTIC
  CYCLOHEXIMIDE, SODIUM FLUXES, CHOLERA, EXOTOXIN (6942)*
  GASTROINTESTINAL TRACT, CANDIDA ALBICANS, STEROIDS, CYTOSTATIC (6982)
  NEOMYCIN, PENICILLIN, COLON, IRRADIATION (6930)*
  NYSTATIN, NEOMYCIN, FATTY ACID, CECUM, RAT (6512)
  PUROMYCIN, ULTRASTRUCTURE, POLYRIBOSOMAL DISAGGREGATION (6830)*
  TIRCINDAMYCIN, LIVER, MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, RAT (6469)
ANTIBODY
  ECHO VIRUS, NASO PHARYNX, SPINAL FLUID (6931)*
ANTICHOLINERGIC
  NACTON, ROBINUL, ACID, HISTALOG (6612)*
  PROPANTHELINE BROMIDE, ULCER, DUODENUM (6658)*
ANTIGEN
  AUSTRALIA, ACUTE VIRAL HEPATITIS, LIVER (6867)
  AUSTRALIA, HEPATITIS, CIRRHOSIS, CANCER (6778)*
  AUSTRALIA, HEPATITIS, EPIDEMIOLOGY, VIROLOGY, CARRIER STATE, DOWN'S SYNDROME, MENTAL RETARDATION (6864)
  AUSTRALIA, PLASMA, SERUM GLUTAMIC OXALACETIC TRANSAMINASE, HEPATITIS CARRIER (6862)
  AUSTRALIA, TRANSFUSION, HEPATITIS (6863)
  BLOOD GROUP A, GOBLET CELLS (6310)*
  SH, SERUM HEPATITIS, IMMUNO ELECTROOSMOPHORESIS (6518)*
  SKIN REACTIVE, CANCER, COLON, RECTUM, TUMOR (6694)*
ANTI-HISTAMINE
  GASTRIC ULCER, GASTRIN, AMINOGUANIDINE (6615)*
ANTI-INFLAMMATORY
  FLUFENAMIC ACID, ULCEROGENESIS, SMALL INTESTINE (6671)*
ANTRUM
  PYLORIC, PREPYLORIC, ENDOSCOPY, MUCOSA (6638)
ANUS
  ANORECTAL ANOMALIES, CONGENITAL, SURGERY (6719)
  IMPERFORATE, ANO-RECTAL RINGS (6778)

  MALIGNANT MELANOMA, RECTUM (6727)
  SPHINCTER, ELECTROMYOGRAPHY (6532). (6533)
APPENDICITIS
  CHRONIC, ETIOLOGY, RADIOLOGY, ANATOMOPATHOLOGY (6700)
  CHRONIC, LYMPHOCYTE, APPENDECTOMY (6721)
  PUERPERIUM, ACUTE, SURGERY, UTERUS (6702)
APPENDIX
  APPENDECTOMY, AGE (6711)
  APPENDICITIS, PEPTIC ULCER, DIVERTICULITIS (6961)
  CARCINOID TUMOR, ILEUM, RECTUM (6972)
  DIVERTICULOSIS, APPENDICITIS, SURGERY (6718)
  MUCOCELE, EXTRACECAL, ILEOCECAL, TUMOR (6726)
  TAENIA INFESTATION (7013)
ARGININE MALATE
  ALCOHOLIC, CIRRHOSIS, AMMONIEMIA (6884)
ARTERY
  HEPATIC, ANEURYSM (6824)
ASCITES
  ALCOHOLIC CIRRHOSIS, SURGERY, LIVER (6906)
  CIRRHOSIS, CORTICOIDS, DIURETICS, HEMODILUTION (6885)
  CIRRHOSIS, MANAGEMENT, HEPATIC COMA, DIURETICS (6901)
  CIRRHOSIS, PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION (6894)
  LIVER, CIRRHOSIS, SURGERY (6797)
ASPIRIN
  BLOOD LOSS, PERNICIOUS ANEMIA, GASTRIC MUCOSA (6614)*
ATONIA
  SURGERY, ACUTE, LAPAROTOMY, MOTILITY (6977)
ATP
  HEPATOCARCINOGENESIS, MITOCHONDRIA, MICROSOME, ETHIONINE (6812)*
ATRESIA
  ESOPHAGEAL, INFANT, COLON, TRANSPLANT (6583)
ATROPINE
  MESENTERIC, ARTERY POSTPRANDIAL, DILATION (6499)*
AUTOIMMUNOLOGY
  HEPATITIS, CHRONIC, COLLAGEN DISEASE, CIRRHOSIS (6871)
AUTONOMIC GANGLIA
  LARGE, INTESTINE, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*

AZATHIOPRINE
  CHRONIC, HEPATITIS, IMMUNOSUPPRESSIVE (6874)
  CIRRHOSIS, THERAPY (6681)*
BACTERIA
  AEROMONAS HYDROPHILA, ENTERITIS, UNCOOKED, FOOD, TOURISTS (6904)
  CECUM, ANEROBIC, FUSOBACTERIUM, EUBACTERIA, CLOSTRIDIUM (6947)*
  CECUM, FATTY ACID, ANTIBIOTIC, RAT (6512)
  INTESTINAL, BONE MARROW CELL PROLIFERATION (6503)
  INTESTINAL, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
  MICROFLORA, GROWTH, X-IRRADIATION, ICR MICE (6932)*
  PROLIFERATION, COLON, ANTIBIOTICS (6930)*
  SALMONELLA, EPIDEMIOLOGY, TYPHOID FEVER, FOOD POISONING (6314)
  SALMONELLA TYPHIMURIUM, INTESTINE, NON-NEOPLASTIC DISEASE (6969)
  TUBERCOLOSIS, ESOPHAGUS, RADIOLOGY (6600)
  TUBERCULOUS ENTERITIS, COLON SURGERY (6987)
BACTERIAL DISEASE
  SALMONELLOSIS, IMMUNOLOGY (6943)*
  SALMONELLOSIS, INTESTINE, IMMUNOLOGY (6944)*
BIGUANIDE
  STEATOSIS, PLASMA, LIPIDS, LIPOPROTEIN (6800)
BILE
  ACETYLCHOLINE, REGULATOR MECHANISM (6416)
  ACID, SALT, LIVER EXCRETION, PERFUSED LIVER (6362)
  BILIRUBIN, FETUS, SHEEP (6456)
  CONJUGATED ACID, GLYCOCHOLIC ACID, 7 ALPHA-DEHYDROXYLATION (6419)*
  IMMUNOGLOBULIN, A, G, M, MONKEY (6939)*
  LIVER, HOMOTRANSPLANT, HOST (6826)
  SPHINCTER OF ODDI, FLOW RESISTANCE, VAGOTOMY (6382)*
BILE ACID
  CONJUGATION, 7 ALPHA-DEHYDROXYLATION, GLYCOCHOLIC ACID (6419)*
  GLYCOCHOLIC ACID, METABOLISM, GASTRECTOMY (6608)*
BILE DUCT
  ENDOSCOPY, GALLSTONES, HEPATOMA (6519)*

  EXTRAHEPATIC BILE DUCT, GALLBLADDER, ADENOMA (6914)
  GALLBLADDER, BIOPSY, JAUNDICE (6575)
  GALLBLADDER, POLYARTERITIS NODOSA (6915)
  INFECTION, TETRACYCLINE, THERAPY, EXCRETION (6922)
  INTRAHEPATIC, ANEURYSMAL DILATION, SURGERY, CHILDREN (6808)
  INTRAHEPATIC, BENIGN, CHOLANGIOMA, HAMARTOMA (6798)
  OBSTRUCTIVE JAUNDICE, LITHIASIS, ULCER, DYSPEPSIA (6547)
  ODDI'S SPHINCTER, MORPHINE, RESIDUAL PRESSURE (6927)
  PYLORIC ANTPUM, ULCER, ECTOPIC JUNCTION (6667)
  STONES, PAPILLARY STENOSIS, CHOLECYSTECTOMY, EMPYEMA (6912)
  TRACHEAL ALLOGRAFT (6917)
BILHARZIASIS
  EPIDEMIOLOGY, PARASITE, METEORISM, HEMATURIA (7008)
BILIARY TRACT

- CHOLEDOCHOTOMY, TRANSDUODENAL ROUTE (6913)
- CHOLESTASIS, ESTROGEN INDUCTION, PREGNANCY (6783)
- PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CARCINOMA, CHOLELITHIASIS (6554)
- PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CONTRAST MEDIA (6556)
- SURGERY, GASTRIC DECOMPRESSION (6646)
- YEASTS, CANDIDA ALBICANS, LAMBLIASIS (6919)

ILIRUBIN
- ALBUMIN, BINDING (6770)*
- CHOLERESIS, CHOLERETICS, SODIUM DEHYDROCHOLATE (6429)*
- CIRRHOSIS, ALBUMIN, ASCITES, PROGNOSIS (6899)
- CONJUGATION, ESTROGEN, BREAST-MILK JAUNDICE (6772)*
- FETUS, SHEEP (6456)
- LIVER FUNCTION, DYE UPTAKE, RIFAMYCIN SV (6454)*

IOPSY
- LIVER, CENTRILOBULAR SINUSOIDAL, CONGESTIVE HEART FAILURE (6929)*
- SUCTION, GASTRITIS, ATROPHIC, SUPERFICIAL, METAPLASIA (6609)

LOOD
- CELL, ULTRASTRUCTURE, ENDOTOXIC, SHOCK (6928)*

LOOD FLOW
- CELIAC ARTERY, SUPERIOR MESENTERIC ARTERY (6611)*
- ILEUM, INTRALUMINAL PRESSURE, ACETYLCHOLINE (6498)*
- MESENTERIC, POST-PRANDIAL (6499)*
- SUPERIOR MESENTERIC ARTERY, ACETYLCHOLINE, VENOUS EFFLUENT (6500)*

LOOD VESSEL
- ABDOMINAL SPLANCHNIC ARTERIES, COMMUNICATION, OCCLUSION (6953)
- HEPATIC ARTERY, ANGIOGRAPHY, PORTAL HYPERTENSION (6526)
- HEPATIC ARTERY, PERFUSION, ANTIMETABOLITES (6852)
- LIVER ARTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)

ONE MARROW
- DEPRESSIONS, VIRAL HEPATITIS, ANATOMOPATHOLOGY, CHILDREN (6056)*

OWEL
- MOTILITY, DROPERIDOL, MUSCLE, FENTANYL (6385)
- SPONTANEOUS PNEUMOPERITONEUM, RESECTION (6974)

ALCIUM
- ABSORPTION, INTESTINE, VITAMIN D3 (6355)*
- ABSORPTION, SECRETION, PARATHYROIDECTOMY (6350)*

ANCER
- COLON, POLYP, RADIOLOGY (6714)
- COLON, RECTUM, ANTIGEN, TUMOR (6694)*
- DUODENUM, DUODENOSCOPY, SCOPIC BIOPSY (6645)
- ESOPHAGUS, BLEOMYCIN (6603)
- ESOPHAGUS, STOMACH, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
- GASTRIC, GASTRO-FIBERSCOPE, BIOPSY (6545)
- GASTRIC, ULCER (6617)
- ISLET CELL TUMOR, VATER'S PAPILLA, ADENOCARCINOMA (6744)
- LIVER, GLYCOGEN, HISTOCHEMISTRY (6316)
- PRIMARY, LIVER, HEXAMETHYLMELAMINE (6796)
- RECTUM, RECTOSIGMOIDOSCOPY, POLYPS, OCCULT BLOOD (6520)*
- STOMACH, MESENCHYMAL, LYMPHORETICULOSARCOMA, POLYPOID (6655)

CANDIDIASIS
- ESOPHAGITIS, MALIGNANT, CHILDREN (6935)*

CAPILLARY
- PANCREATITIS, VASODILATATION, BRADYKININ, SEROTONIN (6753)

CARBOHYDRATE
- CONGENITAL LACTOSE MALABSORPTION, DUODENUM (6691)
- DISACCHARIDE INTOLERANCE, MALABSORPTION (6690)
- GLUCOSE TRANSPORT, SMALL INTESTINE, O2 AVAILABILITY (6361)
- GLUCOSE, XYLOSE, LIVER MICROSOME, DEHYDROGENASE (6465)
- GLUCOSYLATION, ACCEPTOR-LIPID, DOLICHOL (6307)*
- GLYCOGEN, LIVER, DAB CARCINOGENESIS HISTOCHEMISTRY (6316)
- GLYCOGEN STORAGE DISEASE, GARGOYLISM, LIVER BIOPSY, ENZYMATIC DIAGNOSIS (6531)
- GLYCOGEN SYNTHESIS, INHIBITION, LIVER (6470)
- INTESTINAL TRANSPORT, AMINO ACID (6363)
- LIVER GLYCOGEN, ISOLATION, SODIUM IOTHALAMATE (6331)
- METABOLISM, LIVER, NICOTINAMIDE (6421)*
- SUCROSE, SODIUM CYCLAMATE, SACCHARIN, CARCINOGENESIS (6515)

CARBON TETRACHLORIDE
- POISONING, HEPATIC COLLAGEN (6448)*

CARCINOGEN
- AZO DYE, BASOPHILIA, RNA (6303)*
- M-TOLUYLENEDIAMINE, LIVER, RAT (6827)
- SODIUM CYCLAMATE, SACCHARIN, SUCROSE (6515)

CARCINOGENESIS
- N-HYDROXY-2-ACETYLAMINOFLUORENE SULFOTRANSFERASE, PROTEIN-(METHION-S-YL) BINDING (6433)*

CARCINOMA
- ADRENOCORTICAL, EXTRA-PANCREATIC, HYPOGLYCEMIA, MESODERMAL (6747)
- ANAPLASTIC, INTESTINE, STOMACH, PANCREAS (6970)
- CERVIX UTERI, JAUNDICE, HALOTHANE (6833)*
- DUODENUM, INFRAPAPILLARY, PARATHYROID ADENOMA (6621)
- ESOPHAGEAL, ROTATORY IRRADIATION, PERFORATION, HEMORRHAGE (6580)*

- ESOPHAGUS, BETEL CHEWING, CEYLON (6598)
- GASTRIC, BENIGN POLYP (6622)
- GASTRIC, GASTROCAMERA, MUCOSA (6537)
- GASTRIC, GASTROSCOPY, CYTOLOGY (6546)
- HEPATIC, BILE DUCT, HILUM, SURGERY (6825)
- LARGE BOWEL, MAMMARY, RENAL, CHEMOTHERAPY (6708)
- LIVER, VASCULAR ANATOMY (6322)
- MALIGNANT, AMPULLA OF VATER, VON RECKLINGHAUSEN'S DISEASE (6726)
- PANCREAS, STEATORRHEA, GLUTEN-FREE DIET (6739)
- PRIMARY, LIVER, CIRRHOSIS (6806)
- PRIMARY, LIVER, CIRRHOSIS, JAPAN (6789)
- PRIMARY HEPATIC, ASCITES, JAUNDICE (6828)
- SIGMOID, PERIDIVERTICULITIS, STENOSIS (6703)
- STOMACH, GASTRIC JUICE, LACTIC ACID (6613)*
- STOMACH, OBSTRUCTION, DUODENAL ULCER TUBERCULOSIS (6634)
- STOMACH, RADIATION THERAPY (6625)
- STOMACH, RADIOGRAPHY (6555)
- STOMACH, SURGERY (6629)

CATION
- SODIUM, CALCIUM, MAGNESIUM, ADENYL CYCLASE (6428)*

CECUM
- ANEROBIC, CULTURES, PATHOGEN-FREE MOUSE (6497)*
- BACTERIA, FATTY ACID, ANTIBIOTIC, RAT (6512)
- FIBERCOLONOSCOPE, ILEOCECAL VALVE (6559)
- RECTUM, URINE, ROADRUNNER (6506)

CELIAC DISEASE
- OSTEOMALACIA, DIAGNOSIS (6685)*

CELL
- AUTOPHAGY, ATROPHY, GLYCOGEN (6774)*
- ENDOCRINE, DUODENUM, ULTRASTRUCTURE (6284)*
- LIVER, CHROMATIN, ETHIONINE (6345)
- MUCOUS, PARIETAL, CHIEF (6304)*
- REGENERATION, RECTUM, ULCERATIVE COLITIS, AUTORADIOGRAPHY (6731)*

CHOLANGIOGRAPHY
- BILE DUCTS, GALLBLADDER BIOPSY, JAUNDICE (6575)

CHOLANGIOMA
- CYSTIC, BENIGN, ANGIOGRAPHY, HAMARTOMA (6798)

CHOLECYSTECTOMY
- ANGINA PECTORIS, POST-OPERATIVE, ELECTROCARDIOGRAM (6924)
- CHOLESTEROL STONE, CHOLELITHIASIS
- RESECTION, ADHESIONS, ABSCESS, APPENDECTOMY (6951)

CHOLECYSTITIS
- CHOLELITHIASIS, MALE (6918)

CHOLECYSTO-GASTROSTOMY
- BILE DUCT, ULCER, PYLORIC ANTRUM, CHOLANGIOGRAPHY (6667)

CHOLECYSTOKININ
- PANCREOZYMIN, GASTRIN, HORMONES, OLIGOPEPTIDES (6333)
- STIMULATION, HISTIDINE DECARBOXYLASE, STOMACH, MUCOSA (6397)*
- STOMACH, EMPTYING, SECRETION, EFFECT (6379)*

CHOLECYSTOLITHIASIS
- ANGINA PECTORIS, MYOCARDIAL ISCHEMIA (6924)
- CHOLESTEROL, SODIUM DEHYDROCHOLATE, CLOFIBRATE, CHOLESTYRAMINE (6911)*
- CHOLINESTERASE, PROTEIN METABOLISM (6565)
- METABOLIC DISORDERS, DIABETIC (6923)
- OBSTRUCTIVE JAUNDICE, BILIARY-DUODENAL FISTULA, REFLUX (6547)
- PANCREATITIS, ACUTE, DELIVERY, FATTY NECROSIS (6751)
- SINGLE STONE, MULTIPLE CALCULI, LIVER DAMAGE (6925)
- SURGERY, CHOLECYSTECTOMY, CHOLEDOCHOTOMY (6912)

CHOLERA
- EXOTOXIN, SODIUM FLUXES, CYCLOHEXIMID (6942)*
- ORAL THERAPY, PAKISTAN (6973)
- TOXIN, ELECTROPHORETIC MOBILITY, FORMALIN (6514)
- VIBRIO, ENTEROTOXIN, BIOCHEMISTRY (6513)

CHOLERESIS
- BILIRUBIN, CHOLERETICS, SODIUM DEHYDROCHOLATE (6429)*

CHOLESTEROL
- BIOSYNTHESIS, 3-HYDROXY-3-METHYLGLUTARATE, MEVALONIC ACID (6426)*
- PLASMA, UNSATURATED FAT, DIETARY FACTOR (6352)*
- SYNTHESIS, GALLBLADDER, LIVER, ILEUM, GUINEA PIG (6463)

CHOLINE
- FATTY LIVER, PREVENTION, MYOINOSITOL (6777)*

CHOLINERGIC
- ACETYLCHOLINE, ILEUM, BLOOD (6498)*

CHOLINESTERASE
- LIVER, SERUM, CHOLELITHIASIS (6565)

CHROMATOGRAPHY
- GAS, MASS SPECTOMETRY, STEROIDS (6445)*

CIRCULATION
- ABDOMINAL SPLANCHNIC ARTERIES, COMMUNICATION, OCCLUSION (6953)
- ARTERIOVENOUS SHUNT, STOMACH, DUODEN PANCREAS, O2 CONSUMPTION (6507)
- ATHEROSCLEROSIS, GASTRIC ULCER, GASTRIC CARCINOMA, RADIOLOGY GERIATRICS (6620)
- BLOOD GROUP, CIRRHOSIS, LIVER, ALCOH (6890)
- BLOOD GROUPS, VIRAL, HEPATITIS, CIRRHOSIS (6937)*
- ESOPHAGEAL VARICES, MANAGEMENT (6582
- FIBRINOGEN, HEPATIC SYNTHESIS, HEPAT RELEASE (6455)
- FIBRINOGEN, SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
- HEPATIC, FIBROGENESIS, CIRRHOSIS (6395)

- HEPATIC, MEMBRANE TRANSPORT (6377)
- HEPATIC, PORTAL HYPERTENSION (6805)
- HEPATIC, PORTAL-SYSTEMIC SHUNT (6788)
- INTESTINAL ABSORPTION, BLOOD FLOW (6364)
- LIPOPROTEINS, MORRIS HEPATOMA (6762)*
- LIVER, ARTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)
- LIVER, ANESTHESIA (6843)
- LIVER, HEPATIC VENOUS OUTFLOW BLOCK, STRUCTURE (6802)
- LIVER, PORTAL HYPERTENSION, ARTERIOGRAPHY (6544)
- LIVER, POST-RESECTION (6791)
- LIVER FUNCTION, HIGH ALTITUDE (6471)
- LIVER INJURY, LYMPHATICS, CIRRHOSIS (6904)
- OXYHEMOGLOBIN DISSOCIATION CURVE, CIRRHOSIS (6903)
- PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION, CIRRHOSIS, ASCITES (6894)
- PLATELETS, CIRRHOSIS, LIVER, INPUT (6902)
- POLYARTERITIS NODOSA, BILE DUCT, GALLBLADDER (6915)
- PORTAL HYPERTENSION, ANGIOGRAPHY (6540)
- PORTAL HYPERTENSION, CIRRHOSIS, FATTY LIVER, HEPATOGENIC MYOCARDOSIS (6893)
- PORTAL HYPERTENSION, CIRRHOSIS, RENAL FAILURE (6898)
- PORTAL HYPERTENSION, ENDOSCOPY, ESOPHAGEAL VARICES (6907)
- PORTAL HYPERTENSION, HEPATIC ARTERY, ANGIOGRAPHY (6526)
- PORTAL HYPERTENSION, HYPERSPLENISM (7001)
- PORTAL HYPERTENSION, SHUNT SURGERY, CIRRHOSIS (6784)
- PORTAL HYPERTENSION, SURGERY (6785)
- PORTAL VENOUS SYSTEM, GAS, X-RAY, JEJUNUM (6989)
- RESISTANCE VESSELS, SPLEEN, INTESTINE, LIVER, ANGIOTENSIN, VASOPRESSIN (6509)
- SERUM HEPATITIS, AUSTRALIA ANTIGEN (6868)
- VASCULAR ANATOMY, LIVER, CARCINOMA (6322)
- VASCULAR OCCLUSION, COLON, RADIOLOGY (6704)
- VENOUS REVERSAL, LIVER, DOG (6508)

IRRHOSIS
- ACTIVE, BILIARY, AZATHIOPRINE (6881)*
- ALCOHOL, LIVER, ASCITES, SURGERY (6906)
- ALCOHOLIC, AMMONIEMIA, NEUROLOGICAL, HEMORRHAGE (6884)
- ALCOHOLIC, RENAL FAILURE, PORTACAVAL SHUNT (6826)*
- ASCITES, ALCOHOLIC, CORTICOIDS (6885)
- ASCITES, HEPATIC COMA, DIURETICS (6901)
- ASCITES, PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION (6894)
- ASCITES, SURGERY, ADRENALECTOMY (6797)
- BILIARY, IMMUNITY, HEPATITIS, COLLAGEN DISEASE (6871)
- CARDIAC OUTPUT, HYPERTENSION, ANASTOMOSES (6875)*
- COLON, MICROFLORA, ENCEPHALOPATHY, PORTACAVAL SHUNT (6941)*
- EEG, ENCEPHALOPATHY, ORNITHINE, ALPHA-KETOGLUTARIC ACID (6803)
- EPITHELIOID, GRANULOMA, LIPOGRANULOMA (6776)*
- HEMATOGENIC, INFECTIOUS, HEPATITIS (6886)
- HEMATOGENIC, INFECTIOUS, HEPATITIS, ULCER (6886)
- HEPATIC CIRCULATION, FIBROGENESIS (6895)
- HEPATIC COMA, URETEROSIGMOIDOSTOMY (6954)
- HEPATIC INJURY, CIRCULATION, LYMPHATIC (6904)
- HEPATOMA, LIVER (6829)
- LAPAROSCOPY, CRUVEILHIER-V. BAUMGARTEN SYNDROME, ESOPHAGEAL VARICES (6573)
- LIVER, ALBUMIN, BILIRUBIN, ASCITES, PROGNOSIS (6899)
- LIVER, ALBUMIN METABOLISM (6902)
- LIVER, ASCITES, PEPTIC ULCER, PREDNISONE (6900)
- LIVER, BLOOD GROUP, ALCOHOL (6890)
- LIVER, CARCINOMA, JAPAN (6789)
- LIVER, GERIATRICS (6905)
- LIVER, HEMORRHAGE, GASTRIC, DUODENAL (6889)
- LIVER, HEMORRHAGE, SURGERY (6909)
- LIVER, HEPATOGENIC MYOCARDOSIS, FATTY LIVER, PORTAL HYPERTENSION (6893)
- LIVER, IMMUNOLOGY (6877)*
- LIVER, INSULIN, GLUCOSE TOLERANCE (6882)*
- LIVER, PLASMA ANTI-ANGIOTENSIN ACTIVITY, PROTEIN DEFICIENCY (6896)
- LIVER, PLATELETS, INPUT (6908)
- LIVER, PRIMARY CARCINOMA (6806)
- LIVER, RENAL FAILURE, HEPATIC COMA (6891)
- LIVER, SPLENOMEGALY, THROMBOCYTOPENIA (6883)
- OXYHEMOGLOBIN DISSOCIATION CURVE, CIRCULATION (6903)
- PORTAL, PYRAMIDONE METABOLISM, MICROSOMAL OXIDASE (6814)
- PORTACAVAL SHUNT, PORTAL HYPERTENSION (6784)
- PROTEIN, TURNOVER, RADIOISOTOPES (6880)*
- RENAL FAILURE, PORTAL HYPERTENSION (6898)
- SURGERY, MALNUTRITION, MALARIA, ADHESIONS (6887)

COLITIS
- CHRONIC AMEBIC, SYSTEMIC EFFECTS, LIVER (7017)
- ISCHEMIC (6693)*
- ULCERATIVE, CHILDREN (6733)
- ULCERATIVE, CROHN'S DISEASE (6735)
- ULCERATIVE, CROHN'S DISEASE, GRANULOMA (6564)

    - ULCERATIVE, GRANULOMATOUS, COLECTOMY (6734)
    - ULCERATIVE, LIVER DISEASE (6736)
- COLLAGEN
    - HEPATIC, CARBON TETRACHLORIDE, POISONING (6448)*
- COLON
    - CANCER, RECTOSIGMOIDOSCOPY, POLYPS (6520)*
    - CARCINOMA, RADIOTHERAPY (6975)
    - CECUM, SIGMOID, APPENDIX, ENDOMETRIOSIS (6697)
    - CHRONIC AMEBIC COLITIS, SYSTEMIC EFFECTS, LIVER (7017)
    - CROHN'S DISEASE, LARGE INTESTINE, ULCEROUS (6716)
    - DIVERTICULA, OVERVIEW (6715)
    - DIVERTICULA, SURGERY (6713)
    - DIVERTICULOSIS, RADIOLOGY, STENOSIS, TUMOR (6576)
    - ISCHEMIC COLITIS (6693)*
    - LYMPHATICS, LYMPHOGRAPHY, DOG (6505)
    - MALIGNANT TUMORS, INCIDENCE, DISTRIBUTION (6729)
    - MICROFLORA, CIRRHOSIS, ENCEPHALOPATHY, PORTACAVAL SHUNT (6941)*
    - MUCOSA, DILATATION, REDUCED PERISTALSIS, HIRSCHSPRUNG'S DISEASE (6717)
    - PELVIC, LUMBAR HERNIA, REPAIR (6722)
    - PNEUMATOSIS CYSTOIDES, DIAGNOSIS (6698)
    - POLYP, CANCER, RADIOLOGY (6714)
    - PRESSURE, MUCOSA, RESISTANCE, DIOXYPHENYLISATIN (6695)
    - SIGMOID, ACUTE VOLVULUS, RESECTION (6720)
    - SIGMOID, ACUTE VOLVULUS, TREATMENT (6712)
    - TUBERCULOUS ENTEROCOLITIS, SURGERY (6987)
    - ULCERATIVE COLITIS, CHILDREN (6733)
    - ULCERATIVE COLITIS, CROHN'S DISEASE (6735)
    - ULCERATIVE COLITIS, CROHN'S DISEASE, GRANULOMA (6564)
    - ULCERATIVE COLITIS, CYTOTOXICITY, LYMPHOCYTES (6730)*
    - ULCERATIVE COLITIS, FAMILY (6737)
    - ULCERATIVE COLITIS, GRANULOMA, COLECTOMY (6734)
    - ULCERATIVE COLITIS, LIVER DISEASE (6736)
    - VASCULAR OCCLUSION, RADIOLOGY (6704)
- COMA
    - HEPATIC, URETEROSIGMOIDOSTOMY, CIRRHOSIS (6954)
- CORTICOSTEROID
    - ADRENALECTOMY, TYROSINE TRANSAMINASE, AMANITINE (6451)*
    - THERAPY, VIRAL HEPATITIS, ALPHA-FETOPROTEIN, REGENERATION (6861)
- CROHN'S DISEASE
    - ESOPHAGITIS, ULCERATIVE, REGIONAL ENTERITIS (6604)
    - REGIONAL ILEITIS, LARGE INTESTINE (6716)
    - ULCERATIVE COLITIS, COLON (6735)
    - VESICO-INTESTINAL FISTULA (6851)
- CYTOLOGY
    - GASTROSCOPY, GASTRIC CARCINOMA (6546)
    - HEPATOCYTE, ULTRASTRUCTURE, METAMORPHOSIS (6318)
- CYTOPLASM
    - LIVER, NADP-DEPENDENT, ISOCITRATE DEHYDROGENASE, PIG (6335)
- CYTOSTATIC
    - GASTROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, STEROIDS (6982)
    - MITOMYCIN C, EHRLICH ASCITES TUMOR CELLS, IN VITRO, TRANSPORT (6790)
- DIAGNOSIS
    - ABDOMINAL MASS, RADIOLOGY, NEONATE (6963)
    - ANGIOGRAPHY, HEPATIC ARTERY, PORTAL HYPERTENSION (6526)
    - ANGIOGRAPHY, PORTAL HYPERTENSION (6540)
    - ANGIOGRAPHY, TUMOR, HYPOCHONDRIUM, CHILDREN (6525)
    - ARTERIOGRAPHY, PORTAL HYPERTENSION, LIVER CIRCULATION (6544)
    - CHOLANGIOSCOPY, CALCULI (6557)
    - CHRONIC PANCREATITIS, MANAGEMENT (6760)
    - CINEGASTROSCOPY (6560)
    - COLON, LYMPHATICS, LYMPHOGRAPHY (6505)
    - DUODENAL ULCER, DUODENOSCOPY, SCOPIC BIOPSY (6645)
    - DUODENOJEJUNOSTOMY, DUODENAL ULCER, AMPULLA OF VATER (6561)
    - EMERGENCE PERITONEOSCOPY, TRAUMA (6558)
    - ENDOSCOPY, CYTOLOGY, BIOPSY, ESOPHAGUS STOMACH, CANCER, ULCER (6534)
    - ENDOSCOPY, GASTRIC, POLYPOID LESIONS (6569)
    - ENDOSCOPY, PORTAL HYPERTENSION, ESOPHAGEAL VARICES (6907)
    - ESOPHAGOSCOPY (6529)
    - FIBERGASTROSCOPE, GASTRIC BIOPSY (6553)
    - FIBEROPTIC ESOPHAGOSCOPY, CARDIA, UPPER STOMACH (6543)
    - GASTROCAMERA, DIRECT VISION, CARCINOMA (6571)
    - GASTRO-FIBERSCOPE, BIOPSY, GASTRIC CANCER (6545)
    - GASTROSCOPY, CYTOLOGY, GASTRIC CARCINOMA (6546)
    - GASTROSCOPY, GASTRITIS (6641)
    - LIVER ENZYMES, GARGOYLISM, GLYCOGEN STORAGE DISEASE (6531)
    - LIVER SCAN, AMEBIC ABSCESS (7016)
    - MESENTERIC MICROANGIOGRAPHY, X-RAY SENSITIVE VIDICON (6342)
    - PANCREAS, GLUCOSE TOLERANCE TEST, AMYLASEMIA, CHRONIC PANCREATITIS (6523)*
    - PEDUNCULATED HAMARTOMA, ESOPHAGUS (6586)
    - PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CARCINOMA, CHOLELITHIASIS (6554)
    - PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CONTRAST MEDIA (6556)
    - PERFUSION, HEPATIC ARTERY, ANTIMETABO

LITES (6852)
  PERITONEAL DIALYSIS, HEPATIC FAILURE, DRUG INTOXICATION (6964)
  PERITONEAL DIALYSIS, INFECTION (6957)
  PERORAL BIOPSY, SMALL INTESTINE, ENTERITIS, SPRUE (6530)
  POSTOPERATIVE ILEUS, ADHESIONS, CARCINOMA, MECHANICAL BLOCK (6574)
  RADIOGRAPHY, STOMACH, CARCINOMA, POLYP, ULCER (6555)
  RADIOLOGY, CHRONIC PANCREATITIS (6759)
  RADIOLOGY, COLON, VASCULAR OCCLUSION (6704)
  RADIOLOGY, GASTROINTESTINAL TRACT, CONTRAST MEDIA (6527)
  RADIOLOGY, LARGE BOWEL, PSEUDO-OBSTRUCTION (6705)
  RADIOLOGY, MALIGNANT ABDOMINAL TUMORS, TREATMENT, CHILDREN (6960)
  RADIOLOGY, MIDGUT VOLVULUS, MALROTATION (6949)
  RADIOLOGY, PEPTIC ULCER, GALLBLADDER DISEASE (6668)
  RADIOLOGY, RECTAL PROLAPSE, RIPSTEIN SURGERY (6710)
  SEROLOGICAL, TYPHOID, PARATYPHOID, O-H-VI-AGGLUTINATION, O-HEMAGGLUTINATION (6538)
  TECHNETIUM 99M SULFIDE, SCINTILLATION CAMERA, NORMAL LIVER (6321)
  TRANSCATHETER BIOPSY, ESOPHAGEAL LESIONS, TUMOR (6536)
  WILSON'S DISEASE, TREATMENT, COPPER (6820)
ARRHEA
  BOVINE VIRAL, ULTRASTRUCTURE, MUCOSAL DISEASE (6955)
  MALABSORPTION, CROHN'S DISEASE (6688)
  MALNUTRITION, DIPHENOXYLATE, HYDROCHLORIDE THERAPY, INFANT (6965)
  VIRUS, BACTERIA, INFANTS (6981)
ET
  HEPATOMA, PYRUVATE KINASE, LIVER (6821)
  LINOLEATE DEFICIENCY, LIPID METABOLISM LIVER, MOUSE (6489)
  MALNUTRITION, PHYSICAL GROWTH (6968)
  PANCREATIC AMYLASE, SALIVA, REDUCING SUBSTANCE (6418)
  PANCREATIC CALCIFICATION, ETIOLOGY, CEYLON (6750)
  PHENYLALANINE, MICROSOME, LEUCINE (6446)*
  SOYBEAN FLOUR, ENZYME ACTIVITY, PANCREATIC, ENZYMES (6410)*
  UNSATURATED FAT, PLASMA, CHOLESTEROL (6352)*
ESTION
  GASTRITIS, ATROPHIC, NEUTROPHILES, EOSINOPHILES (6628)
EASE
  CONGESTIVE HEART FAILURE, CENTRILOBULAR SINUSOIDAL CHANGES (6929)*
ERTICULITIS
  COLON, OBSTRUCTION, CARCINOMA, COLECTOMY (6696)
ERTICULOSIS
  COLON, RADIOLOGY, STENOSIS, TUMOR (6576)

  CONGENITAL, ULCERATION, CHOLECYSTOGRAPHY, MUCOSA (6921)
DIVERTICULUM
  APPENDIX, APPENDICITIS, SURGERY (6718)
  COLON, OVERVIEW (6715)
  COLON, SURGERY (6713)
  ESOPHAGUS, INFANTS, CHILDREN (6597)
  CONGENITAL, CHOLECYSTOGRAPHY, ULCERATION (6921)
  DIVERTICULITIS, PEPTIC ULCER, APPENDICITIS, PERITONITIS (6961)
  JEJUNUM, DIVERTICULITIS (6681)
DRUG
  ACUTE AMEBIC DYSENTERY, ANTIBIOTICS (7021)
  AMINOSIDIN, DYSENTERY (6983)
  ANTIBACTERIAL, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
  ANTIBACTERIAL, INTESTINAL FLORA, BONE MARROW CELL PROLIFERATION (6503)
  BLEOMYCIN, CANCER, ESOPHAGUS (6603)
  CHLOROQUIN, JAUNDICE, INFECTIOUS HEPATITIS (6841)
  CHOLESTEROL SYNTHESIS, LIVER, RAT (6478)
  CLOFIBRATE, GALLSTONES, SODIUM DEHYDROCHOLATE, CHOLESTYRAMINE (6911)*
  COCAINE, ILEUM, 5-HYDROXY-TRYPTAMINE SUPERSENSITIVITY (6495)
  DIAZEPAM, GASTROINTESTINAL MOTILITY, DUODENAL ULCER (6391)
  DIGLIUM, GASTRIC, ULCER, PSYCHOSOMATIC (6665)
  DIOXYPHENYLISATIN, COLON, MUCOSA, PRESSURE, INTESTINAL RESISTANCE (6695)
  DIURETICS, HEPATIC COMA, ASCITES, CIRRHOSIS (6901)
  DROPERIDOL, GASTROINTESTINAL MOTILITY, ELECTROMYOGRAPHY, FENTANYL (6385)
  ESTRADIOL, LIVER, HENS, RNA (6481)
  HEXAMETHYLMELAMINE, PRIMARY HEPATIC CANCER (6796)
  INTOXICATION, HEPATIC FAILURE, PERITONEAL DIALYSIS (6964)
  IODOTHYMOL PIPERAZINE THERAPY, HOOKWORM (7006)
  ISONIAZID, ABSORPTION, STOMACH, SMALL INTESTINE (6366)
  METABOLISM, RETICULOENDOTHELIAL SYSTEM, HORMONE (6472)
  METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, AMEBIC LIVER ABSCESS (7011)
  MICROSOME, ALCOHOL, OXANDROLONE, PHENOBARBITAL (6768)*
  M-TOLUYLENEDIAMINE, CARCINOGEN, LIVER, RAT (6827)
  NITROGEN MUSTARD, ILEUM (6389)
  OROTATE, GALACTOSAMINE HEPATITIS, LIVER (6845)
  POLYMERS, GASTROINTESTINAL ABSORPTION (6376)
  PYRROLE DERIVATIVE, PYRROLIZIDINE ALKALOIDS, LIVER LESIONS (6844)
  RESERPINE, DUODENAL, ULTRASTRUCTURE (6306)*
  VASOACTIVE, PORTAL, CIRCULATION (6804)
DUODENUM

ACIDIFICATION, EFFECT, GASTRIC, SECRETION (6398)*
CANCER, DUODENOSCOPY, SCOPIC BIOPSY (6645)
CHRONIC ILEUS, SURGERY (6643)
CONGENITAL DIAPHRAGMATIC OCCLUSION (6650)
CONTENTS, VOLUME, BICARBONATE, SECRETIN (6411)*
DUODENOJEJUNOSTOMY, ULCER, AMPULLA OF VATER (6561)
FAMILIAL ATRESIA (6619)
HEMORRHAGE, GASTRIC, LIVER CIRRHOSIS (6889)
INFRAPAPILLARY,CARCINOMA, PARATHYROID ADENOMA (6621)
MUCOSA, CONGENITAL LACTOSE, MALABSORPTION (6691)
O2 CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, PANCREAS (6507)
OBSTRUCTION, MALIGNANT VILLOUS ADENOMA (6675)
PAPILLA, DUODENOSCOPY, PANCREOZYMIN (6517)*
STUMP, INSUFFICIENCY, VAGOTOMY, DRAINAGE, RESECTION (6653)
ULCER, ABDOMINAL VAGOTOMY, CARDIA COMPETENCE (6642)
ULCER, GASTRIC OBSTRUCTION, CARCINOMA, TUBERCULOSIS (6634)
ULCER, GASTROINTESTINAL MOTILITY, DIAZEPAM (6391)
ULCER, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
ULCER, VAGOTOMY, DRAINAGE (6662)
ULCEROGENIC TUMOR, GASTRODUODENITIS, METASTASES (6644)
ULTRASTRUCTURE, ARGYROPHIL, ARGENTAFFIN, RESERPINE (6306)*
VASCULAR COMPRESSION, SCOLIOSIS, RADIOLOGY, SURGERY (6616)

DYE
  INDOCYANINE GREEN, CLEARANCE (6454)*
  PROPYLIODON, PERISTALSIS, BARIUM, ILEUS (6574)

DYSENTERY
  ACUTE AMEBIC, DRUGS, ANTIBIOTICS (7021)
  BACILLARY, AMINOSIDIN (6983)

DYSPHAGIA
  ESOPHAGEAL RING, SYMPTOMOLOGY, STENOSIS (6606)
  ESOPHAGITIS, STENOSIS, CROHN'S DISEASE (6604)

ECHINOCOCCOSIS
  LIVER, SCINTOGRAPHY (6578)

ELECTROLYTE
  BALANCE, ALDOSTERONISM, ACID-BASE BALANCE (6948)
  COPPER, WILSON'S DISEASE, METABOLISM, DIAGNOSIS, TREATMENT (6820)
  FERRITIN, HEPATOMA (6813)
  IRON, ABSORPTION, AMINO ACID, VEGETABLE, FOOD (6353)*
  IRON SORBITOL, MALABSORPTION (6692)
  K+, RB+, ABSORPTION, LIVER (6354)*
  LIVER FERRITIN, TUMOR, RAT (6990)
  MAGNESIUM, DEFICIENCY, ALBUMIN, SYNTHESIS (6438)*
  POTASSIUM THERAPY, SMALL INTESTINE LESIONS (6997)
  WATER, TRANSPORT, RECTUM, AMPULLA (6370)
  WATER, TRANSPORT, RECTUM, AMPULLA, RENAL (6699)

ELECTROMYOGRAPHY
  HUMAN STOMACH, CYCLIC VARIATIONS, MOTILITY (6387)

ELECTRON MICROSCOPY
  CHARACTERISTICS, AMINE-STORING CELLS, GASTRIC, MUCOSA (6285)*
  DUODENUM, ULTRASTRUCTURE, ENDOCRINE CELLS (6284)*
  IDIOPATHIC, JAUNDICE, PREGNANCY (6771)*
  WHIPPLE'S DISEASE, INTESTINAL MUCOSA, MICRO-ORGANISM (6687)

ELECTROPHORESIS
  IMMUNOELECTROOSMOPHORESIS, SERUM, HEPATITIS, SH ANTIGEN (6518)*

ELECTROPHYSIOLOGY
  INTESTINE, MUCOSA, MOTILITY, OSMOTIC (6351)*

ENCEPHALOPATHY
  HEPATIC, EEG, CIRRHOSIS (6803)
  LIVER, EEG ANALYSIS, NEOMYCIN, LACTULOSE (6522)*
  PORTAL SYSTEMIC, CIRRHOSIS, COLON, MICROFLORA (6941)*

ENDOCRINE SYSTEM
  PARATHYROID ADENOMA, DUODENAL CARCINOMA (6621)

ENDOSCOPY
  AMPULLA OF VATER, PANCREATOGRAPHY, CHOLANGIOGRAPHY, UROGRAFIN (6516)*
  FIBERDUODENOSCOPE, DUODENOSCOPY, DUODENAL MORPHOLOGY (6517)*
  PANCREATOCHOLANGIOGRAPHY, PANCREATIC CANCER, GALLSTONES (6519)*

ENTERITIS
  ACTINIC, ILEUS, OBLITERATIVE, VASCULITIS (6673)
  AEROMONAS, DIARRHEA (6984)

ENTEROCOLITIS
  SEGMENTAL, METEORISM, CARDIOVASCULAR DISEASE (6947)
  TUBERCULOUS, SURGERY, COLON (6987)

ENZYME
  ACTIVITY, LIVER, LIPOGENESIS, GROWTH FACTORS (6423)*
  ADENYL CYCLASE, HORMONE, BINDING (6447)*
  ALDOLASES A, C, HEPATOMA (6818)
  AMINE-OXIDASE, LIVER, MITOCHONDRIA, BEEF (6485)
  AMYLASE, INTESTINE (6296)*
  ATPASE, LIVER, MEMBRANE, FATTY ACID (6295)*
  ATPASE, STEROID, LIVER, RAT (6339)
  CARBONIC ANHYDRASE, LOCALIZATION, PARIETAL, STOMACH (6308)*
  CAROTENE DIOXYGENASE, B-CAROTENE, RETINAL (6494)*
  CHITINASE, MUCOSA, MEMBRANE, IONS, LACERTA VIRIDIS (6401)
  CYSTATHIONINE SYNTHASE, LIVER, PYRI-

DOXINE EFFECT, RAT (6484)
NA POLYMERASE, DNA SYNTHESIS, LIVER, MITOCHONDRIA (6474)
EHYDROGENASE, GLUCOSE, XYLOSE, LIVER MICROSOME (6465)
RUCTOSE DIPHOSPHATASE, LIVER, KIDNEY, COA (6290)*
LUCOSE-6-PHOSPHATASE, LIVER, GLYCOGEN, TRYPANOSOMA GAMBIENSE, GUINEA PIG (7018)
.YCERALDEHYDEPHOSPHATE DEHYDROGENASE, LIVER, BOVINE (6327)
ISTIDINE DECARBOXYLASE, STOMACH, MUCOSA (6397)*
ISTONE DEACETYLASE, LIVER, NOVIKOFF HEPATOMA (6459)
PATIC RIBONUCLEASE, INHIBITOR, AGE (6468)
PATOCARCINOGENESIS, MUSCLE TYPE ALDOLASE, TOTAL ALDOLASE (6831)*
O-, ASPARTATE-AMINOTRANSFERASE, LIVER, CCI4 POISONING (6850)
VER, ALKALINE PHOSPHATASE, AMPHOLINE INHIBITION (6309)*
VER, DOLICHOL SYNTHESIS, STEREOCHEMISTRY (6476)
IVER, ORIDOXIN, TOXOGONIN, HUMAN (6467)
IPASE, PANCREAS, SODIUM TAUROCHOLATE (6413)*
IVER, SERINE DEHYDRATASE, DIET, PANCREAS, ADRENALS, RAT (6479)
IVER, TUMOR, DIETHYLNITROSAMINE, GLUCOSE-6-PHOSPHATASE (6761)*
'SOZYME, GASTRIC SECRETION, GASTRIC PATHOLOGY (6652)
ALATE DEHYDROGENASE, ISOZYMES, LIVER MITOCHONDRIA, RAT (6336)
DP-DEPENDENT ISOCITRATE DEHYDROGENASE, LIVER, CYTOPLASM, PIG (6335)
ICLEASE, PROTEASE, HEPATOMA, ASCITES (6765)*
NITHINEAMINOTRANSFERASE, CHANG'S LIVER CELL, METHIONINE (6431)*
NCREATIC ENZYMES, SOYBEAN FLOUR (6410)*
PSIN, GASTRIC JUICE, INHIBITOR (6399)
OSPHOLIPASE, INTESTINE, MUCOSA (6492)*
OTEOLYTIC, ABSORPTION, INTESTINE (6368)
RUVATE KINASE, HEPATOMA, DIET (6821)
A POLYMERASE, LIVER NUCLEI, ADRENALECTOMY, ALPHA-IRRADIATION (6458)
A POLYMERASE ASSAY, LIVER NUCLEI, X-AMANITIN (6317)
CRETION, PANCREAS, PERFUSION, DUODENUM (6409)*
RUM GUANASE, SERUM ALANINE AMINO TRANSFERASE, SERUM ASPARTATE AMINO TRANSFERASE (6859)*
RUM, TRANSAMINASE, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE, MARASMUS, KWASHIORKOR, MARASMIC KWASHIORKOR (6966)
RUM TRANSAMINASE, LIVER, CHOLECYSTOCHOLANGIOGRAPHY, HEPATITIS (6869)

SGOT, SGTP, NORMAL, HISTOLOGICAL CORRELATIONS (6347)
SUGAR DEHYDROGENASES, LIVER, CHROMATOGRAPHY, ELECTROPHORESIS (6324)
TRANSAMINASES, LIVER, AGE, CHICKEN, GUINEA PIG (6462)
TRNA METHYLASES, NUCLEOTIDE, LIVER, RAT (6341)
XANTHINE OXIDASE, LIVER, DITHIOERYTHRITOL (6466)

EPIDEMIOLOGY
BILHARZIASIS, METEORISM (7008)
HOOKWORM, ANEMIA, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
SALMONELLOSIS, TYPHOID FEVER, FOOD POISONING (6942)

EPINEPHRINE
ADENYL CYCLASE, GLUCAGON, INTERACTION (6428)*
ADRENERGIC RECEPTOR, PROPRANOLOL, TYROSINE AMINOTRANSFERASE (6435)*

EPITHELIUM
ESOPHAGEAL, ACANTHOSIS, TUNICA PROPRIA (6593)
GLANDULAR, ANAL GLANDS, RABBIT (6344)
INTESTINE, PERMEABILITY, TORTOISE (6359)
RUMEN, MORPHOLOGY, SODIUM, OVINE (6334)

ESOPHAGITIS
CANDIDA, MALIGNANT, CHILDREN (6935)*
CELLULAR INFILTRATION, TUNICA PROPRIA, EROSIVE, SUPERFICIAL (6593)
CROHN'S DISEASE, REGIONAL ENTERITIS (6604)
REFLUX, ACID PERFUSION TEST, PRESSURE, MOTILITY (6570)

ESOPHAGUS
ACUTE PERFORATION, GASTRIC BUTTRESS, DOG (6585)
ANASTOMOSIS (6592)
ATRESIA, ANASTOMOSIS (6596), (6597)
BLEEDING VARICES, MANAGEMENT (6582)
CANCER, BLEOMYCIN (6603)
CANCER, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
CARCINOMA, BETEL CHEWING, CEYLON (6598)
CARCINOMA, ROTATORY IRRADIATION, DEEP THERAPY, PERFORATION (6580)*
DIVERTICULA, ESOPHAGOBRONCHIAL FISTULA SURGERY (6590)
DIVERTICULA, INFANTS, CHILDREN (6597)
DYSPHAGIA, ESOPHAGEAL DILATATION, REFLUX (6594)
EROSION, HEMORRHAGE, STOMACH (6635)
ESOPHAGEAL RING, ETIOLOGY, RADIOGRAPH (6606)
ESOPHAGOSCOPY (6529)
FISTULA, SURGERY, POSTPNEUMONECTOMY (6991)
HIATUS HERNIA, SURGERY (6584)
INTRAMURAL PERFORATION, RADIOLOGY (6587)
LESION, RADIOGRAPHY, LUNG DENSITY (6581)
LESION, TRANSCATHETER BIOPSY, TUMOR (6536)

- PEDUNCULATED HAMARTOMA, DIAGNOSIS (6586)
- PEPTIC ULCER, PERFORATION, REFLUX (6605)
- PERFORATION, RUPTURE, PATHOLOGY, THERAPY (6602)
- PORTAL HYPERTENSION, CHILDREN, SHUNT OPERATION (6812)
- PRIMARY, MALIGNANT, MELANOMA (6579)*
- REPLACEMENT, GASTRIC MOBILIZATION (6599)
- TRACHEOESOPHAGEAL FISTULA, ATRESIA, SURGERY (6588)
- TUBERCULOSIS, RADIOLOGY (6600)
- VARICES, PORTAL HYPERTENSION, ENDOSCOPY (6907)

ETHANOL
- METABOLISM, LIVER, RAT (6439)*

ETHIONINE
- LIVER, CELL, CHROMATIN (6345)

EXCRETION
- PERFUSED LIVER, BILE ACID, BILE SALT (6362)
- TETRACYCLINE, BILE DUCT, INFECTION (6922)

FAT
- UNSATURATED, DIETARY FACTOR, CHOLESTEROL (6352)*

FATTY ACID
- INTESTINAL, CONCENTRATION, DIETARY LIPID (6493)*
- TRIELAIDIN, INGESTION, HEPATIC, LIPID (6461)

FECES
- CONSTIPATION, MOTILITY, CARMINE (6528)

FEVER
- TYPHOID, FOOD POISONING, SALMONELLOSIS EPIDEMIOLOGY (6942)

FISTULA
- BILIARY-DUODENAL, JAUNDICE, REFLUX, CHOLECYSTECTOMY (6547)
- ESOPHAGOTHORACIC, REFLUX, PEPTIC ULCER (6605)
- ESOPHAGUS, SURGERY, POSTPNEUMONECTOMY (6991)
- GASTRIC, HISTAMINE, PENTAGASTRIN (6406)
- GASTRO-COLIC, GASTRIC ULCER (6994)
- POST-OPERATIVE, SMALL INTESTINE, ACUTE OCCLUSION (6678)
- TRACHEOESOPHAGEAL, ESOPHAGEAL ATRESIA, COLON TRANSPLANT (6583)
- VESICO-INTESTINAL, CROHN'S DISEASE (6851)

FLORA
- INTESTINAL, R-FACTOR TRANSMISSION, MAN (6511)

FOLATE
- CONGENITAL, MALABSORPTION (6684)*

FRUCTOSE
- ABSORPTION, HYPERLIPIDEMIA, TOLERANCE TEST (6358)*

FUNGUS
- GASTROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, CYLOSTATIC, STEROIDS (6982)

GALLBLADDER
- ADENOMA, EXTRAHEPATIC BILE DUCT (6914)
- BILE, IMMUNOGLOBULIN, MONKEY (6939)*
- BILE DUCT, POLYARTERITIS NODOSA (6915)
- BIOPSY, LAPAROSCOPY, JAUNDICE, OBSTRUCTION (6575)
- CARDIAC SYNDROME, CHOLELITHIASIS, MYOCARDIAL ISCHEMIA (6924)
- CHOLANGIOSCOPY, CALCULI (6557)
- CHOLECYSTECTOMY, ABDOMINAL PRESSURE, LIVER DAMAGE, CHOLESTEROL STONE (6925)
- CHOLECYSTITIS, CHOLELITHIASIS, MALE (6918)
- CHOLESTEROL SYNTHESIS, ILEUM, LIVER, GUINEA PIG (6463)
- DIVERTICULOSIS, ULCERATION, CHOLECYSTOGRAPHY (6921)
- DISEASE, PEPTIC ULCER, RADIOLOGY (6668)
- MELANOMA, CHOLECYSTECTOMY, INTRA-ABDOMINAL METASTASES (6920)
- SPHINCTER OF ODDI, FLOW RESISTANCE, VAGOTOMY (6382)*

GALLSTONE
- PREVENTION, SODIUM DEHYDROCHOLATE, CLOFIBRATE, CHOLESTYRAMINE (6911)*

GANGRENE
- NON-OCCLUSIVE, INTESTINAL, OCCLUSIVE (6938)*

GAS
- PORTAL VENOUS SYSTEM, X-RAY, JEJUNUM (6989)

GASTRECTOMY
- COMPLICATIONS, DUMPING SYNDROME, ULCER RESECTION (6636)
- ESOPHAGOJEJUNAL ANASTOMOSIS, CHROMIC CATGUT (6631)
- IRON, ABSORPTION, VITAMIN B12 (6651)

GASTRIC DISFASE
- CHOLINESTERASE, ULCER, CARCINOMA, PROTEIN METABOLISM (6565)

GASTRIC TISSUE
- HISTAMINE BIOSYNTHESIS, PYRIDOXINE DEFICIENCY (6403)

GASTRIN
- I AND II, POLYPEPTIDE, SECRETIN, CHOLECYSTOKININ-PANCREOZYMIN (6333
- ELECTROPHORESIS, SERUM ALBUMIN, METABOLISM (6402)
- IMMUNOASSAY, VAGAL RELEASE, INSULIN (6394)*
- STOMACH, MUCOSA, HISTIDINE DECARBOXYLASE, STIMULATION (6397)*

GASTRITIS
- ATROPHIC, SUCTION BIOPSY, METAPLASIA (6609)*

GASTROFNTEROLOGY
- NONSPECIFIC IMMUNITY, DUCTON (6998)

GASTROENTEROSTOMY
- DUODENAL ULCER, ILEUS, PERFORATION, VAGOTOMY (6663)

GASTROINTESTINAL TRACT
- ABSORPTION, POLYMERS, DRUGS (6376)
- ARTERIAL, ISCHEMIA, SHOCK, INFARCTIO (6978)
- BACTERIA, IRRADIATION, BACTEREMIA (6932)*
- CELIAC DISEASE, OSTEOMALACIA, DIAGNOSIS (6685)*

- CORTICOSTEROID CLEARANCE (6365)
- DRAINAGE, ASPIRATION, SIPHON (6985)
- ERYTHEMA, NODULAR, PASTEURELLA PSEUDOTUBERCULOSA, YERSINIA ENTEROCOLITICA (6986)
- FETUS, ADRENERGIC INNERVATION, CHROMAFFIN CELL (6328)
- HEMORRHAGE, ASPIRIN (6993)
- HEMORRHAGE, NEONATE, MILK (6971)
- HORMONE, SECRETIN, PANCREOZYMIN, DUODENAL SECRETIONS (6333)
- MOTILITY, DIAZEPAM, DUODENAL ULCER (6391)
- PERISTALSIS, DROPERIDOL, FENTANYL, ELECTROMYOGRAPHY (6385)
- POSTOPERATIVE ILEUS, ACID-BASE BALANCE, ELECTROLYTES (6948)
- RADIOLOGY, CONTRAST MEDIA (6527)
- SURGERY, NEONATE (6958)
- TRANSPORT, METABOLISM, RATE CONSTANTS (6374)

GASTROJEJUNOSTOMY
- PYLORUS, STENOSIS, RADIOLOGY, METHOCLOPRAMIDE (6568)

GASTROPHOTOGRAPHY
- DIRECT VISION, CARCINOMA, SMEAR CYTOLOGY (6571)
- MUCOSA, FIBERSCOPE (6537)
- TECHNIQUE, PYLORUS, SERIAL FILMS (6549)

GASTROSTOMY
- NEWBORN, DUODENAL OCCLUSION, ANNULAR PANCREAS (6640)

GENETICS
- AUTOSOMAL RECESSIVE, WILSON'S DISEASE, LIVER METABOLISM (6811)
- CYSTIC FIBROSIS, PANCREAS (6748)

GENITOURINARY TRACT
- NEPHROTIC SYNDROME, FATTY KIDNEY, FATTY LIVER (6892)
- RENAL FAILURE, CIRRHOSIS, HEPATIC COMA (6891)
- RENAL FAILURE, CIRRHOSIS, PORTAL HYPERTENSION (6898)
- RENAL INVOLVEMENT, INFECTIOUS MONONUCLEOSIS, HEPATIC INVOLVEMENT (6999)
- URINE, CECUM, RECTUM, ROADRUNNER (6506)

GLAND
- ANAL, RABBIT, RNA, EPITHELIUM (6344)

GLOBULIN
- ALPHA 2-(ACUTE PHASE), LIVER, SYNTHESIS, SECRETION (6450)•
- ANTILYMPHOCYTIC, IMMUNOLOGY, HEPATITIS (6873)

GLUCOCORTICOID
- GLUCONEOGENESIS, ACETYL COA, ENZYME, STARVATION (6422)•

GLUCONEOGENESIS
- LIVER, GLYCOLYSIS, DIABETES, MAN, RAT (6794)
- LIVER, INSULIN, FREE FATTY ACID, FASTING, IN VITRO, RAT (7010)
- LIVER, TRANSAMINASES, AGE, CHICKEN, GUINEA PIG (6462)
- STARVATION, GLUCOCORTICOIDS, BLOOD SUGAR, GLYCOGEN (6422)•

GLUCOSE
- TOLERANCE, CIRRHOSIS, HEPATIC COMA (6882)•

GLYCOGEN
- SYNTHESIS, FETAL LIVER, HYDROCORTISONE (6483)

GLYCOLYSIS
- LIVER, GLUCONEOGENESIS, DIABETES, MAN, RAT (6794)

GOLD COLLOID
- KUPFFER CELLS, MILK, ABSORPTION, IMMUNOLOGIC RESPONSE (6371)

GRANULOMA
- COLITIS, ULCERATIVE, CROHN'S (6564)
- EPITHELIOID CELL, LIPOGRANULOMA, LIVER (6776)•

HALOTHANE
- ANESTHESIA, RADIUM TREATMENT, HEPATOCELLULAR JAUNDICE (6833)•

HEART
- MYOCARDIAL INFARCTION, LIVER FAILURE (6809)

HEMAGGLUTINATION
- PHYTOHEMAGGLUTININS, DNA, RNA (6254)•

HEMICOLECTOMY
- MEGACOLON, MENTAL PATIENTS, DILATATION (6723)

HEMODYNAMICS
- DISTENSION, STOMACH, INTESTINE, ABDOMEN (6510)
- HEPATIC, ALCOHOL, OXANOLONE, PHENOBARBITAL (6768)•

HEMORRHAGE
- ABSCESS, AEROMONAS HYDROPHILA, UNCOOKED TOURISTS (6984)
- EROSION, STOMACH, ESOPHAGUS (6635)
- ESOPHAGEAL VARICES, MANAGEMENT (6582)
- GASTRIC, DUODENAL, LIVER CIRRHOSIS (6889)
- GASTRODUODENAL, GASTRIC PACKING (6649)
- GASTROINTESTINAL, HEREDITARY TELANGIECTASIA, RESECTION (6956)
- GASTROINTESTINAL TRACT, ASPIRIN (6993)
- GASTROINTESTINAL TRACT, NEONATE, MILK (6971)
- POSTSURGICAL, CIRRHOTIC, VARICEAL, VASOACTIVE DRUGS (6804)

HEPATITIS
- ACUTE, ANTIGEN, CANCER (6778)•
- ACUTE, INFECTIOUS, CHRONIC, PHYTOHEMAGGLUTININS (6254)•
- ACUTE VIRAL, AUSTRALIA ANTIGEN, LIVER (6867)
- ALCOHOLIC, LIVER, FATTY LIVER (6846)
- AUSTRALIA ANTIGEN, EPIDEMIOLOGY, VIROLOGY, CARRIER STATE, DOWN'S SYNDROME, MENTAL RETARDATION (6864)
- AUSTRALIA ANTIGEN, TRANSFUSION (6863)
- CHRONIC, AZATHIOPRINE, IMMUNOSUPPRESSIVE THERAPY (6874)
- CHRONIC, FATIGUE, GLYCEMIA (6872)
- CHRONIC, HYPERGAMMAGLOBULINEMIA, CIRRHOSIS (6871)
- CHRONIC, LIVER FUNCTION, CHOLECYSTOGRAPHY-CHOLANGIOGRAPHY (6869)
- CHRONIC, SEROLOGY, IMMUNOLOGY (6870)
- EPITHELIOID CELL GRANULOMA, LIPOGRANULOMA, BIOPSY (6776)•

  - GALACTOSAMINE, OROTATE, LIVER (6845)
  - IMMUNOLOGY, THERAPY, ANTILYMPHOCYTIC GLOBULIN (6873)
  - INFECTIOUS, JAUNDICE, CHOLESTASIS, PORPHYRINURIA, EXANTHEMA (6841)
  - LIVER FUNCTION, PROTEIN TURNOVER, IMMUNOGLOBULIN (6855)•
  - SERUM, AUSTRALIA ANTIGEN (6868)
  - SERUM, SH ANTIGEN, IMMUNOELECTROOSMOPHORESIS (6518)•
  - VIRAL, ALPHA-FETOPROTEIN, CORTICOTHERAPY, EMBRYONIC HEPATOCYTES (6861)
  - VIRAL, AUSTRALIA ANTIGEN, DRUG ADDICTION (6860)•
  - VIRAL, BLOOD GROUPS, CIRRHOSIS (6937)•
  - VIRAL, BONE MARROW DEPRESSION, ANATOMOPATHOLOGY (6856)•
  - VIRAL, DRUG USERS (6857)•
  - VIRAL, LIVER, KENYA (6866)
  - VIRAL, LIVER FUNCTION, COMPUTER ANALYSIS (6858)•
  - VIRAL, MORBIDITY, MORTALITY, ISRAEL (6865)
  - VIRAL, SEROLOGICAL TEST, INFECTIOUS-MONONUCLEOSIS, IMMUNOGLOBULINS (6550)
  - VIRUS, SEROLOGY, ANTIGEN-VIRUS (6550)
- HEPATOCARCINOGENESIS
  - ETHIONINE, NUCLEOTIDE, MITOCHONDRIA, MICROSOME (6812)•
  - MUSCLE TYPE ALDOLASE, AZO DYE (6831)•
  - STERIGMATOCYSTIN, PATHOLOGY, BANTU HEPATOMA (6769)•
- HEPATOCYTE
  - ULTRASTRUCTURE, METABOLISM, VACUOLATION, OXYGENATION (6849)
- HEPATOMA
  - BANTU, HEPATOCARCINOGENESIS, STERIGMATOCYSTIN, PATHOLOGY (6769)•
  - CHROMATIN, NUCLEI, RNA, DNA (6287)•
  - HEPATOCARCINOGENESIS, NUCLEOTIDE LEVEL MITOCHONDRIA (6812)•
  - MEMBRANE, ELECTRON MICROSCOPY, ENZYMES (6292)•
  - NOVIKOFF, ASCITES, RNA, NUCLEUS (6781)•
- HEPATOTOXICITY
  - PARENCHYMA, HEPATIC VEIN, ANTIGEN-ANTIBODY COMPLEX (6853)
- HERNIA
  - HIATUS, SURGERY (6584)
  - HYPOCHROMIC ANEMIA, THROMBOSIS (6595)
  - LUMBAR, PELVIC COLON, REPAIR (6722)
- HETEROTOPIA
  - PANCREAS, INSULAR CARCINOMA (6742)
- HIRSCHPRUNG'S DISEASE
  - COLON, DILATATION, PERISTALSIS, ACETYLCHOLINESTERASE (6717)
- HISTAMINE
  - BIOSYNTHESIS, PYRIDOXINE, HISTIDINE (6403)
  - COMPOUND 48/80, SINOMENINE, TOLUIDINE BLUE, MAST CELLS (6283)•
  - GASTRIC ULCER, PROMETHAZINE, NSD 1055 (6615)•
  - SECRETION, ACID, PEPSIN (6394)•
  - VASODILATOR, ARTERIOVENOUS SHUNTING, PULMONARY CIRCULATION (6875)•
- HISTOCHEMISTRY
  - LIVER, MITOCHONDRIA, BINDING, TRIMETHYLTIN, THRIETHYLTIN (6444)•
  - NOVIKOFF, HEPATOMA, ASCITES, RNA (6781)•
- HISTOLOGY
  - HISTOCHEMISTRY, GLYCOGEN, LIVER, DAB CARCINOGENESIS (6316)
  - HISTOCHEMISTRY, HISTAMINE, MAST CELLS (6330)
  - HISTOCHEMISTRY, LIVER, TRANSPLANT (6823)
  - LIVER, FUNCTION, PULMONARY TUBERCULOSIS (6988)
  - LIVER HILUM, CARCINOMA (6825)
  - PYLORUS, EPITHELIUM, ULTRASTRUCTURE, CAT (6314)
- HODGKIN'S DISEASE
  - FEVER, LYMPH NODES, IRRADIATION (6539)
- HOMOTRANSPLANT
  - LIVER, REJECTION, BILIRUBIN, ENZYME (6767)•
- HORMONE
  - BINDING, EPINEPHRINE, GLUCAGON, ADENYL CYCLASE (6447)•
  - CORTICOSTERONE, RETICULOENDOTHELIAL SYSTEM, DRUG METABOLISM (6472)
  - ESTRADIOL, ESTRONE, LIVER, METABOLISM (6449)•
  - ESTROGEN, CHOLESTASIS INDUCTION, PREGNANCY (6783)
  - LIVER FUNCTION, ESTROGENS, BILE DUCT FUNCTION (6490)
  - PARATHYROID, PANCREATIC FUNCTION, SECRETIN-PANCREOZYMIN (6936)•
  - PENTAGASTRIN, GASTRIC FISTULA, HISTAMINE (6406)
  - PENTAGASTRIN, GASTRIC SECRETION (6542
  - REGULATION, TRNA, HYPOPHYSECTOMY, LIVER (6482)
  - SECRETIN, PANCREATIC PERFUSION, DOG (6414)
  - TETRAGASTRIN, GASTRIC SECRETION (640
  - THYROID, MITOCHONDRIA, PROTEIN TURNOVER (6291)•
  - VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, SPLEEN, LIVER, INTESTINE (6509)
- HYPERBILIRUBINEMIA
  - NEONATE, PHOTOTHERAPY, BILIVERDIN, BILIRUBIN (6801)
- HYPERPARATHYROIDISM
  - EXOCRINE PANCREAS, SECRETIN-PANCREOZYMIN (6936)•
- HYPOGLYCEMIA
  - HYPERINSULINISM, EXTRA-PANCREATIC TUMOR (6747)
- HYPOPROTEINEMIA
  - EDEMA, MELANOMA, INFILTRATION (6976)
- ILEOCECUM
  - VALVE, FIBERCOLONOSCOPE (6559)
- ILEUM
  - CARCINOID TUMOR, APPENDIX, RECTUM (6972)
  - COALESCENCE, REPAIR, STASIS, APPENDICITIS (6332)
  - COCAINE, 5-HYDROXYTRYPTAMINE, SUPERSENSITIVITY (6495)

  - ELECTRICAL STIMULATION, MOTILITY (6378)*
  - INTRALUMINAL PRESSURE, ACETYLCHOLINE (6500)*
  - NITROGEN MUSTARD (6389)
  - TERMINAL, REPAIR, COLO-MESENTERIC COALESCENCE (6332)
  - SMALL INTESTINE, TERMINAL, COLO-MESENTERIC COALESCENCE (6332)
  - STASIS, CHRONIC APPENDICITIS, VASCULARIZATION, PERFORATION (6332)
  - VITAMIN B12, MALABSORPTION, INTRINSIC FACTOR (6375)
- LEUS
  - CARCINOMA, PERFORATION, PERITONITIS, GALLSTONES (6950)
  - PARALYTIC, ADRENOCORTICOIDS, ALDOSTERONE (6952)
  - PARALYTIC, K+ ECONOMY, ALDOSTERONE, ADRENOCORTICOIDS (6952)
  - POSTOPERATIVE, ELECTROLYTES, WATER, METABOLIC CHANGES (6948)
  - POST-OPERATIVE, GASTRIC RESECTION, APPENDECTOMY, CHOLECYSTECTOMY (6951)
  - POST-OPERATIVE, PARALYTIC, ADHESIONS, CARCINOMA (6574)
- MMUNOCHEMISTRY
  - GASTRIN, ANTIBODIES, RADIOACTIVITY (6394)*
- MMUNOGLOBULIN
  - BILE, GALLBLADDER, MONKEY (6939)*
  - INTESTINE, NIPPOSTRONGYLUS BRASILIENSIS, IMMUNITY, RAT (7009)
  - LIVER FUNCTION, HEPATITIS, CONCENTRATIONS (6855)*
- MMUNOLOGY
  - HEPATITIS, THERAPY, ANTILYMPHOCYTIC GLOBULIN (6873)
  - LIVER CIRRHOSIS (6877)*
  - SALMONELLOSIS (6943)*
  - SALMONELLOSIS, TEMPERATURE-SENSITIVE MUTANT STRAIN, PEYER'S PATCH (6944)*
  - SERUM IMMUNOSUPPRESSIVE ACTIVITY, AZOTHIOPRINE, TRANSPLANT (6766)*
- CONTINENCE
  - SURGERY, ARTIFICIAL SPHINCTER, INTESTINE (6496)
- DIGESTION
  - PANCREATIC ENZYMES, BACTERIOSTATICS (6417)
- FECTION
  - BILE DUCTS, THERAPY, TETRACYCLINE DERIVATIVE (6922)
- INERVATION
  - LARGE INTESTINE, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*
- SULIN
  - RESPONSE, LIVER CIRRHOSIS, HEPATIC COMA (6882)*
  - VAGAL STIMULATION, BLOOD GLUCOSE, GASTRIN RELEASE (6394)*
- TESTINE
  - ABSORPTION, CALCIUM, VITAMIN D3 (6355)*
  - ABSORPTION, ESSENTIAL AMINO-ACIDS (6360)
  - ABSORPTION, HOG INTRINSIC FACTOR, IMMUNOLOGY (6356)*
  - ABSORPTION, ISONIAZID, STOMACH (6366)
  - AMINO ACID, TRANSPORT, GOLDFISH (6377)
  - AMYLASE, CHARACTERIZATION, RAT (6296)*
  - ANAPLASTIC, CARCINOMA, STOMACH, PANCREAS (6970)
  - BACTERIA, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
  - BLOOD FLOW, INFLATION, ILEUM (6500)*
  - BLOOD FLOW, INTRALUMINAL PRESSURE, ACETYLCHOLINE (6498)*
  - CHRONIC APPENDICITIS, ANATOMOPATHOLOGY (6700)
  - EPITHELIUM, PERMEABILITY, TORTOISE (6359)
  - FLORA, ANTIBACTERIAL DRUG, BONE MARROW CELL PROLIFERATION (6503)
  - FLORA, R-FACTOR TRANSMISSION, MAN (6511)
  - HISTONE UPTAKE, PERFUSED LIVER, KIDNEY (6457)
  - ILEUS, PERFORATION, RADIOGENIC STENOSIS (6950)
  - ISCHEMIA, INFARCT, PERFORATION, OBSTRUCTION (6679)
  - JEJUNUM, GASTRIC SECRETION, TEST MEAL INSTALLATION (6392)*
  - LIPOMA, OCCLUSION, ABDOMINAL PAIN, HEMORRHAGE (6676)
  - LYMPHOSARCOMA, SUBMUCOSA, INVAGINATION (6677)
  - MALABSORPTION (6689)

  - MALABOSORPTION, CROHN'S DISEASE (6688)
  - METABOLISM, 16-ACETYL GITOXIN, ACETYL GITOXIN-ALPHA (6369)
  - MUCOSA, MOTILITY, OSMOTIC VOLUME FLOW (6351)*
  - MUCOSA, PHOSPHOLIPASE, DISTRIBUTION, CHARACTERISTICS (6492)*
  - NIPPOSTRONGYLUS BRASILIENSIS IMMUNOGLOBULIN, IMMUNITY, RAT (7009)
  - NON-NEOPLASTIC DISEASE, BACTERIA (6969)
  - OBSTRUCTION, CHRONIC DIVERTICULITIS, CARCINOMA (6696)
  - OCCLUSION, GASTRIC INTURATION, ASPIRATION, DISTENSION (6674)
  - PNEUMATOSIS INTESTINALIS, ABDOMINAL CYSTS, RETROPERITONEAL AIR (6974)
  - POST-OPERATIVE FISTULA, SURGERY, CACHEXIA, ACUTE OCCLUSION (6678)
  - RADIATION INJURY, SURGERY, OBLITERATIVE VASCULITIS (6673)
  - SALMONELLOSIS, IMMUNOLOGY, PEYER'S PATCH (6944)*
  - SOUNDS (7002)
  - STENOSIS, ENTEROCOLITIS, ISCHEMIA, METEORISM (6947)
  - TRANSPORT, AMINO ACID, CARBOHYDRATES (6363)
  - ULCER, DUCTON, AMEBIASIS, NONSPECIFIC IMMUNITY (6998)
  - ULCER, SULPHATION, POLYSACCHARIDE (6659)*
  - VASOPRESSIN, AUGIOTENSIN, RESISTANCE VESSELS, SPLEEN, LIVER (6509)
  - VILLUS, LYMPHATIC, PUMP, MORPHOLOGY (6501)

  - WHIPPLE'S DISEASE, MICROORGANISMS, MUCOSA (6687)
- INTESTINE, LARGE
  - APPENDIX, DIVERTICULOSIS, APPENDICITIS, SURGERY (6718)
  - APPENDIX, TAENIA INFESTATION (7013)
  - CARCINOMA, CHEMOTHERAPY, SURGERY (6708)
  - CECUM, ANEROBES, PATHOGEN-FREE MOUSE (6497)*
  - COLON, AEROBIC, ANAEROBIC, CIRRHOSIS (6941)*
  - COLON, DIVERTICULA, SURGERY (6713)
  - COLON, ISCHEMIC COLITIS (6693)*
  - COLON, POLYP, CANCER, RADIOLOGY (6714)
  - COLON, RECTUM, CARCINOMA, ANTIGEN (6694)*
  - COLON, RECTUM, MALIGNANT TUMOR, INCIDENCE, DISTRIBUTION (6729)
  - COLON, VASCULAR OCCLUSION, RADIOLOGY (6704)
  - ENDOMETRIOSIS, CECUM, SIGMOID COLON, APPENDIX (6697)
  - EPITHELIAL CELLS, CYTOTOXICITY, LYMPHOCYTES (6730)*
  - GOBLET CELLS, A-ANTIGEN, MUCOPROTEINS (6310)*
  - INNERVATION, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*
  - MICROFLORA, IRRADIATION, ANTIBIOTICS (6930)*
  - PSEUDO-OBSTRUCTION, RADIOLOGY (6705)
  - RADIATION (6967)
  - RECTAL PROLAPSE, RIPSTEIN SURGERY, RADIOLOGY (6710)
  - RECTUM, ANUS, PEDIATRIC PROBLEMS, PROLAPSE, IMPERFORATION, ANO-RECTAL RINGS (6778)
  - RECTUM, ANUS, MALIGNANT MELANOMA (6727)
  - RECTUM, APPENDIX, CARCINOID TUMOR (6972)
  - RECTUM, MUCOSA, REGENERATION, ULCERATIVE COLITIS (6731)*
  - RECTUM, TUMOR, GARDNER'S SYNDROME (6959)
  - RECTUM, ULCER (6704)
  - SECONDARY TUMOR, SMALL INTESTINE (6682)
  - SIGMOID COLON, ACUTE VOLVULUS, TREATMENT (6712)
  - SIGMOID VOLVULUS, RESECTION (6720)
  - ULCERATIVE COLITIS, BLOOD GROUP (6937)*
  - ULCERATIVE COLITIS, SMALL INTESTINE FUNCTION, MORPHOLOGY (6732)*
  - ULCERATIVE COLITIS, ULCERATIVE PROCTITIS, FAMILY (6737)
  - ULTRASTRUCTURE, TAENIA COLI (6289)*
- INTESTINE, SMALL
  - ABSORPTION, PROTEOLYTIC ENZYME (6368)
  - CHRONIC DUODENAL ILEUS, SURGERY (6643)
  - DUODENUM, CONGENITAL DIAPHRAGMATIC OCCLUSION (6650)
  - DUODENUM, DUODENAL PAPILLA, ENDOSCOPY (6517)*
  - DUODENUM, FAMILIAL ATRESIA (6619)
  - DUODENUM, MORPHOLOGY, ENDOCRINE CELL (6284)*
  - DUODENUM, SCOLIOSIS, RADIOLOGY, SURGERY (6616)
  - ENZYMES, CAROTENE DIOXYGENASE, RETINAL (6494)*
  - EPITHELIUM, MUCOSUBSTANCE, ENTEROTOXIN STAPHYLOCOCCAL (6672)*
  - EVERTED SACS, GLUCOSE TRANSPORT, O2 AVAILABILITY (6361)
  - FATTY ACID, LIPID, METABOLISM (6493)*
  - FOLATE, CONGENITAL MALABSORPTION (6684)*
  - FUNCTION, MORPHOLOGY, ULCERATIVE COLITIS (6732)*
  - ILEUM, ELECTRICAL STIMULATION, CONTRACTION (6378)*
  - ILEUM, 5-HYDROXYTRYPTAMINE SUPERSENSITIVITY, COCAINE (6495)
  - ILEUM, NITROGEN MUSTARD (0389)
  - JEJUNUM, ABSORPTION, SODIUM, AMINO ACID (6349)*
  - JEJUNUM, BILE ACID, METABOLISM, GASTRECTOMY (6608)*
  - JEJUNUM, CYCLOHEXIMIDE, SODIUM FLUXES, CHOLERA (6942)*
  - JEJUNUM, DIVERTICULITIS (6681)
  - LESIONS, POTASSIUM THERAPY (6997)
  - MALABSORPTION, A-B-LIPOPROTEINEMIA, A-ALPHA-GLOBULINEMIA (6686)*
  - MALABSORPTION, LABORATORY DIAGNOSIS (6552)
  - MALABSORPTION, VILLOUS ATROPHY, ENTEROCYTE (6683)*
  - MIDGUT VOLVULUS, MALROTATION, RADIOLOGY (6949)
  - NON-OCCLUSIVE GANGRENE, SUPERIOR MESENTERIC ARTERY OCCLUSION (6938)*
  - PERORAL BIOPSY, ENTERITIS, SPRUE (6530)
  - PRIMARY MALIGNANT TUMOR, LARGE INTESTINE (6682)
  - RADIATION (6967)
  - TRANSPORT, AMINO ACIDS, SUGARS, VITAMIN E (6348)*
  - ULCEROGENESIS, FLUFENAMIC ACID, ENTEROHEPATIC CYCLE (6671)*
- INTRINSIC FACTOR
  - HOG, ABSORPTION, IMMUNOLOGY (6356)*
- IRON
  - ABSORPTION, HEMOGLOBIN, KWASHIORKOR (6945)*
  - ABSORPTION, SUCCINIC ACID (6357)*
- IRRADIATION
  - BACTERIA, COLON, ANTIBIOTICS (6930)*
  - GASTROINTESTINAL MICROFLORA, TISSUE DAMAGE (6932)*
  - LIVER, PERFUSED, GLUCOSE METABOLISM (6480)
  - ROTATORY, ESOPHAGEAL CARCINOMA, DEEP THERAPY (6580)*
- ISCHEMIA
  - LIVER, PORTACAVAL SHUNT, COAGULATION (6763)*
  - MYOCARDIAL, CHOLELITHIASIS, SURGERY, DISTENSION (6924)
  - MYOCARDIAL, SHOCK, PRESSURE, INFARCTION (6978)

  SUPERIOR MESENTERIC OCCLUSION, GASTRIC SECRETION, CELIAC ARTERY (6611)•
UNDICE
  ACUTE. HEPATOCELLULAR, HALOTHANE. ANESTHESIA, RADIUM THERAPY (6833)•
  CHLOROQUIN, HEPATITIS, CHOLESTASIS, RHEUMATISM (6841)
  CHRONIC FAMILIAL, DIAGNOSIS, DUBIN-JOHNSON•S SYNDROME, ROTOR•S SYNDROME (6810)
  IDIOPATHIC, LATE PREGNANCY, ELECTRON MICROSCOPY (6771)•
  NEONATE, BILIRUBIN, BILIVERDIN, PHOTOTHERAPY (6801)
  OBSTRUCTIVE, BILE-DUCTS, LITHIASIS, ULCER, DYSPEPSIA (6547)
JUNUM
  ABSORPTION, SODIUM, AMINO ACID, WATER (6349)•
  DIVERTICULITIS (6681)
  DUODENOJEJUNOSTOMY, DUODENAL ULCER, AMPULLA OF VATER (6561)
  GAS, PORTAL VENOUS SYSTEM, X-RAY (6989)
  LOOP, RABBIT, GLUCOSE PERFUSION, ABSORPTION, EXCRETION (6367)
  POLYPOSIS, PEUTZ-JEGHER•S SYNDROME (6680)
LLIKREIN
  PANCREATIC, HUMAN SERUM, TRYPSIN INHIBITION, KININ (6415)
DNEY
  FRUCTOSE DIPHOSPHATASE, LIVER, COA, ACYL CARRIER, PROTEIN (6290)•
ASHIORKOR
  IRON ABSORPTION (6945)•
  SERUM ENZYMES, TRANSAMINASES, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE, MARASMUS, MARASMIC KWASHIORKOR (6966)
MBLIASIS
  CANDIDA ALBICANS, CHILDREN, YEAST (6919)
PAROSCOPY
  CRUVEILHIER-V. BAUMGARTEN-SYNDROME, CIRRHOSIS, PORTAL HYPERTENSION (6573)
PASE
  PANCREAS, LIPOLYSIS, ADSORPTION, SODIUM TAUROCHOLATE (6413)•
PID
  BIOSYNTHESIS, LIVER, GLYCEROL INCORPORATION, ION, ATP (6442)•
  CHOLESTEROL METABOLISM, SERUM, PARTIAL HEPATECTOMY (6502)•
  CHOLESTEROL SYNTHESIS, DRUGS, RAT (6478)
  DOLICHOL, GLUCOSE ACCEPTOR, LIVER (6307)•
  ESSENTIAL FATTY ACID DEFICIENCY, LIVER PLASMA MEMBRANE, ENZYME ACTIVITY (6295)•
  FATTY, HEPATOGENIC MYOCARDOSIS, CIRRHOSIS, PORTAL HYPERTENSION (6893)
  FATTY ACID, CECUM, BACTERIA, ANTIBIOTIC, RAT (6512)
  FATTY ACID, PENT-4-ENOIC ACID INHIBITION, HEPATIC GLUCONEOGENESIS (6425)•
  FATTY LIVER, FATTY KIDNEY, NEPHROTIC SYNDROME (6892)
  FATTY LIVER, MICROSOMAL PROTEIN SYNTHESIS (6848)
  LIVER, FATTY INFILTRATION, INTRAHEPATIC PRESSURE (6563)
  LIVER, STEATORRHEA, MICELLAR PHASE, NONALCOHOLIC (6764)•
  METABOLISM, JEJUNAL MUCOSA, SUCTION BIOPSY, PROTEIN (6346)
  METABOLISM, LIVER, LINOLEATE DEFICIENCY, MOUSE (6489)
  METABOLISM, TRIELAIDIN, FATTY ACIDS, LIVER, PLASMA (6461)
  PLASMA, DIMETHYLBIGUANIDE, LIPOPROTEINS, FAT INTAKE (6800)
LIPOGENESIS
  LIVER, GLUCOSE, GLYCOGEN, ACETATE (6434)•
  LIVER ENZYMES, GROWTH, HORMONES, WEANLING RATS (6423)•
LIPOMA
  INTESTINAL, OCCLUSION, HEMORRHAGE, DIVERTICULA (6676)
LITHIASIS
  GALLBLADDER, CHOLECYSTITIS, MALE (6918)
LIVER
  ABSORPTION, K+, RB+, DIAPHRAM, TUMOR SLICES (6354)•
  ACUTE VIRAL, HEPATITIS, AUSTRALIA ANTIGEN (6867)
  ADENYL CYCLASE, PLASMA MEMBRANE, CATIONS (6428)•
  ALANINE, GLUTAMATE, OXOGLUTARATE, GUINEA PIG (6475)
  ALCOHOL DEHYDROGENASE, COMPLEX, KINETICS (6436)•
  ALCOHOLIC CIRRHOSIS, ARGININE MALATE, AMMONIEMIA (6804)
  ALCOHOLIC CIRRHOSIS, ASCITES, SURGERY (6906)
  ALPHA 2-(ACUTE PHASE) GLOBULIN, SYNTHESIS, SECRETION (6450)•
  AMEBIC ABSCESS, HEALING RATE, SCAN (7015)
  AMEBIC ABSCESS, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
  AMEBIC ABSCESS, RUPTURE, PREGNANCY (7012)
  AMINOTRANSFERASE, THEOPHYLLINE, EPINEPHRINE (6435)•
  ANESTHESIA, CIRCULATION (6843)
  ANESTHETICS, ARTERIAL HYPOTENSION, HYPOTHERMIA, HEMODYNAMICS (6840)
  ANOMALY, LEFT LOBE, GASTRIC VOLVULUS (6656)
  ARTERIALIZATION, PORTACAVAL SHUNT, PORTAL HYPERTENSION (6780)•
  ARTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)
  ARTERY, ANEURYSM, BILIARY TRACT, LIGATION (6822)
  ASPARTATE, AMINOTRANSFERASE, ISOENZYME. CC14 POISONING (6850)

ATPASE, STEROID, RAT (6339)
ATROPHY, CELL AUTOPHAGY, GLYCOGEN SEPARATION (6774)*
AUSTRALIA ANTIGEN, VIRAL HEPATITIS, CHRONIC DISEASE, ADDICTION (6860)*
BILIRUBIN, CONJUGATION, ESTROGEN, BREAST MILK JAUNDICE (6772)*
BIOCHEMISTRY, NUCLEI, CHROMATIN, RNA, DNA (6287)*
BIOPSY, ENZYMATIC DIAGNOSIS, GLYCOGEN STORAGE DISEASE, GARGOYLISM (6531)
CANCER, STERIGMATOCYSTIN, RATS, BANTU HEPATOMA (6769)*
CARBOHYDRATE METABOLISM, NICOTINAMIDE (6421)*
CARCINOGENESIS, RAT (6827)
CARCINOMA, CIRRHOSIS, JAPAN (6789)
CATABOLISM, HYDROCORTISONE (6432)*
CELL, CHROMATIN, ETHIONINE (6345)
CELL, DNA, EMBRYO, CYTOPLASM, MOUSE (6312)
CELL EXTRUSION, LYSOSOMES, ELECTRON MICROSCOPY (6834)*
CHANG'S LIVER CELL, METHIONINE, ORNITHINE ALPHA-AMINOTRANSFERASE (6431)*
CHOLECYSTO-CHOLANGIOGRAPHY, SERUM TRANSAMINASE, CHRONIC HEPATITIS (6869)
CHOLESTASIS, CHLOROQUIN, HEPATITIS, PORPHYRINURIA (6841)
CHOLESTEROL SYNTHESIS, DRUGS, RAT (6478)
CHOLINESTERASE, LIVER, CIRRHOSIS, CHOLELITHIASIS (6565)
CHRONIC AMEBIC COLITIS, SYSTEMIC EFFECTS (7017)
CHRONIC DISEASE, CANCER, HEPATITIS (6778)*
CHRONIC FAMILIAL JAUNDICE, DIAGNOSIS, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (6810)
CIRCULATION, DYE, CLEARANCE, BILIRUBIN RIFAMYCIN SV (6454)*
CIRCULATION, MEMBRANE TRANSPORT (6377)
CIRCULATION, PORTAL HYPERTENSION, ARTERIOGRAPHY (6544)
CIRCULATION, PORTAL-SYSTEMIC SHUNT (6788)
CIRCULATION, VASOCONSTRICTORS (6804)
CIRRHOSIS, ALBUMIN, BILIRUBIN, ASCITES PROGNOSIS (6899)
CIRRHOSIS, ALBUMIN METABOLISM (6902)
CIRRHOSIS, ASCITES, CORTICOIDS, ALCOHOLIC ABSTINENCE (6885)
CIRRHOSIS, ASCITES, PEPTIC ULCER, PREDNISONE (6900)
CIRRHOSIS, AZATHIOPRINE, THERAPY (6881)*
CIRRHOSIS, BLOOD GROUP, ALCOHOL (6890)
CIRRHOSIS, COMA, ASCITES, DIURETICS (6901)

CIRRHOSIS, COMA, INSULIN RESPONSE, GLUCOSE TOLERANCE (6882)*
CIRRHOSIS, GERIATRICS (6905)
CIRRHOSIS, HEMORRHAGE, GASTRIC, DUODENAL (6889)
CIRRHOSIS, HEMORRHAGE, SURGERY (6909)
CIRRHOSIS, HEPATITIS, HEMATOGENIC ETIOLOGY (6886)
CIRRHOSIS, IMMUNOLOGY (6877)*
CIRRHOSIS, MALNUTRITION, SURGERY, MALARIA (6887)
CIRRHOSIS, METABOLISM, JAUNDICE, HEPATOMEGALY (6880)*
CIRRHOSIS, OBESITY, ALCOHOLISM, ALKALINE PHOSPHATASE, PROGNOSIS (6888)
CIRRHOSIS, OXYHEMOGLOBIN, DISSOCIATION CURVE, CIRCULATION (6903)
CIRRHOSIS, PLASMA ANTI-ANGIOTENSIN ACTIVITY, PROTEIN DEFICIENCY (6896)
CIRRHOSIS, PLATELETS, INFANT (6908)
CIRRHOSIS, PORTAL HYPERTENSION, PULMONARY CIRCULATION (6875)*
CIRRHOSIS, PORTAL HYPERTENSION, RENAL FAILURE (6898)
CIRRHOSIS, RENAL FAILURE, HEPATIC COMA (6891)
CIRRHOSIS, SPLENOMEGALY, THROMBOCYTOPENIA (6883)
CLEARANCE, MILK, RADIOACTIVE GOLD-FIXATION, ABSORPTION (6371)
COLLAGEN, CARBON TETRACHLORIDE, POISONING (6448)*
COMA, CIRRHOSIS, HEPATITIS, DIABETES MELLITUS (6886)
COMA, EDEMA, UREMIA, ELECTROLYTE DISTURBANCE (6799)
COMA, INSULIN, GLUCOSE TOLERANCE (6882)*
COMA, URETEROSIGMOIDOSTOMY, CIRRHOSIS (6954)
COMA, TREATMENT, EXCHANGE TRANSFUSION METABOLIC DISTRUBANCES (6799)
CORTICOSTERONE, BINDING (6298)*
CYSTATHIONINE SYNTHASE, PYRIDOXINE EFFECT, RAT (6484)
CYSTIC CHOLANGIOMA, ANGIOGRAPHY, SCINTOGRAPHY (6798)
CYTOPLASM, NADP-DEPENDENT ISOCITRATE DEHYDROGENASE, PIG (6335)
DISEASE, ULCERATIVE COLITIS (6736)
DOLICHOL SYNTHESIS, STEREOCHEMISTRY (6476)
DRUG METABOLISM, ALPHA-IRRADIATION, MOUSE (7003)
ELECTRON TRANSPORT SYSTEM, CYTOCHROME B5, MICROSOMES, GOLGI MEMBRANE (6300)*
ENCEPHALOPATHY, EEG, CIRRHOSIS (6803)
ENCEPHALOPATHY, SURGERY (6897)
ENZYMES, ALKALINE PHOSPHATASE, AMPHOLINE, ISOELECTRIC FOCUSING COLUMN (6309)*
ENZYME, GLUTAMATE DEHYDROGENASE, SEDIMENTATION, BEEF (6337)
ESTROGENS, BILE DUCT, FUNCTION (6490)
ETHANOL, METABOLISM, RAT (6439)*
EXCRETION, BILE ACID, BILE SALT (6362
FAILURE, MYOCARDIAL INFARCTION (6809)
FAILURE, PERITONEAL DIALYSIS, DRUG INTOXICATION (6964)
FATTY, ALCOHOL, TRANSAMINASE, SILYMARIN (6910)
FATTY, FATTY KIDNEY, NEPHROTIC SYNDROME (6892)

ATTY, MICROSOME, PROTEIN SYNTHESIS (6898)
ATTY, PREVENTION, VITAMIN (6777)•
ATTY, SILYMARIN, ALCOHOL, ADIPOSITY, DIABETES MELLITUS (6910)
RRITIN, TUMOR, RAT (6990)
TAL, HYDROCORTISONE, GLYCOGEN, HEPATOCYTES (6483)
BRINOGEN, SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
BRINOGEN, SYNTHESIS, RELEASE (6455)
BROGENESIS, CIRCULATION, CIRRHOSIS (6895)
XATION, ELECTRON MICROSCOPY, GLUTARALDEHYDE (6319)
LIC ACID, HEPATITIS, CIRRHOSIS, CANCER (6773)•
UCTOSE DIPHOSPHATASE, KIDNEY, COA, ACYL CARRIER PROTEIN (6290)•
LMINANT NECROSIS, HALOTHANE, ANESTHESIA (6847)
NCTION, BLOOD FLOW, HIGH ALTITUDE (6471)
NCTION, PEPTIC ULCER, BSP RETENTION (6657)•
NCTION, NUTRITIONAL EDEMA (7000)
NCTION TEST, VIRAL HEPATITIS, COMPUTER ANALYSIS (6858)•
LACTOSAMINE HEPATITIS, OROTATE (6845)
UCONEOGENESIS, FATTY ACID, OXIDATION, PENT-4-ENOIC ACID INHIBITION (6425)•
UCONEOGENESIS, TRANSAMINASES, AGE, CHICKEN. GUINE [illegible]
UCONEOGENESIS STIMULATION, INSULIN, FREE FATTY ACIDS, FASTING, IN VITRO, RAT (6486)
UCOSE-6-PHOSPHATASE, GLYCOGEN, TRYPANOSOMA GAMBIENSE, GUINEA PIG (7018)
UCOSYLATION, ACCEPTOR-LIPID, DOLICHOL (6307)•
YCERALDEHYDEPHOSPHATE DEHYDROGENASE BOVINE (6327)
YCOGEN, DAB CARCINOGENESIS, HISTOCHEMISTRY (6316)
YCOGEN, ISOLATION, SODIUM IOTHALAMATE (6331)
YCOGEN SYNTHESIS, INHIBITION (6470)
YCOLYSIS, GLUCONEOGENESIS, DIABETES, MAN, RAT (6794)
MANGIOENDOTHELIOMA, HEMOLYTIC ANEMIA (6819)
MIHEPATECTOMY, TECHNIQUE (6793)
MODYNAMICS, DRUG, ALCOHOL (6768)•
MORRHAGE, TOXEMIA, PREGNANCY (6835)•
PATITIS, ALCOHOL, FATTY LIVER (6846)
PATITIS, AZATHIOPRINE, IMMUNOSUPPRESSIVE THERAPY (6874)
PATITIS, CELLULAR IMMUNITY, HYPERGAMMAGLOBULINEMIA (6871)
PATITIS, JAUNDICE, CIRRHOSIS, NEOPLASM (6859)•
PATOCYTE, ULTRASTRUCTURE, METAMORPHOSIS (6318), (6323)
PATOCYTE, ULTRASTRUCTURE, OXYGEN DEFICIENCY HYPEROXIA (6849)
HEPATOGENIC MYOCARDOSIS, FATTY, CIRRHOSIS, PORTAL HYPERTENSION (6893)
HEPATOMA, ALDOLASES (6818)
HEPATOMA ASCITES CELL, ULTRASTRUCTURE, NUCLEASE, PROTEASE (6765)•
HEPATOMA, CIRRHOSIS (6829)
HEPATOMA, FERRITIN (6813)
HEPATOMA, OLIGONUCLEOTIDES, 28S RIBOSOMAL RNA (6817)
HEPATOMA, PYRUVATE KINASE, DIET (6821)
HILUM, CARCINOMA, ANATOMY, HISTOLOGY (6825)
HISTOLOGY, FUNCTION, PULMONARY TUBERCULOSIS (6988)
HISTONE UPTAKE, PERFUSED, INTESTINE, KIDNEY (6457)
HOMOGENATES, CHOLESTEROL BIOSYNTHESIS (6426)•
HOMOTRANSPLANT, BILE, HOST (6826)
HOMOTRANSPLANT, REJECTION, BILIRUBIN, ENZYME ACTIVITIES (6767)•
HYDATID CYST SCINTOGRAPHY, AU 198 (6578)
HYDATIDOSIS, INDIA (7020)
HYPERTENSIVE, STEROID REDUCTION, 4-3-KETOSTEROID (6430)•
IDIOPATHIC JAUNDICE, LATE PREGNANCY, ELECTRON MICROSCOPY (6771)•
INFECTIOUS MONONUCLEOSIS, RENAL INVOLVEMENT (6999)
INJURY, CATABOLISM, HYDROCORTISONE (6432)•
INJURY, CIRCULATION, LYMPHATICS, CIRRHOSIS (6904)
INJURY, SURGERY (6786)
INTRAHEPATIC BILE DUCT, ANEURYSMAL DILATION, SURGERY, CHILDREN (6808)
INTRAHEPATIC PRESSURE, FATTY INFILTRATION (6563)
IOGLYCAMIDE, BILIRUBIN, CHOLESTEROL (6797)
ISCHEMIA, PORTACAVAL SHUNT, COAGULATION (6763)•
JAUNDICE, HEPATITIS, PORPHYRURIA, GASTRIC MUCOSA (6841)
KUPPFER CELL, METABOLISM, PHAGOCYTOSIS (6427)•
LAPAROSCOPY, CRUVEILHIER-V. BAUMGARTEN SYNDROME, PORTOUMBILICAL ANASTOMOSIS CIRRHOSIS (6573)
LESIONS, LUNGS, PYRROLE DERIVATIVES, PYRROLIZIDINE ALKALOIDS (6844)
LIPID BIOSYNTHESIS, GLYCEROL INCORPORATION, ATP (6442)•
LIPID METABOLISM, LINOLEATE DEFICIENCY MOUSE (6489)
LIPOGENESIS, FATTY ACID SYNTHESIS, GLYCOGEN (6434)•
LIPOGENESIS, GROWTH, HORMONES, ENZYMES (6423)•
LYSOSOME, LIPOPROTEIN, KIDNEY, ISOLATION (6338)
METABOLISM, CARBON TETRACHLORIDE, ESTRADIOL (6449)•
METABOLISM, IMMUNOGLOBULIN TURNOVER, HEPATITIS (6855)•
METABOLISM, LYNESTRENOL (6460)

METABOLISM, MICROSOME, NADPH, CYTOCHROME C REDUCTASE (6420)•
METABOLISM, PHOSPHATIDYLINOSITOL, RAT (6464)
METABOLISM, WILSON'S DISEASE, GENETICS (6811)
MICROCIRCULATION, PORTAL HYPERTENSION (6805)
MICROSOMAL MEMBRANES, VITAMIN E, PEROXIDATION INHIBITION (6305)•
MICROSOME, GLUCOSE, XYLOSE, DEHYDROGENASE (6465)
MICROSOME, APO-CYTOCHROME 65 (6315)
MICROSOME, 18-HYDROXYLASE, C19 STEROID (6445)•
MICROSOME, ENDOPLASMIC RETICULUM, HEMOPROTEIN, CO-BINDING PIGMENT (6452)•
MICROSOME, PHENYLALANINE, MICROSOMAL RNA (6446)•
MILK, KUPFFER CELLS, RADIOACTIVE GOLD, ABSORPTION (6371)
MITOCHONDRIA, AMINE-OXIDASE, BEEF (6485)
MITOCHONDRIA, BINDING, TRIMETHYLTIN, TRIETHYLTIN (6444)•
MITOCHONDRIA, DNA, X-RADIATION, REGENERATION (6443)•
MITOCHONDRIA, DNA SYNTHESIS, ENZYME (6474)
MITOCHONDRIA, MALATE DEHYDROGENASE, ISOZYMES, RAT (6336)
MITOCHONDRIA, NEGATIVE STAINS, ELECTRON MICROSCOPY, BIOCHEMICAL PATTERN (6313)
MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, TIRANDAMYCIN, RAT (6469)
MITOCHONDRIA, RADIOACTIVITY, PROTEIN (6301)•
MITOCHONDRIA, REDOX PIGMENT, ACYLATED PROTEIN (6325)
MITOCHONDRIA, TRIIODOTHYRONINE, PROTEIN TURNOVER (6291)•
MORRIS HEPATOMA, TRANSPLANTABLE, CELL CYCLES (6816)
NEOPLASM, RNA, PARENCHYMA (6303)•
NONALCOHOLIC, STEATORRHEA, MICELLAR PHASE (6764)•
NON-PARASITIC CYSTS, TRANSTHORACIC HEPATOTOMY (6807)
NORMAL, TECHNETIUM 99M SULFIDE, SCINTILLATION CAMERA (6321)
NOVIKOFF HEPATOMA, HISTONE DEACETYLASE (6459)
NUCLEI, DNA DEGRADATION (6343)
NUCLEI, MITOCHONDRIA, RNA, CORTISONE (6424)•
NUCLEI, RNA POLYMERASE ASSAY, ALPHA-AMANITIN (6317)
NUCLEI, RNA POLYMERASE, ADRENALECTOMY, ALPHA-IRRADIATION (6458)
NUCLEOHISTONE, CIRCULAR DICHROISM (6329)
NUCLEOTIDE, TRNA METHYLASES, RAT (6341)
OBIDOXIN, TOXICITY, PARENCHYMAL DAMAGE, FATTY LIVER (6467)
ORTHOTOPIC TRANSPLANT, DOG (6742)
PARENCHYMA, NEPHROTOXIC SERUM, HEPATIC VEIN, OCCLUSION, GRANULOMA (6853)
PARTIAL RESECTION, SERUM, CHOLESTEROL METABOLISM (6502)•
PATHOLOGY, ALCOHOLIC, CIRRHOSIS (688
PATHOLOGY, PIPE STEM FIBROSIS, PORTAL HYPERTENSION, SCHISTOSOMIASIS (7004)•
PERFUSION, METABOLISM, ENZYME ACTIVIT (6491)
PITUITARY, HORMONES, TRNA, AMINO-ACID (6482)
PLASMA MEMBRANE, ESSENTIAL FATTY ACID DEFICIENCY, ENZYME ACTIVITY, NUCLEO TIDE (6295)•
PLASMA MEMBRANE, HEPATOMA, ATPASE (6292)•
PLASMA MEMBRANE, HORMONE BINDING, ADENYL CYCLASE (6447)•
POLYRIBOSOME, STABILITY, GEL FILTRATION, RAT (6340)
POLYSOMES, RIBONUCLEOPROTEIN, NUCLEI (6311)
PORPHYRIN, METABOLISM, EXPERIMENTAL POISONING (6839)
PORTACAVAL ANASTOMOSIS, ORGAN CHANGE (6933)•
PORTAL HYPERTENSION, NORMAL MORPHOLO (6779)•
PRIMARY CANCER, HEXAMETHYLMELANINE (6796)
PRIMARY CARCINOMA, ASCITES, JAUNDICE (6828)
PRIMARY CARCINOMA, CIRRHOSIS (6806)
PROGESTOGEN METABOLISM, RABBIT (6488
PROTEIN, RNA, DNA (6440)•
PROTEIN FACTOR, LIPASE, PANCREAS (6303)•
PROTEIN SYNTHESIS, MAGNESIUM DEFICIE CY, ALBUMIN SYNTHESIS (6438)•
PYRAMIDONE METABOLISM, PORTAL CIRRHOSIS, MICROSOMAL OXIDASE (6814)
RAT, PERFUSED, IRRADIATION, GLUCOSE, METABOLISM (6480)
RAT, PEROXIDATION, ALDEHYDE (6437)•
REGENERATING, PROGESTERONE, METABOLI (6453)•
RESECTION, CIRCULATORY CHANGE (6791)
RESECTION, ULTRASTRUCTURE, HEPATOCY (6477)
RIBONUCLEASE, INHIBITOR, AGE (6468)
SCAN, AMEBIC ABSCESS (7016)
SERINE DEHYDRATASE, PANCREAS, ADRENA DIET, RAT (6479)
SERUM HEPATITIS, AUSTRALIA ANTIGEN (6868)
SINUSOIDAL ENGORGMENT, CENTRAL VEIN DILATION, CONGESTIVE HEART FAILURE (6929)•
SUGAR DEHYDROGENASES, CHROMATOGRAPHY ELECTROPHORESIS (6324)
TRANSAMINASE, CELL DAMAGE, CHRONIC STAGE (6347)
TRANSAMINASE, HISTOLOGICAL CORRELAT (6347)
TRANSPLANT, HISTOLOGY, HISTOCHEMIST (6823)
TRANSPLANT, MAN (6792), (6815)
TRANSPLANTATION, AZOTHIOPRINE, SERU

    - IMMUNOSUPPRESSIVE ACTIVITY (6766)•
  - TRAUMA, LEFT LOBE (6787)
  - TRAUMA, LESIONS, POLYVISCERAL, CENTRAL HEMATOMA (6836)
  - TRIELAIDIN, HEPATIC LIPID, PLASMA (6461)
  - TRNA, SERINE-ACCEPTING CAPACITY, ESTRADIOL, IMMATURE HENS (6481)
  - TUMOR, DIETHYLNITROSAMINE, GLUCOSE-6-PHOSPHATASE, ALDOLASE (6761)•
  - TYROSINE TRANSAMINASE, AMANITINE, CORTISOL (6451)•
  - TYROSINE TRANSAMINASE, CORTISOL, PYRIDOXINE (6441)•
  - ULTRASTRUCTURE, ENDOTOXIC SHOCK (6928)•
  - ULTRASTRUCTURE, PUROMYCIN, POLYRIBOSOMAL DISAGGREGATION (6830)•
  - ULTRASTRUCTURE, TOXOHORMONE, RAT (6286)•
  - VASCULAR ANATOMY, CARCINOMA (6322)
  - VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, SPLEEN, INTESTINE (6509)
  - VENOUS CIRCULATION, DOG (6508)
  - VENOUS OUTFLOW BLOCK, STRUCTURE (6802)
  - VIRAL HEPATITIS, CIRRHOSIS, BLOOD GROUP (6937)•
  - VIRAL HEPATITIS, DRUG USERS (6857)•
  - VIRAL HEPATITIS, HIM-TEST, LIVER FUNCTION (6550)
  - VIRAL HEPATITIS, KENYA (6866)
  - VIRAL HEPATITIS, MORBIDITY, MORTALITY, ISRAEL (6865)
  - XANTHINE OXIDASE, DITHIOERYTHRITOL (6466)
- UNG
  - ESOPHAGOBRONCHIAL FISTULA, DYSPHAGIA, DIVERTICULA, ACHALASIA (6590)
- YMPHANGIOGRAPHY
  - PANCREATITIS, DIFFERENTIAL DIAGNOSIS (6567)
- YMPHATIC
  - COLON, LYMPHOGRAPHY, DOG (6505)
  - INTESTINE, VILLUS, PUMP, MORPHOLOGY (6501)•
  - LIVER INJURY, CIRCULATION, CIRRHOSIS (6904)
- YMPHOCYTE
  - HEMAGGLUTINATION, RNA, DNA, HEPATITIS (6254)•
  - INCUBATION, SERUM, EPITHELIAL CELLS, COLON (6730)•
- YMPHOGRANULOMATOSIS
  - FEVER, HODGKIN'S DISEASE, LYMPH NODES, IRRADIATION (6539)
- AGNESIUM
  - DRUG METABOLISM, MICROSOME, ACTIVATION (6420)•
- ALABSORPTION
  - CONGENITAL, FOLIC ACID (6681)•
  - DISACCHARIDE INTOLERANCE (6690)
  - INTESTINAL (6689)
  - INTESTINAL, CHRONIC PANCREATITIS, CROHN'S DISEASE (6688)
  - IRON SORBITOL INJECTION (6692)
  - JEJUNAL MUCOSA, SUCTION BIOPSY, PROTEINS (6346)
  - LABORATORY DIAGNOSIS, SMALL INTESTINE (6552)
  - LACTOSE, CONGENITAL, DUODENUM (6691)
  - SMALL INTESTINE, A-B-LIPOPROTEINEMIA, COELIAC DISEASE, A-ALPHA-GLOBULINEMIA (6686)•
  - SMALL INTESTINE, VILLOUS ATROPHY, ENTEROCYTE (6683)•
  - VITAMIN B12, ABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
- MARASMUS
  - SERUM ENZYMES, TRANSAMINASES, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE KWASHIORKOR, MARRAMIC KWASHIORKOR (6966)
- MEGACOLON
  - DILATATION, MUSCLE HYPERTROPHY, PARKINSON'S DISEASE, MULTIPLE SCLEROSIS (6723)
- MELANOBLASTOMA
  - ANORECTUM, HEMORRHOIDS, MALPIGHIAN MUCOSA (6724)
- MELANOMA
  - GALLBLADDER, CHOLECYSTECTOMY, METASTASES (6920)
  - PRIMARY, MALIGNANT, ESOPHAGUS (6579)•
  - PROTEIN DEFICIENCY, GASTROINTESTINAL PARTICIPATION, METASTASES (6976)
- MELANOSIS
  - ESOPHAGUS, PRIMARY, MALIGNANT (6579)•
- MEMBRANE
  - CELLULAR, CHITINASE, MUCOSA, LACERTA VIRIDIS (6401)
  - PLASMA, PHOSPHOLIPID, PROTEIN, SUPERNATANT FRACTION (6292)•
- MESENTERY
  - INFARCTION, ISCHEMIA, PANCREATITIS, SHOCK (6978)
  - MICROANGIOGRAPHY, X-RAY SENSITIVE VIDICON (6342)
- METABOLISM
  - ALBUMIN, LIVER, CIRRHOSIS (6902)
  - ANTIMETABOLITES, HEPATIC ARTERY, PERFUSION (6852)
  - BILIRUBIN, BILIVERDIN, NEONATE, BLUE LIGHT (6801)
  - BIOCHEMICAL LESION, ALCOHOLISM (6851)
  - CARBOHYDRATE, LIVER, NICOTINAMIDE (6421)•
  - CHOLESTEROL ESTERIFICATION, SERUM, HEPATECTOMY (6502)•
  - COPPER, WILSON'S DISEASE, GENETICS (6811)
  - DISORDERS, DIABETIC, CHOLELITHIASIS (6923)
  - DRUG, LIVER, GAMMA-IRRADIATION, MOUSE (7003)
  - DRUG, RETICULOENDOTHELIAL SYSTEM, HORMONE (6472)
  - ETHANOL, LIVER, RAT (6439)•
  - FOLIC ACID, LIVER DISEASE, HISTIDINE DERIVATIVES (6773)•
  - GLUCOSE, HEPATITIS, FATIGUE, HEMOCONCENTRATION (6872)
  - GLYCOCHOLIC ACID, JEJUNUM, GASTRECTOMY (6608)•
  - GLYCOGEN SYNTHESIS, INHIBITION, LIVER (6470)
  - HYPERTENSIVE LIVER, 4-3-KETASTEROID REDUCTION (6430)•

  - INTESTINE, RESORPTION, 16-ACETYL GITOXIN, ACETYL GITOXIN-GAMMA (6369)
  - KUPPFER CELL, LIVER, PHAGOCYTOSIS (6427)*
  - LIPID, LIVER, LINOLEATE DEFICIENCY, MOUSE (6489)
  - LIVER, DOLICHOL SYNTHESIS, STEROCHEMISTRY (6476)
  - LIVER, ESTRADIOL, ESTRONE, CARBON TETRACHLORIDE (6449)*
  - LIVER, FIBRINOGEN SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
  - LIVER, FIBRINOGEN, SYNTHESIS, RELEASE (6455)
  - LIVER, GLUCONEOGENESIS, FATTY ACID, OXIDATION, PENT-4-ENOIC ACID (6425)*
  - LIVER, GLUCOSE TRANSFER, ACCEPTOR LIPID (6307)*
  - LIVER, LYNESTRENOL (6460)
  - LIVER, PERFUSION, ENZYME ACTIVITY (6491)
  - LIVER, PERFUSION, IRRADIATION, GLUCOSE (6480)
  - LIVER, PHOSPHATIDYLINOSITOL, RAT (6464)
  - LIVER, PROGESTOGEN, RABBIT (6488)
  - LIVER, RNA, CATHEPSIN (6440)*
  - MICROSOME, MAGNESIUM ACTIVATION, DRUG METABOLISM (6420)*
  - PEROXIDATION, ALDEHYDE, LIVER (6437)*
  - PHOSPHATIDYLETHANOLAMINE, ETHANOLAMINE MOUSE (6487)
  - PORPHYRIN, LIVER, POISONING (6839)
  - POSTOPERATIVE ILEUS, ELECTROLYTE, WATER, ACID-BASE (6948)
  - PROGESTERONE, REGENERATING LIVER (6453)*
  - RATE CONSTANTS, GASTROINTESTINAL TRACT (6374)
  - WILSON'S DISEASE, DIAGNOSIS, TREATMENT COPPER (6820)
- METAL
  - ENVIRONMENTAL, CADMIUM, ELIMINATION, CARDIOVASCULAR DISEASE (6740)
- METASTASIS
  - INTRA-ABDOMINAL, MELANOMA, CHOLECYSTECTOMY, 14-YEAR LATENCY (6920)
- MICROORGANISM
  - AEROBIC, ANAEROBIC, COLON, CIRRHOSIS (6941)*
- MICROSCOPY
  - ELECTRON MICROSCOPY, GASTRIC MUCOSA, MUCOUS CELL (6304)*
- MICROSOME
  - LIVER, ELECTRON TRANSPORT, CYTOCHROME B5, GOLGI (6300)*
  - LIVER, HYDROXYLASE, STEROIDS (6445)*
  - MEMBRANE, LIVER, VITAMIN E, PEROXIDATION (6305)*
  - RNA, LEUCINE, HOMOGENIZATION (6446)*
- MITOCHONDRIA
  - ALDEHYDE, MEMBRANE, LIVER (6437)*
  - DNA, X-RAY, SEDIMENTATION (6443)*
  - LIVER, BINDING, OXIDATIVE PHOSPHORYLATION, TRIMETHYLTIN, TRIETHYLTIN (6444)*
  - LIVER, RNA SYNTHESIS, CORTISONE (6424)*
  - LIVER, TRIIODOTHYRONINE, PROTEIN TURNOVER (6291)*
  - MEMBRANE, 35S-LABEL, ELECTROPHORESIS (6301)
- MORPHINE
  - SPHINCTER OF ODDI, SPASM, MUSCULAR HYPERTROPHY (6927)
- MORPHOLOGY
  - MAST CELLS, DEGRANULATION, VACUOLATION (6283)*
  - RUMEN EPITHELIUM, SODIUM, OVINE (63
- MOTILITY
  - CONSTIPATION, CARMINE, FECES (6528)
  - ESOPHAGEAL, STENOSIS, ACHALASIA, DYSCHALASIA (6601)
  - GASTRIC, ELECTROMYOGRAM, PACE-SETTER POTENTIALS (6387)
  - GASTRIC EMPTYING, FOODSTUFFS (6384)
  - GASTROINTESTINAL TRACT, DIAZEPAM, DUODENAL ULCER (6391)
  - INTESTINAL, DEHYDROBENZPERIDOL, FENTANYL, KETAMINE (6385)
  - MUCOSA, VOLUME FLOW, TRANSMURAL POTENTIAL (6351)*
  - SMALL INTESTINE, ILEUM, ELECTRICAL, STIMULATION (6378)*
  - TAENIA COLI, TEMPERATURE, GUINEA PIG (6386)
- MUCOCELE
  - APPENDIX, TUMOR, EXTRACECAL, ILEOCEC (6726)
- MUCOSA
  - GASTRIC, AMINE STORING CELLS, MORPHOLOGY (6285)*
  - GASTRIC, BLOOD LOSS, ASPIRIN (6614)*
  - GASTRIC, GASTRITIS, ATROPHIC, DIGESTION (6628)
  - GASTRIC, INORGANIC IONS, CHOLINERGIC, LACERTA VIRIDIS (6401)
  - GASTRIC, PYLORUS, ANTRUM, PREPYLORIC ANTRUM (6638)
  - INTESTINE, RAT, PHOSPHOLIPID, DISTRIBUTION (6492)*
  - JEJUNAL, SUCTION BIOPSY, LIPID METABOLISM, ALKALINE PHOSPHATASE (6346)
  - STOMACH, AMINE STORING CELLS (6285)*
  - STOMACH, HEALING, SQUAMO-COLUMNAR JUNCTION (6607)*
- MUSCLE
  - LARGE INTESTINE, TAENIA COLI, ULTRASTRUCTURE (6289)*

- NEOMYCIN
  - LACTULOSE, HEPATIC ENCEPHALOPATHY (6522)*
- NEONATE
  - LIVER, PROTEIN, METABOLISM (6440)*
- NERVOUS SYSTEM
  - ABDOMINAL VAGOTOMY, CARDIA COMPETENCE DUODENAL ULCER (6642)
  - ADRENEGIC INNERVATION, CHROMAFFIN CELLS, HUMAN FETUS (6328)
  - HEPATIC ENCEPHALOPATHY, SURGERY (6897
  - LIMBIC SYSTEM, CEREBRAL RELEASE, GASTRIC ACID INHIBITOR (6408)
  - PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)

- VAGOTOMY, GASTRODUODENAL ANASTOMOSIS, ANTRECTOMY, RADIOLOGY (6648)
- VON RECKLINGHAUSEN'S DISEASE, MALIGNANT CARCINOID, AMPULLA OF VATER (6726)

CLEIC ACID
- 28S RIBOSOMAL RNA, OLIGONUCLEOTIDES NOVIKOFF HEPATOMA (6817)
- DNA, HEPATOCYTE, EMBRYO, CYTOPLASM, MOUSE (6312)
- DNA, LIVER NUCLEI, DEGRADATION (6343)
- DNA SYNTHESIS, MITOCHONDRIA, LIVER, ENZYME (6474)

CLEOPROTEIN
- DNA, RNA, ANAL GLANDS, RABBIT, FEULGEN REACTION (6344)

CLEOTIDE
- OLIGO-, 28S RIBOSOMAL RNA, NOVIKOFF HEPATOMA, LIVER (6817)
- TRNA METHYLASES, LIVER, RAT (6341)

TRITION
- EDEMA, LIVER FUNCTION (7000)
- MAL-, DIARRHEA, DIPHENOXYLATE HYDROCHLORIDE THERAPY, INFANT (6965)
- MAL-, PHYSICAL GROWTH (6968)

ESITY
- LIVER CIRRHOSIS, ALCOHOLISM, ALKALINE PHOSPHATASE, PROGNOSIS (6888)

IDOXIN
- TOXOGONIN, PARENCHYMAL DAMAGE, ALKALINE PHOSPHATASE (6467)

CLUSION
- CONGENITAL, ANNULAR PANCREAS, NEONATAL SURGERY (6640)
- POST-OPERATIVE, SMALL INTESTINE, GASTRIC INTUBATION, ASPIRATION (6674)
- SUPERIOR MESENTERIC ARTERY, NON-OCCLUSIVE INTESTINAL GANGRENE (6938)*

TEOMALACIA
- DIAGNOSIS, CELIAC DISEASE (6685)*

YGEN
- AVAILABILITY, GLUCOSE TRANSPORT, SMALL INTESTINE '6361)
- CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, DUODENUM, PANCREAS (6507)
- HYPOXIA, HYPEROXIA, ANOXIA, HEPATOCYTE (6849)

IN
- ABDOMEN, ULCERS, DYSPEPSIA, HIATAL HERNIA (6551)
- ABDOMINAL, REFLUX, ESOPHAGITIS (6570)
- CHRONIC, PANCREATITIS, SPLANCHNICECTOMY, FIBROSIS, SURGERY (6752)

NCREAS
- AMPULLA OF VATER, PANCREOZYMIN, BILE, PANCREATOGRAPHY (6516)*
- AMPULLA OF VATER, OBSTRUCTION, ABDOMINAL PAIN (6916)
- AMYLASE, SALIVA, REDUCING SUBSTANCE, GLYCOGEN (6418)
- ANAPLASTIC CARCINOMA, INTESTINE, STOMACH (6970)
- ANNULAR, NEONATAL SURGERY, DUODENAL OCCLUSION (6640)
- ARTERIOGRAPHY, SCINTOGRAPHY, METHIONINE, PANCREATITIS (6562)
- ASCARIASIS, ACUTE ABDOMEN (7007)
- CALCIFICATION, ETIOLOGY, CEYLON (6750)
- CANCER, ISLET CELL TUMOR, VATER'S PAPILLA, ADENOCARCINOMA (6744)
- CANCER, PANCREATITIS, CHRONIC, ALCOHOLIC (6746)
- CARCINOMA, IDIOPATHIC STEATORRHEA, GLUTEN-FREE DIET (6739)
- CHRONIC PANCREATITIS, DIAGNOSIS, MANAGEMENT (6760)
- CHRONIC PANCREATITIS, PANCREOZYMIN-SECRETIN TEST (6757)
- CHRONIC PANCREATITIS, RADIOLOGY (6759)
- CYCLIC AMP, THEOPHYLLINE, ENZYMES (6412)*
- CYSTIC FIBROSIS, GENETICS (6748)
- ENDOSCOPY, CANCER (6519)*
- ENZYME, DYSENTROZYM, BACTERIOSTATICS, QUINOLINE DERIVATIVES (6417)
- ENZYME, PANCREATITIS, HEMORRHAGE, SERUM AMYLASE (6756)
- ENZYME ACTIVITY, SOYBEAN FLOUR (6410)*
- HYPERPARATHYROIDISM, SECRETIN-PANCREOZYMIN, AMYLASE, LIPASE (6936)*
- INSULAR CARCINOMA, HETEROTOPIA, ENTERIC SEQUESTRATION, SURGERY (6742)
- LIPASE, ADSORPTION, SODIUM TAUROCHOLATE (6413)*
- LIPASE, INHIBITION, PROTEIN FACTOR (6303)*
- O2 CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, DUODENUM (6507)
- PANCREATITIS, ACUTE, RECURRENT, BILIARY LITHIASIS (6754)
- PANCREATITIS, ACUTE, RECURRENT, SERUM AMYLASE, HYPOTHERMIA (6756)
- PANCREATITIS, DUCT SYSTEM, RADIOGRAPHY (6749)*
- PANCREATITIS, UROLITHIASIS, BLOOD GROUP (6937)*
- PATHOLOGY, DIAGNOSIS, ENZYMES, SERUM VALUES (6548)
- PERFUSION, SECRETIN, DOG (6414)
- PSEUDOCYSTS, ACUTE PANCREATITIS, LITHIASIS, HYDATID CYST (6745)
- PSEUDOCYSTS, SURGERY, LITHIASIS, PORTAL HYPERTENSION (6745)
- RUPTURE, PANCREATECTOMY, HEMORRHAGE, WIRSUNG CANAL (6743)
- SCANNING, PANCREATITIS, PSEUDOCYSTS, TUMORS (6535)
- SECRETION, ACETYLCHOLINE, VICHY WATER, AMYLASE (6416)
- SECRETION, ENZYME, PERFUSION, AMINO ACID (6409)*
- SURGERY, CHRONIC PANCREATITIS, DRAINAGE, CIRRHOSIS (6758)
- TRANSPLANTATION, ALLOGRAFTS, ISLET CELL FUNCTION, NEPHROPATHY (6736)
- TRAUMA, CONTUSION, RUPTURE, PSEUDOCYST (6741)
- TRYPSIN INHIBITORS, KALLIKREIN, HUMAN SERUM (6415)
- TUMOR, HYPOGLYCEMIA, HYPERINSULINISM, COMA (6747)

PANCREATECTOMY
- RUPTURE, PSEUDOCYST, DRAINAGE, EXCISION (6741)

- PANCREATICOJEJUNOSTOMY
  - PANCREATITIS, CHRONIC, ALCOHOLIC, CANCER (6746)
- PANCREATITIS
  - ACUTE, BLOOD FLOW, EDEMA, VASO-DILATATION (6753)
  - ACUTE, CHOLELITHIASIS, FATTY NECROSIS, INTRAABDOMINAL (6751)
  - ACUTE, CHRONIC, PSEUDOCYSTS, SE75 BILIARY LITHIASIS (6754) METHIONINE (R535)
  - ACUTE, RECURRENT, POST-OPERATIVE,
  - ACUTE, RECURRENT, SERUM AMYLASE, MICROCIRCULATORY DYNAMICS (6756)
  - CHRONIC, ARTERIOGRAPHY, SCINTOGRAPHY, SELENOMETHIONINE (6562)
  - CHRONIC, CANCER, PANCREATICOJEJUNOSTOMY, WIRSUNG'S DUCT (6746)
  - CHRONIC, DIAGNOSIS, GLUCOSE TOLERANCE TEST (6523)•
  - CHRONIC, LYMPHANGIOGRAPHY, DIFFERENTIAL DIAGNOSIS (6567)
  - CHRONIC, SPLANCHNICECTOMY, ALCOHOLISM, PANCREATIC FIBROSIS (6752)
  - CHRONIC, SURGERY, DRAINAGE, CIRRHOSIS (6758)
  - ENZYMES, SERUM, URINE, DUODENAL, SECRETIONS (6548)
  - HISTOPATHOLOGY, LESIONS, FIBROSIS (6749)•
  - METHEMALBUMIN, HEMORRHAGE, ABDOMINAL EMERGENCY (6940)•
  - SCINTILLOGRAPHY, SELENOMETHIONINE SE75 (6755)
  - SECRETIN, CHRONIC PANCREATITIS, SURGERY, STOOL ANALYSIS (6757)
- PAPILLA OF VATER
  - CANCER, ANEMIA, JAUNDICE (6744)
- PARASITE
  - BILHARZIASIS, HEMATURIA, ANTIBODIES (7008)
  - CESTODIASIS, TREATMENT, NICLOSAMIDE (7010)
  - HOOKWORM, IODOTHYMOL PIPERAZINE THERAPY (7006)
  - NEMATODES, THERAPY (7019)
  - TAENIA INFESTATION, APPENDIX (7013)
- PARASITIC DISEASE
  - ACUTE AMEBIC DYSENTERY, DRUGS, ANTIBIOTICS (7021)
  - AMEBIC LIVER ABSCESS, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
  - AMEBIC LIVER ABSCESS, RUPTURE, PREGNANCY (7012)
  - ASCARIASIS, PANCREAS, ACUTE ABDOMEN (7007)
  - CESTODIASIS, TREATMENT, NICLOSAMIDE (7010)
  - CHRONIC AMEBIC COLITIS SYSTEMIC EFFECTS, LIVER (7017)
  - HEPATIC AMEBIC ABSCESS, SCAN (7016)
  - HEREDITARY TELANGIECTASIA, GASTROINTESTINAL HEMORRHAGE (6956)
  - HOOKWORM, ANEMIA, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
  - HYDATIDOSIS, LIVER, INDIA (7020)
  - LIVER, AMEBIC ABSCESS, HEALING RATE, SCAN (7015)
- PARATHYROID
  - CALCIUM ABSORPTION, DIET, THYROIDECTOMY (6350)•
- PARATYPHOID FEVER
  - SEROLOGY, O-HEMAGGLUTINATION, O-H-VI-AGGLUTINATION, ANTIBODIES, TYPHOID (6538)
- PENTAGASTRIN
  - STIMULATION, GASTRIC SECRETION, RESPONSE (6398)•
  - STIMULATION, HISTIDINE DECARBOXYLASE, STOMACH (6397)•
- PEPSIN
  - ANALYSIS, ABSORBANCE, P-NITROPHENYL SULFITE (6521)•
- PERFORATION
  - COLON, INTESTINAL RESISTANCE (6695)
  - ESOPHAGUS, RUPTURE, PATHOLOGY (6602)
  - GASTRIC, ISCHEMIA, MESENTERIC INFARCT, ILEUM (6679)
- PERFUSION
  - ACID, ESOPHAGITIS, HEARTBURN (6570)
  - RAT LIVER, IRRADIATION, GLUCOSE, GLYCOGEN (6480)
- PERIDIVERTICULITIS
  - CARCINOMA, SIGMOID, STENOSIS, NUTRITIONAL STATE (6703)
- PERITONEUM
  - DIALYSIS, INFECTION (6957)
  - DIALYSIS, LIVER, TRAUMA, HEMORRHAGE, CENTRAL HEMATOMA (6836)
  - EMERGENCY PERITONEOSCOPY, TRAUMA (6558)
  - FLUID, AMMONIA, APPENDICITIS, ILEUS (6572)
  - FLUID FLUX, PLASMA CLEARANCE, SERUM ALBUMIN, RABBIT (6373)
  - FLUID, MAST CELLS, HISTAMINE (6283)•
  - PERITONITIS, APPENDICITIS, PEPTIC ULCER, DIVERTICULITIS (6961)
- PERITONITIS
  - ACUTE ABDOMEN, SURGERY, UTERUS, ILEUS (6702)
- PERNICIOUS ANEMIA
  - ACHLORHYDRIA, BLOOD LOSS, ASPIRIN (6614)•
- PHOTOTHERAPY
  - HYPERBILIRUBINEMIA, NEONATE, BLUE LIGHT, BILIVERDIN (6801)
- PITUITARY GLAND
  - HORMONAL REGULATION, TRNA, HYPOPHYSECTOMY, LIVER (6482)
- PLASMA
  - AUSTRALIA ANTIGEN, SERUM GLUTAMIC OXALACETIC TRANSAMINASE, HEPATITIS CARRIER (6862)
- PNEUMATOSIS INTESTINALIS
  - ABDOMINAL CYSTS, RETROPERITONEAL AIR, CHILAIDITI SYNDROME (6974)
  - CYSTOIDES, COLON, DIAGNOSIS, THERAPY (6698)
- POISON
  - CC14, ASPARTATE-AMINOTRANSFERASE ISOENZYMES, LIVER (6850)
- POLYP
  - RECTOCOLITIS, CARCINOMA, VILLOUS TUMOR (6706)
- POLYPOSIS

  - JEJUNUM, PEUTS-JEGHER'S SYNDROME (6680)
- RPHYRIA
  - METABOLISM, LIVER, POISONING (6839)
- RTACAVAL SHUNT
  - CIRRHOSIS, COLON, AEROBIC, ANAEROBIC, MICROFLORA (6941)•
  - GASTRIC HYPERSECRETION, INTESTINAL PHASE, HORMONE (6392)•
  - LIVER, ISCHEMIA, COAGULATION, SERUM ENZYME, THROMBIN TIME, PLATELET (6763)•
  - PORTAL HYPERTENSION, LIVER, ARTERIALIZATION (6933)•
  - RENAL FAILURE, ALCOHOLIC CIRRHOSIS (6876)•
- RTAL HYPERTENSION
  - ARTERIALIZATION, LIVER, PORTACAVAL SHUNT (6780)•
  - LIGATION, CHILDREN, ESOPHAGEAL VARICE, PROPHYLAXIS (6812)
  - NORMAL LIVER MORPHOLOGY (6779)•
- EGNANCY
  - CHOLESTASIS, ESTROGEN INDUCTION (6783)
  - TOXEMIA, HEPATIC HEMORRHAGE (6835)•
- OTEIN
  - ACYLATED, REDOX PIGMENT, LIVER, MITOCHONDRIA (6325)
  - ALBUMIN, CIRRHOSIS, BILIRUBIN, ASCITE, PROGNOSIS (6899)
  - ALBUMIN METABOLISM, LIVER, CIRRHOSIS (6902)
  - FACTOR, LIVER, INHIBITION, LIPASE, PANCREAS (6303)•
  - HISTONE UPTAKE, PERFUSED LIVER, INTESTINE, KIDNEY (6457)
  - LIPO-, LYSOSOMES, HEPATIC, RENAL, ISOLATION (6338)
  - MALNUTRITION, DIMETHOATE, ACUTE ORAL TOXICITY, RAT (6995)
  - MICROSOMAL SYNTHESIS, FATTY LIVER (6848)
  - MITOCHONDRIA, LIVER, MEMBRANE (6301)•
  - NUCLEOHISTONE, LIVER, CIRCULAR DICHROISM (6329)
  - RIBONUCLEO-, LIVER, POLYSOMES, NUCLEI (6311)
  - SERUM, MORRIS HEPATOMA (6762)•
  - SYNTHESIS, LIVER, MAGNESIUM, ALBUMIN (6438)•
  - TURNOVER, LIVER MITOCHONDRIA, TRIIODOTHYRONINE (6291)•
- OTEOLYSIS
  - INDIGESTION, PANCREATIC ENZYMES, QUINOLINE DERIVATIVES (6417)
- LORIC ANTRUM
  - ECTOPIC JUNCTION, BILE-DUCT, CHOLANGIOGRAPHY, ULCER (6667)
- LOROPLASTY
  - DUODENAL ULCER, Z INCISION, PYLORIC VEIN (6623)
  - GASTRODUODENAL ULCERS, VAGOTOMY, VAGAL STIMULATION (6627)
- LORUS
  - ANTRUM, ENDOSCOPY, GASTRIC MUCOSA, FIBROMUSCULAR ATRESIA (6638)
  - EPITHELIUM, HISTOLOGY, ULTRASTRUCTURE, CAT (6314)
  - PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)
  - STENOSIS, GASTRIC COMPLICATION, HYPERTROPHY, ULCER, CARCINOMA, GASTRITIS (6618)
  - STENOSIS, GASTROJEJUNOSTOMY, RADIOLOGY, METHOCLOPRAMIDE (6568)
  - Z PYLOROPLASTY, MONKEY, HIATAL HERNIA, VAGOTOMY (6623)
- PYRIDOXINE
  - DEFICIENCY, GASTRIC TISSUE, HISTAMINE BIOSYNTHESIS, HISTIDINE DECARBOXYLASE (6403)
- RADIATION
  - ESOPHAGEAL LESION, LUNG DENSITY, X-RAY, COBALT-60 GAMMA-RAYS (6581)
  - GAMMA, ADRENALECTOMY, LIVER NUCLEI, RNA POLYNERASE (6458)
  - GAMMA, LIVER DRUG METABOLISM, MOUSE (7003)
  - INJURY, SIGMOID STENOSIS, METASTASES, OVARIAN TUMOR (6577)
  - INTESTINE (6967)
  - INTESTINE, ILEUS, GENITAL CARCINOMA (6673)
  - THERAPY, CARCINOMA, COLON (6975)
  - THERAPY, STOMACH, CARCINOMA (6625)
  - X-RAYS, MITOCHONDRIA, C14-THYMIDINE (6443)•
- RADIOACTIVE DETERMINATION
  - PROTEIN, NEONATE (6440)•
- RADIOACTIVE GASTRIN
  - BIOLOGICAL ACTIVITY, ELECTROPHORESIS (6402)
- RADIOGRAPHY
  - CHRONIC APPENDICITIS, LYMPHOCYTE COUNT, INFLAMMATION (6721)
  - COLON, DIVERTICULOSIS, STENOSIS, TUMOR (6576)
  - ESOPHAGEAL RING, RADIOGRAPH, ESOPHAGEAL STENOSIS (6606)
  - INTESTINAL LIPOMA, OCCLUSION, ABDOMINAL PAIN (6676)
  - MUCOCELE, APPENDIX, EXTRACECAL, ILEOCECAL (6726)
  - PANCREATITIS, BLOOD VESSELS (6749)•
  - PARALYTIC ILEUS, ADRENOCORTICOIDS, K+ ECONOMY, WATER RETENTION (6952)
  - PYLORUS, STENOSIS, GASTROJEJUNOSTOMY, METHCLOPRAMIDE (6568)
- RADIOTHERAPY
  - LYMPHOSARCOMA, INTESTINE, CELLULAR INFILTRATION (6677)
  - MESENCHYMAL TUMORS, GASTRECTOMY, FIBROSARCOMA (6655)
- RECTOCOLITIS
  - POLYP, SINGLE, DIFFUSE, VILLOUS (6706)
- RECTUM
  - AMPULLA, ELECTROLYTE, TRANSPORT, RENAL (6699)
  - AMPULLA, PAPILLOMA, EPITHELIOMA, SACRAL (6701)
  - AMPULLA, TRANSPORT, ELECTROLYTE, SALURETIC (6370)
  - ANORECTAL ANOMALIES, CONGENITAL, SURGERY (6719)
  - CANCER, RECTOSIGMOIDOSCOPY, POLYPS, OCCULT BLOOD (6520)•

  - CECUM, URINE, ROADRUNNER (6506)
  - CROHN'S DISEASE, ULCEROUS, REGIONAL ENTERITIS (6716)
  - ECHOVIRUS ANTIBODY, NASOPHARYNX, SPINAL FLUID (6931)*
  - MALIGNANT MELANOMA, ANUS (6727)
  - MALIGNANT TUMOR, INCIDENCE, DISTRIBUTION (6729)
  - MUCOSA, REGENERATION, ULCERATIVE COLITIS (6731)*
  - PERFORATION, CONTRAST FLUID, INTESTINAL RESISTANCE (6695)
  - PROLAPSE, ANO-RECTAL RINGS (6778)
  - PROLAPSE, RIPSTEIN SURGERY, RADIOLOGY (6710)
  - RECTOCOLITIS, POLYP, SINGLE, DIFFUSE, CARCINOMA (6706)
  - TUMOR, GARDNER'S SYNDROME (6959)
  - ULCER (6704)
  - ULCERATIVE PROCTITIS, FAMILY (6737)
- REFLUX
  - CORRECTIVE SURGERY, ESOPHAGEAL DILATATION, HELLER OPERATION (6594)
- REGENERATION
  - LIVER, PROGESTERONE METABOLISM (6453)*
- REGIONAL ENTERITIS
  - CROHN'S DISEASE, ULCEROUS, RADIOGRAPHY (6716)
- RENAL DISEASE
  - FAILURE, ALCOHOLIC CIRRHOSIS, PORTACAVAL SHUNT (6876)*
- RESECTION
  - APPENDECTOMY, AGE (6711)
  - CHOLEDOCHOTOMY, TRANSDUODENAL ROUTE (6913)
  - COLECTOMY, ULCERATIVE COLITIS, GRANULOMA (6734)
  - ESOPHAGOJEJUNAL ANASTOMOSIS, GASTRECTOMY (6631)
  - GASTRECTOMY, VAGOTOMY, PEPTIC ULCER (6660)
  - GASTRIC, VAGOTOMY, DRAINAGE, DUODENAL STUMP (6653)
  - HEMI-HEPATECTOMY, TECHNIQUE (6793)
  - LIVER, CIRCULATORY CHANGE (6791)
  - LIVER, ULTRASTRUCTURE, HEPATOCYTE (6477)
  - PARTIAL HEPATECTOMY, CHOLESTEROL METABOLISM, SERUM (6502)*
  - SIGMOID COLON, ACUTE VOLVULUS (6720)
  - STOMACH, GASTRIC CARCINOMA (6629)
  - STOMACH, PRIMARY TUMOR, CHILDREN (6647)
  - STOMACH, STEROID ULCER, HEMORRHAGE (6666)
  - STOMACH, TRANSPORT (6637)
  - TRANSTHORACIC HEPATOTOMY, NON-PARASITIC CYSTS (6807)
  - URETEROSIGMOIDOSTOMY, HEPATIC COMA, CIRRHOSIS (6954)
- RESORPTION
  - INTESTINE, 16-ACETYL GITOXIN, ACETYL GITOXIN-GAMMA, METABOLISM (6369)
- RESPIRATORY SYSTEM
  - PULMONARY TUBERCULOSIS, LIVER FUNCTION HISTOLOGY (6988)
- RESPIRATORY TRACT
  - ESOPHAGEAL LESION, RADIOGRAPHY, LUNG DENSITY (6581)
- RIBONUCLEASE
  - RNA, TUMOR CELLS, BASOPHILIA (6303)*
- RIBONULEIC ACID
  - LIVER SYNTHESIS, NUCLEI, MITOCHONDRIA, CORTISONE (6424)*
  - NOVIKOFF HEPATOMA ASCITES CELLS, COMPOSITION, NUCLEUS (6781)*
  - SYNTHESIS, SUPPRESSION, CORTISOL (6451)*
  - TRANSFER, HENS, SERYL-TRNA, ESTRADIOL (6481)
- RIBOSOME
  - LIVER, FERRITIN, CIRRHOSIS, CANCER (6602)
- SALIVA
  - PANCREATIC AMYLASE, CATALYTIC PROPERTIES, STARCH (6418)
- SALMONELLOSIS
  - IMMUNOLOGY (6943)*
- SARCOIDOSIS
  - EPITHELIOID CELL GRANULOMA, LIPOGRANULOMA, LIVER (6776)*
- SCHISTOSOMIASIS
  - PIPE STEM FIBROSIS, PORTAL HYPERTENSION (7004)*
- SCINTOGRAPHY
  - LIVER, ECHINOCOCCOSIS (6578)
  - PANCREAS, PANCREATITIS, LIVER SCANNING SE75 METHIONINE (6535)
  - SELENOMETHIONINE SE75, PANCREATITIS (6755)
- SECRETIN
  - ADMINISTRATION, INFUSION, INJECTION, DUODENUM (6411)*
  - GASTRIC SECRETION, DUODENAL ACIDIFICATION (6398)*
  - HORMONES, CHEMICAL STRUCTURE SYNTHESIS (6333)
  - STOMACH, EMPTYING, SECRETION (6379)*
- SECRETION
  - DUODENUM, SECRETIN, INFUSION, INJECTION (6411)*
  - ENZYME, PANCREAS, PERFUSION, DUODENUM (6409)*
  - GASTRIC ACID, MAXIMUM (6524)
  - GASTRIC, ACID, PEPSIN, HISTAMINE (6394)*
  - GASTRIC, ACID, PREDNISOLONE, HISTALOG, PHENTOLAMINE (6396)*
  - GASTRIC, ALTERATION, INDOMETHACIN (6395)*
  - GASTRIC, CHIEF CELL, AMINO ACID, MUCOSA, PRODUCTIN (6288)*
  - GASTRIC, INHIBITION, CEREBRAL RELEASE, LIMBIC SYSTEM (6408)
  - GASTRIC, LACTIC ACID, CARCINOMA (6613)*
  - GASTRIC, PATHOLOGY, LYSOZYME ACTIVITY (6652)
  - GASTRIC, PENTAGASTRIN (6542)
  - GASTRIC, PEPSIN, ANALYSIS (6521)*
  - GASTRIC, RESPONSE, DUODENAL ACIDIFICATION (6398)*
  - GASTRIC, STIMULATION, PENTAGASTRIN, HISTAMINE (6379)*
  - LIVER, ALPHA2-(ACUTE PHASE) GLOBULIN, SYNTHESIS (6450)*

  STOMACH, DUODENAL ACIDIFICATION (6398)•
  STOMACH, SECRETIN, CHOLECYSTOKININ (6379)•
  STOMACH, TETRAGASTRIN (6404)
ERUM
  METHEMALBUMIN, PANCREATITIS (6940)•
GMOID
  CARCINOMA, PERIDIVERTICULITIS, ILEUS, STENOSIS (6703)
  STENOSIS, RADIATION INJURY, METASTASES, RESECTION (6577)
ECTROPHOTOMETRY
  ABSORPTION CURVE, ALBUMIN, BILIRUBIN (6770)•
HINCTER
  ANAL, ELECTROMYOGRAPHY (6532), (6533)
  ARTIFICIAL, IMPLANTED, SEROSA THICKENING, INCONTINENCE (6496)
  ODDI, FLOW RESISTANCE, VAGOTOMY, CHOLECYSTOKININ (6382)•
  ODDI, MORPHINE, SPASM, HYPERTROPHY, COMMON BILE-DUCT (6927)
  PRESSURE, ESOPHAGEAL MOTILITY, SPASM, ACHALASIA (6601)
LANCHNICECTOMY
  CHRONIC PANCREATITIS, PANCREATIC FIBROSIS, ALCOHOLISM (6752)
LEEN
  HYPERSPLENISM, PORTAL HYPERTENSION (7001)
  VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, INTESTINE, LIVER (6509)
EATORRHEA
  IDIOPATHIC, CARCINOMA, PANCREAS (6739)
  INTESTINAL MALABSORPTION, EDEMA, DIARRHEA (6688)
  NONALCOHOLIC LIVER, DISEASE, LIPID (6764)•
ATOSIS
  RABBIT, DIMETHYLBIGUANIDE, PLASMA LIPID (6800)
ENOSIS
  ATYPICAL, RADIATION INJURY, METASTASES ILEUS (6577)
  ESOPHAGEAL RING, RADIOGRAPHY, PATHOLOGY, DYSPHAGIA (6606)
ROID
  ATPASE, LIVER, RAT (6359)
  CORTICOSTEROID CLEARANCE, GASTROINTESTINAL TRACT (6365)
  CORTICOSTERONE BINDING, LIVER (6298)•
  4-3-KETO-REDUCTION, HYPERTENSIVE LIVER (6430)•
  GASTROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, CYTOSTATICS (6982)
  LYNESTROL, LIVER, METABOLISM (6460)
  PROGESTERONE, METABOLISM, REGENERATING LIVER (6453)•
  PROGESTOGEN METABOLISM, LIVER, RABBIT (6488)
  ULCER, GASTRECTOMY, HEMORRHAGE (6666)
MACH
  ABSORPTION, ISONIAZID, SMALL INTESTINE (6366)
  ACID INHIBITOR, CEREBRAL RELEASE, LIMBIC SYSTEM (6408)
  ACID SECRETION, ANTICHOLINERGICS, HISTALOG (6612)•
  ACID SECRETION, GASTRIC STIMULATION, DRUGS (6396)•
  ACID SECRETION, MAXIMUM (6524)
  ACIDITY, AGE, HISTAMINE, MICE (6407)
  ADENOCARCINOMA, CANCER (6610)•
  ANAPLASTIC CARCINOMA, INTESTINE, PANCREAS (6970)
  BIOPSY, FIBERGASTROSCOPE (6553)
  BLOOD FLOW, ACID SECRETION, MESENTERIC OCCLUSION (6611)•
  BUTTRESS, ACUTE PERFORATION, ESOPHAGUS DOG (6585)
  CANCER, MESENCHYMAL, LYMPHORETICULOSARCOMA, POLYPOID (6655)
  CANCER, ULCER, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
  CARCINOMA, BENIGN POLYP (6622)
  CARCINOMA, CYTOLOGY, GASTROSCOPY (6546)
  CARCINOMA, GASTRIC JUICE, LACTIC ACID (6613)•
  CARCINOMA, RADIATION THERAPY (6625)
  CARCINOMA, SURGERY (6629)
  CARDIA COMPETENCE, ABDOMINAL VAGOTOMY, DUODENAL ULCER (6642)
  CHRONIC GASTRITIS, MUCOSA, BIOPSY (6628)
  CINEGASTROSCOPY (6560)
  COMPLICATION, PYLORIC STENOSIS, ULCER, CARCINOMA, GASTRITIS (6618)
  DISTENSION, STENOSIS, PORTAL HYPERTENSION (6510)
  EARLY CANCER, GASTRO-FIBERSCOPE, BIOPSY (6545)
  EMPTYING, FOODSTUFFS (6384)
  ENDOSCOPY, POLYPOID LESIONS (6569)
  EROSION, GASTRITIS, GASTROSCOPY (6641)
  EROSION, HEMORRHAGE, ESOPHAGUS (6635)
  ESOPHAGOGASTRIC RECONSTRUCTION, DYSPHAGIA, ANASTOMOSIS (6589)
  FISTULA, HISTAMINE, PENTAGASTRIN (6406)
  GASTRECTOMY, TRANSPORT (6637)
  GASTRIC POUCH, GASTRODUODENAL ANASTOMOSIS, VAGOTOMY, ANTRECTOMY, RADIOLOGY (6648)
  GASTRIC SECRETION, PIG, ACID OUTPUT (6394)•
  GASTROCAMERA, BIOPSY, EARLY CARCINOMA (6571)
  GASTROCAMERA, FIBERSCOPE, CARCINOMA (6537)
  GLOMUS TUMORS (6630)
  HEMORRHAGE, DUODENUM, LIVER CIRRHOSIS (6889)
  IRON ABSORPTION, VITAMIN B12, WHOLE-BODY IRRADIATION (6651)
  JUICE, PEPSIN, INHIBITION (6399)
  MICROSCOPY, MUCOUS CELL, DIFFERENTIATION (6304)•
  MOBILIZATION, ESOPHAGEAL REPLACEMENT (6599)
  MUCOSA, AMINE-STORING CELLS, CHARACTERISTICS (6285)•
  MUCOSA, AMINO ACIDS, CHIEF CELL, PRODUCTIN (6288)•

  - MUCOSA, HISTAMINE, 5-HYDROXYTRYPTAMINE DOPAMINE (6404)
  - MUCOSA, HISTIDINE DECARBOXYLASE, RAT (6397)*
  - MUCOSA, VOLTAGE RESPONSE, DIRECT CURRENT, FROG (6390)
  - MUCOSA, WOUNDING, HEALING, SQUAMOCOLUMNAR JUNCTION (6607)*
  - MUSCULATURE, LAPAROSCOPY, ELECTRICAL ACTIVITY, ELECTROMYOGRAM (6387)
  - O2 CONSUMPTION, ARTERIOVENOUS SHUNT, DUODENUM, PANCREAS (6507)
  - OBSTRUCTION, CARCINOMA, DUODENAL ULCER TUBERCULOSIS (6634)
  - PACKING, GASTRODUODENAL HEMORRHAGE (6649)
  - PARIETAL CELL, CARBONIC ANHYDRASE, LOCALIZATION (6308)*
  - PRIMARY TUMOR, CHILDREN, RESECTION (6647)
  - PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)
  - RADIOGRAPHY, CARCINOMA, POLYP,ULCER (6555)
  - SECRETION, ACIDITY, PORTACAVAL SHUNT (6392)*
  - SECRETION, DUODENAL ACIDIFICATION (6398)*
  - SECRETION, PATHOLOGY, LYSOZYME ACTIVITY (6652)
  - SECRETION, PENTAGASTRIN (6542)
  - SECRETION, TETRAGASTRIN (6404)
  - STEROID ULCER, GASTRECTOMY, HEMORRHAGE (6666)
  - SURGERY, GASTRIC DECOMPRESSION, BILIARY TRACT (6646)
  - ULCER, ASPIRIN INGESTION (6661)
  - ULCER, CANCER (6617)
  - ULCER, CARCINOMA, ATHEROSCLEROSIS, GERIATRICS, RADIOLOGY (6620)
  - ULCER, DEVELOPMENT, SULFATION, POLYSACCHARIDE (6659)*
  - ULCER, GASTRECTOMY, VAGOTOMY (6660)
  - ULCER, GASTRIC MUCOPROTEIN, DOG (6654)
  - ULCER, GASTRO-COLIC FISTULA (6994)
  - ULCER, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
  - ULCER, PSYCHOSOMATIC, ANXIOSPASMOLYTIC (6665)
  - ULCER, RELAPSE, RECURRENCE, PROTRACTION (6664)
  - ULCER, TREATMENT (6670)
  - UPPER, CARDIA, ESOPHAGOSCOPY (6543)
- STRICTURE
  - ILEUM, CHERRY STONES, ISCHEMIA, PERFORATION (6679)
- SUGAR
  - A-METHYL-D-GLUCOSIDE, INTESTINAL TRANSPORT, VITAMIN E (6348)*
- SURGERY
  - ABDOMINAL, PERITONITIS, ILEUS, PUERPERIUM (6702)
  - ABDOMINAL, TRAUMA, DUODENAL INJURY (6541)
  - ANORECTAL ANOMALIES, CONGENITAL (6719)
  - APPENDECTOMY, APPENDICITIS, LYMPHOCYTE COUNT (6721)
  - BILLROTH I, STOMACH, DUODENUM, ULCER (6626)
  - CHOLELITHIASIS, CHOLECYSTECTOMY, CHOLEDOCHOTOMY (6912)
  - CHRONIC PANCREATITIS, BILIARY DRAINAGE, SPHINCTEROTOMY (6758)
  - CHRONIC PANCREATITIS, PANCREATICOJEJUNOSTOMY, CANCER (6746)
  - CHRONIC PANCREATITIS, SPLANCHNICECTOM PANCREATIC FIBROSIS (6752)
  - CIRRHOSIS, PORTACAVAL ANASTOMOSIS, ADHESIONS (6887)
  - DIVERTICULITIS, CARCINOMA, COLECTOMY, COLOSTOMY (6696)
  - DOGS, ARTIFICIAL SPHINCTER, INCONTINENCE (6496)
  - DYSPHAGIA, ESOPHAGEAL DILATATION, HELLER OPERATION (6594)
  - ESOPHAGOBRONCHIAL FISTULA, DYSPHAGIA, DIVERTICULA (6590)
  - ESOPHAGOGASTRIC RECONSTRUCTION, GASTRIC MUCOSA, ANASTOMOSIS (6589)
  - GASTRECTOMY, DUMPING SYNDROME, ULCER RESECTION, MALABSORPTION (6636)
  - GASTROENTEROSTOMY, VAGOTOMY, DUODENAL ULCER (6663)
  - GASTROINTESTINAL TRACT, NEONATE (695
  - HEPATIC ENCEPHALOPATHY (6897)
  - HIATUS HERNIA (6584)
  - HIATUS HERNIA, HYPOCHROMIC ANEMIA, THROMBOSIS, ULCER (6595)
  - ILEUS, AGED PATIENTS, CARCINOMA, PERFORATION (6950)
  - INTESTINE, POST-OPERATIVE FISTULA, ACUTE OCCLUSION (6678)
  - LAPAROTOMY, ACUTE, MOTILITY (6977)
  - LIGATION, PORTAL HYPERTENSION, SHUNT OPERATION, THROMBOSIS (6812)
  - LIVER, CIRRHOSIS, ADRENALECTOMY (679
  - LIVER, CIRRHOSIS, HEMORRHAGE (6909)
  - LIVER INJURY (6786)
  - LUMBAR HERNIA, PELVIC COLON, REPAIR (6722)
  - MEGACOLON, HEMICOLECTOMY, ILEOPROCTOSTOMY (6723)
  - NEONATAL, DUODENAL OCCLUSION, GASTROSTOMY (6640)
  - PANCREAS, RUPTURE, HEMORRHAGE, WIRSUNG CANAL (6743)
  - PANCREATIC HETEROTOPIA, INSULAR CARCINOMA, GASTRIC TUMORS (6742)
  - PANCREATIC PSEUDOCYSTS, DIABETES (6745)
  - PANCREATITIS, ACUTE, CHOLELITHIASIS, POST-OPERATIVE (6754)
  - PANCREATITIS, STOOL ANALYSIS, PANCRE ZYMIN-SECRETIN TEST (6757)
  - POSTOPERATIVE DRAINAGE, AUTOMATIC PUMP, GASTROINTESTINAL, ASPIRATION (6985)
  - POSTOPERATIVE OCCLUSION, ELECTROLYTE HEMODYNAMICS, DISTENSION (6674)
  - RADIATION INJURY, SIGMOID STENOSIS, METASTASES (6577)
  - RECONSTRUCTIVE, ESOPHAGEAL ATRESIA, COLON TRANSPLANT (6583)
  - RECTAL AMPULLA, SACRAL APPROACH, TUMOR, EXTERNAL SPHINCTER (6701)

- TRACHEOESOPHAGEAL FISTULA, ESOPHAGEAL ATRESIA (6588)
- ULCER, PYLOROPLASTY, VAGOTOMY (6627)
- Z PYLOROPLASTY, HIATAL HERNIA, VAGOTOMY, VASCULARIZATION (6623)

DROME
- CRUVEILHIER-V, BAUMGARTEN, LIVER, CIRRHOSIS, PORTOUMBILICAL ANASTOMOSIS (6573)
- DUMPING, GASTRECTOMY, RESECTION, MALABSORPTION (6636)
- GARDNER'S, TUMOR, RECTUM (6959)
- MALABSORPTION, INTESTINAL (6689)
- MALABSORPTION, IRON SORBITOL INJECTION (6692)
- NEPHROTIC, FATTY LIVER, FATTY KIDNEY (6892)
- PEUTZ-JEGHERS, JEJUNUM, POLYPOSIS (6680)
- ROTOR'S, DUBIN-JOHNSON'S, CHRONIC FAMILIAL JAUNDICE (6810)

NIA COLI
- MOTILITY, TEMPERATURE, GUINEA PIG (6386)

PERATURE
- TAENIA COLI, MOTILITY, GUINEA PIG (6386)

RAPY
- CHEMO-, CARCINOMA, LARGE BOWEL, MAMMARY, RENAL (6708)
- IMMUNOLOGY, ANTILYMPHOCYTIC GLOBULIN, HEPATITIS (6873)

OMBOCYTOPENIA
- LIVER, CIRRHOSIS, SPLENOMEGALY (6883)

OMBOSIS
- HIATAL HERNIA, HYPOCHROMIC ANEMIA, MYELOGRAM, HEMOGLOBIN (6595)

EMIA
- PREGNANCY, HEPATIC HEMORRHAGE (6835)•

CITY
- ACUTE ORAL, DIMETHOATE, PROTEIN MALNUTRITION, RAT (6995)
- ANESTHESIA, LIVER, CONJUGATING CAPACITY, HEMODYNAMICS (6840)
- LIVER, TRANSAMINASES, ALKALINE PHOSPHATASE, OBIDOXIN (6467)

N
- ALPHA-AMANITIN, RNA POLYMERASE ASSAY, LIVER NUCLEI (6317)
- CHOLERA, ELECTROPHORETIC MOBILITY, FORMALIN (6514)
- ENTERO-, STAPHYLOCOCCAL, SMALL INTESTINE (6672)•
- ENTERO-, VIBRIO CHOLERA, BIOCHEMISTRY (6513)

SPLANT
- BILE DUCT, TRACHEAL ALLOGRAFT (6917)
- COLON, INFANT, ESOPHAGEAL ATRESIA, TRACHEOESOPHAGEAL FISTULA (6583)
- HOMO-, LIVER, BILE (6826)
- LIVER, AZOTHIOPRINE, SERUM IMMUNOSUPPRESSIVE ACTIVITY (6766)•
- LIVER, HISTOLOGY, HISTOCHEMISTRY (6823)
- LIVER, HUMAN (6815)
- LIVER, MAN (6792)
- ORTHOTOPIC, LIVER, DOG (6742)
- PANCREAS, CANINE ALLOGRAFTS, TERMINAL NEPHROPATHY (6736)

TRANSPORT
- CARMINE, FECES, CONSTIPATION (6528)
- ELECTROLYTE, WATER, RECTUM, AMPULLA, RENAL (6699)
- GLUCOSE, SMALL INTESTINE, O2 AVAILABILITY (6361)
- INTESTINAL, AMINO ACID, SUGAR (6363)
- LIVER, TRIGLYCERIDE, PROTEIN DEPLETION SERUM APOPROTEIN (6934)•
- MEMBRANE, HEPATIC CIRCULATION (6377)
- MITOMYCIN C, EHRLICH ASCITES TUMOR CELLS, IN VITRO (6790)
- RATE CONSTANTS, GASTROINTESTINAL TRACT (6374)
- RECTUM, AMPULLA, ELECTROLYTE, SALURETIC (6370)
- VOLTAGE RESPONSE, DIRECT CURRENT, GASTRIC MUCOSA, FROG (6390)
- WATER, INTESTINAL MUCOSA, OSMOTIC VOLUME FLOW (6351)•

TRAUMA
- ABDOMINAL, DUODENAL, PANCREATIC, ADRENAL (6541)
- EMERGENCY PERITONEOSCOPY (6558)
- LIVER, LEFT LOBE (6787)
- LIVER, TRAFFIC ACCIDENT, FIREARMS, LESION (6836)
- PANCREAS, RUPTURE, DRAINAGE, EXCISION (6741)
- PANCREAS, RUPTURE, HEMORRHAGE, PSEUDOCYSTS (6743)

TRIGLYCERIDE
- ABSORPTION, METABOLISM (6358)•
- METABOLISM, INTESTINAL CONCENTRATION, LIPID MEAL (6493)•
- TRANSPORT, FATTY LIVER, SERUM APOPROTEIN (6934)•
- TRIELAIDIN, INGESTION, HEPATIC LIPID, UNSATURATION (6461)

TRYPSIN
- INHIBITION, PANCREATIC KALLIKREIN (6415)

TUMOR
- ABDOMEN, MALIGNANT, RADIOLOGY, DIAGNOSIS, TREATMENT, CHILDREN (6960)
- ADENOMA, GALLBLADDER, EXTRA HEPATIC BILE DUCTS (6914)
- ADENOMA, STOMACH, SARCOMA, DUODENUM (6610)•
- CARCINOGEN, SODIUM CYCLAMATE, SACCHARIN, SUCROSE (6515)
- CARCINOID, APPENDIX, ILEUM RECTUM (6972)
- CUTANEOUS, MELANOBLASTOMA, ANORECTUM, MALPIGHIAN MUCOSA (6724)
- EHRLICH ASCITES CELLS, CYTOSTATIC, IN VITRO, TRANSPORT (6790)
- ESOPHAGUS, TRANSCATHETER BIOPSY (6536)
- EXTRA-PANCREATIC, HYPOGLYCEMIA, HYPERINSULINISM, ADRENOCORTICAL (6747)
- GASTRIC, PANCREATIC HETEROTOPIA, DYSTROPHY (6742)
- GLOMUS, STOMACH (6630)
- HAMARTOMA, ESOPHAGUS, DIAGNOSIS (6586)
- HEPATOMA, ALDOLASES (6818)
- HEPATOMA, CIRRHOSIS (6829)
- HEPATOMA, FERRITIN (6813)

HEPATOMA, PYRUVATE KINASE, DIET (6821)
HYPOCHONDRIUM, ANGIOGRAPHIC DIAGNOSIS, CHILDREN (6525)
ISLET, ULCERATION, METASTASES, INSULIN (6644)
LIVER FERRITIN, RAT (6990)
LIVER, HEMANGIOENDOTHELIOMA, HEMOLYTIC ANEMIA (6819)
LIVER, ULTRASTRUCTURE, TOXOHORMONE (6286)•
MALIGNANT, COLON, RECTUM, INCIDENCE, DISTRIBUTION (6729)
MALIGNANT, VILLOUS, ADENOMA, DUODENAL, OBSTRUCTION (6675)
MALIGNANT MELANOMA, ANUS, RECTUM (6727)
MESENCHYMAL, RADIOTHERAPY, POLYPOID, FIBROSARCOMA, NEUROSARCOMA (6655)
MORRIS HEPATOMA, SERUM LIPOPROTEIN (6762)•
NOVIKOFF HEPATOMA, HISTONE DEACETYLASE (6459)
NOVIKOFF HEPATOMA, LIVER, OLIGONUCLEOTIDES, 28S RIBOSOMAL RNA (6817)
PANCREATIC, DUODENAL, ULCERATION, ENDOCRINE (6644)
PARATHYROID ADENOMA, DUODENAL CARCINOMA (6621)
PRIMARY, STOMACH, CHILDREN, RESECTION (6647)
PRIMARY, MALIGNANT, SMALL INTESTINE, LARGE INTESTINE (6682)
RECTUM, GARDNER'S SYNDROME (6959)
RETROPERITONEAL, COLON, RADIOTHERAPY (6975)
TRANSPLANTABLE, MORRIS HEPATOMA, CELL CYCLES (6816)

TYPHOID FEVER
SEROLOGICAL DIAGNOSIS, HEMAGGLUTINATION, VI-ANTIBODIES, PARATYPHOID (6538)

TYROSINE
TRANSAMINASE, PYRIDOXINE, HOLOENZYME (6441)•

ULCER
DUODENAL, DYSTONIA, VAGOTOMY, GASTROENTEROSTOMY (6663)
DUODENAL, VAGOTOMY, DRAINAGE (6662)
DUODENUM, ANTIPEPTIC, ANTICHOLINERGIC (6658)•
GASTRIC, ANXIOSPASMOLYTIC, DIGLIUM, PSYCHOSOMATIC ORIGIN (6665)
GASTRIC, ASPIRIN INGESTION (6661)
GASTRIC, CANCER (6617)
GASTRIC, CARCINOMA, ATHEROSCLEROSIS, GERIATRICS, RADIOLOGY (6620)
GASTRIC, DUODENAL, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
GASTRIC, GASTRO-COLIC FISTULA (6994)
GASTRIC, INTESTINAL, SULFATION, POLYSACCHARIDE (6659)•
GASTRIC, MUCOPROTEIN (6654)
GASTRIC, PROMETHAZINE, HISTAMINE, GASTRIN (6615)•
GASTRIC, PYLORIC STENOSIS, CARCINOMA, GASTRITIS (6618)
GASTRIC, RELAPSE, RECURRENCE, PROTRACTION (6664)
GASTRODUODENAL, PYLOROPLASTY, VAGOT (6627)
INTESTINE, SMALL, ENTEROHEPATIC CYC FLUFENAMIC ACID (6671)•
PEPTIC, CIRRHOSIS, PREDNISONE, ASCI (6900)
PEPTIC, ESOPHAGOTHORACIC FISTULA, REFLUX, DUODENUM (6605)
PEPTIC, GALLBLADDER DISEASE, RADIOL (6668)
PEPTIC, GASTRECTOMY, VAGOTOMY (6660
PEPTIC, LIVER DYSFUNCTION (6657)•
PEPTIC, PERITONITIS, APPENDICITIS, DIVERTICULITIS (6961)
PEPTIC, TREATMENT (6670)
RECURRENT, PANCREATIC TUMORS, DUODE ISLET TUMORS (6644)
RECTUM (6704)
STEROID, GASTRECTOMY, HEMORRHAGE (6666)

ULCERATIVE COLITIS
RECTUM, REGENERATION, AUTORADIOGRAP (6731)•
SMALL INTESTINE FUNCTION, MORPHOLOG (6732)•

ULTRASTRUCTURE
BOVINE VIRUS, DIARRHEA, MUCOSAL DISEASE (6955)
DUODENUM, ARGYROPHIL, ARGENTAFFIN, RESERPINE (6306)•
EPITHELIUM, PYLORUS, HISTOLOGY, CAT (6314)
HEPATOCYTE, METAMORPHOSIS (6318), (6323)
HEPATOMA ASCITES, PROTEASE, NUCLEAS (6765)•
LARGE INTESTINE, TAENIA COLI, MUSCL (6289)•
LIVER, BLOOD CELL, ENDOTOXIN, SHOCK (6928)•
LIVER, FIXATION, GLUTARALDEHYDE (63
LIVER, POLYSOME, RIBONUCLEOPROTEIN, NUCLEI (6311)
LIVER, PUROMYCIN, POLYRIBOSOMAL DIS AGGREGATION (6830)•
LIVER, RESECTION, HEPATOCYTE (6477)
LIVER, TUMOR (6286)•
LIVER NUCLEI, RNA POLYMERASE, ADREN ECTOMY, GAMMA-IRRADIATION (6458)
LIVER NUCLEI, RNA POLYMERASE ASSAY, ALPHA-AMANITIN (6317)
LYSOSOMES, LIVER, KIDNEY, LIPOPROTE ISOLATION (6338)
MICROSOME, LIVER, APO-CYTOCHROME B5 (6315)
MICROSOME, LIVER, GLUCOSE, XYLOSE, DEHYDROGENASE (6465)
MICROSOME, PROTEIN SYNTHESIS, FATTY LIVER (6650)
MITOCHONDRIA, DNA SYNTHESIS, LIVER, ENZYME (6474)
MITOCHONDRIA, LIVER, ACYLATED PROTE (6325)
MITOCHONDRIA, LIVER, NEGATIVE STAIN BIOCHEMICAL PATTERNS (6313)
MITOCHONDRIA, LIVER, OXIDATIVE PHOSPHORYLATION, ANTIBIOTIC, RAT (646

  PARIETAL CELL, STOMACH, CARBONIC ANHYDRASE, LOCALIZATION (6308)•
  POLYRIBOSOMES, LIVER, STABILITY, GEL FILTRATION, RAT (6340)
EMIA
  HEPATIC COMA, EDEMA, METABOLIC DISTURBANCES (6799)
GOTOMY
  GASTRIC RESECTION, DUODENAL STUMP, ULCER (6653)
  GASTRODUODENAL ULCER, INTRAGASTRIC PRESSURE (6627)
  SPHINCTER OF ODDI, FLOW RESISTANCE (6382)•
  ULCER, DRAINAGE (6662)
RICES
  ESOPHAGEAL, DRAINAGE, POSTOPERATIVE (6985)
RIO
  CHOLERA, ENTEROTOXIN, BIOCHEMISTRY (6513)
LI
  INTESTINE, MORPHOLOGY, LYMPHATIC, PUMP (6501)•
US
  BOVINE, DIARRHEA, ULTRASTRUCTURE, MUCOSAL DISEASE (6955)
  DIARRHEA, BACTERIA, INFANT (6981)
  ECHO-, ANTIBODY DISTRIBUTION, RECTUM, NASOPHARYNX, SPINAL FLUID (6931)•
VITAMIN
  B12, ABSORPTION, MALABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
  B12, IRON ABSORPTION, GASTRECTOMY, ATROPHIC GASTRITIS (6651)
  D3, INTESTINAL CALCIUM ABSORPTION (6355)•
  E, AMINO ACID, SUGAR, TRANSPORT (6348)•
  E, MICROSOMAL MEMBRANE, PEROXIDATION INHIBITION (6305)•
  MYOINOSITAL, CHOLINE, FATTY LIVER PREVENTION (6777)•
VOLVULUS
  GASTRIC, LIVER, PYLORUS, ANTRUM (6656)
WATER
  ABSORPTION, JEJUNAL LOOP, GLUCOSE, NA, CI (6367)
WHIPPLE'S DISEASE
  ELFCTRON MICROSCOPY, MUCOSA, SMALL INTESTINE, MICROORGANISM (6687)
YEAST
  CHILDREN, DUODENUM, CANDIDA ALBICANS, LAMBLIASIS (6919)

LIBRARY OF THE U. OF I. URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

6.305
A

Vet Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY

ABSTRACTS
AND
CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

THE LIBRARY OF THE
JAN 25 1971
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN
OD

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Public Health Service

National Institutes of Health

OCTOBER 1970
VOLUME 5, NO. 10
7022–7770

Volume 5, No. 10

Abstract and Citation Nos. 7022–7770

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed

by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager

Contract Number NIH-70-2040

with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metabolic Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversity of publications in the area of gastroenterology makes it imperative that an appropriate service be available to investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and comments for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and author indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

CONTENTS

	Cross Reference Abbreviations	Abstracts, Citations	Page
PRE-CLINICAL SCIENCES			
Morphology, Cellular Structure and Histochemistry	(P:Morph)	7022-7053	719
Absorption—Excretion—Transport	(P:Absorp)	7054-7077	724
Motility	(P:Motil)	7078-7088	728
Secretion and Metabolism	(P:Secr)		
Stomach	(P:Secr:Stom)	7089-7100	729
Pancreas	(P:Secr:Panc)	7101-7104	731
Hepatobiliary Tract	(P:Secr:Hepatobil)	7105-7190	732
Intestine	(P:Secr:Int)	7191-7199	747
General	(P:Gen)	7200-7210	749
DIAGNOSTIC PROCEDURES	(Diagproc)	7211-7294	751
GASTROINTESTINAL DISEASES			
Esophagus	(D:Esoph)	7295-7319	758
Stomach and Duodenum	(D:Stomduo)	7320-7383	759
Peptic Ulcers	(D:Stomduo:Peptulc)	7384-7412	765
Small Intestine	(D:S.Intest)	7413-7429	767
Regional Enteritis	(D:S.Intest:Regent)	7430-7435	768
Malabsorption	(D:S.Intest:Malabs)	7436-7451	768
Large Intestine	(D:L.Intest)	7452-7495	770
Ulcerative Colitis	(D:L.Intest:Ulccol)	7498-7502	774
Granulomatous Colitis	(D:L.Intest:Grancol)	7503-7505	775
Pancreas	(D:Pancreas)	7506-7511	775
Pancreatitis	(D:Pancreas:Pancreat)	7512-7523	776
Liver and Biliary Tract	(D:Livbil)	7524-7574	776
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	7575-7598	783
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	7599-7623	785
Chronic Hepatitis	(D:Livbil:C.Hep)	7624-7630	787
Cirrhosis	(D:Livbil:Cirrh)	7631-7650	788
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	7651-7676	790
General	(D:Gen)	7677-7752	793
Parasitology	(D:Gen:Parasit)	7753-7770	798
UTHOR INDEX			
UBJECT INDEX			

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

or sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.
ubscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional;
nd $1.25 for a single copy. Payment is required in advance, and check or money order should be made
ayable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. For journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medical Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans
Ar.	Arabic
Bul.	Bulgarian
Ch.	Chinese
Cz.	Czech
Dan.	Danish
Dut.	Dutch
E.	English
Eston.	Estonian
Fin.	Finnish
Fl.	Flemish
Fr.	French
Ger.	German
Gr.	Greek
Heb.	Hebrew
Hun.	Hungarian
Ic.	Icelandic
In.	Indonesian
It.	Italian
Jap.	Japanese
Kor.	Korean
Latv.	Latvian
Lith.	Lithuanian
Nor.	Norwegian
Pol.	Polish
Por.	Portuguese
Rum.	Rumanian
Rus.	Russian
Ser.	Serbo-Croatian
Sl.	Slovak
Sp.	Spanish
Sw.	Swedish
Th.	Thai
Turk.	Turkish
Uk.	Ukrainian
Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
μg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD_{50}	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
μM	micromolar
mC,μC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transaminase
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

7022 ADENOSINE 3'-5'-CYCLIC PHOSPHATE-DEPENDENT AND INDEPENDENT HISTONE KINASES FROM RAT LIVER. *(E.)* Yamamura, H. (Kobe U. Sch. Med., Japan), M. Takeda, A. Kumon and Y. Nishizuka. *Biochem Biophys Res Commun* 40(3):675-682, 1970.

Cyclic AMP dependent and independent histone kinases (protein kinase B_1 and protein kinase B_2, resp.) from rat liver were partially purified and their properties were studied. Following DEAE-Sephadex column chromatography, protein kinase B_1 and B_2 were eluted together as a single peak. When this fraction was chromatographed further on a hydroxylapatite column 2 enzyme peaks appeared. Protein kinase B_1 (first peak) was stimulated greatly by the addition of cyclic AMP, and the maximum stimulation was found at 8×10^{-8}M of the nucleotide; protein kinase B_2 did not respond to the nucleotide. Both protein kinase B_1 and B_2 were relatively specific for histone and reacted with calf thymus, rat liver and chick erythrocyte histones. Acid hydrolysis of each histone phosphorylated under various conditions resulted in the formation of phosphoserine and phosphothreonine in the ratio of more than 9. Histone preparations were phosphorylated by protein kinase B_1, B_2 or both in the presence and absence of cyclic AMP, indicating that both protein kinase B_1 and B_2 incorporate the terminal phosphate of ATP into the same specific seryl and threonyl residues in histone molecules, and that cyclic AMP stimulated only the rate of reaction catalyzed by protein kinase B_1. Both protein kinase B_1 and B_2 showed maximum activities at pH 7.5 in the presence of $2 X 10^{-2}$M Mg^{++}. The enzymes were specific for ATP with a Km value of 4×10^{-6} M, and were irreversibly inhibited 90% by 4×10^{-5} M ADP. Protein kinase B_2 was rather unstable and approximately 50% of the activity was lost upon storage for 2 days at -20°, or heat treatment for 2 min at 50°, while protein kinase B_1 was stable under these conditions.

7023 STUDIES ON INTESTINAL DISACCHARIDASES: IV. HETEROGENEITY OF MONKEY INTESTINAL MALTASES. *(E.)* Swaminathan, N. (Dept. Biochem., St. U. New York, N. Y.) and A. N. Radhakrishnan. *Indian J Biochem* 7(1):19-23, 1970/

The heterogeneity of monkey intestinal maltases was investigated by heat inactivation and ion exchange chromatography. Heat inactivation at 55°C resulted in the loss of 60% of the total maltase activity and an almost complete inactivation of invertase activity; isomaltase activity was also destroyed at this temperature; the inactivation of 55°C unstable maltase (maltase I) was complete at 30 min, and there was no further loss of activity even if heating continued for 1 hr. At 60°C an additional 15% of maltase activity was lost and the remaining maltase activity was destroyed at 65°C. This stepwise heat inactivation suggested the presence of 3 species of maltase activities with different sensitivities to heat: maltase I (55°unstable), maltase II (60° unstable), maltase III (65° unstable). When a papain solubilized preparation was fractionated on a column of Sephadex G-200, a single broad peak of maltase activity appeared. Following DEAE-Sephadex fractionation maltase I was obtained relatively free of maltases II and III, although maltase II and maltase III could not be separated from each other. When the sample solubilized by butanol treatment was chromatographed on DEAE-Sephadex, one maltase peak which coincided with the maltase, invertase and isomaltase activities with a broad shoulder was obtained.

7024 STUDIES ON INTESTINAL DISACCHARIDASES: V. CHARACTERIZATION AND PROPERTIES OF MALTASE FRACTIONS FROM MONKEY INTESTINE. *(E.)* Swaminathan, N. (Dept. Biochem, St. U. New York, N. Y.) and A. N. Radhakrishnan. *Indian J Biochem* 7(1):24-28, 1970.

The kinetic properties of maltase I were investigated and compared with those of the heat stable maltase (maltase III) isolated from monkey intestine. Properties of an altered form of maltase I devoid only of isomaltase activity were also studied. Maltase I acted on maltose, sucrose and isomaltose, the rate decreasing in that order (relative rate: 100, 60, 38, resp.). Altered maltase I (stored at -20°C for 3 months) did not hydrolyse isomaltose, while maltase III did not hydrolyse sucrose or isomaltose. Km values for sucrose and maltase (10.0 and 6.0 mM) using altered maltase I were of the same order showing that the alteration in the property of maltase I was confined to isomaltase activity only. The km value for maltose (0.6 mM) with maltase III was much lower than with the other 2 maltases (12.5 and 6.0 mM). Optimal pH for the hydrolysis of maltose, sucrose and isomaltose by maltose I was about the same (pH 6.0), and maltase III showed a broad optimum between pH 5.5 and 6.5. Sucrose or isomaltose when incubated with maltose, inhibited the hydrolysis of the latter; however, when only sucrose and isomaltose were present, they did not inhibit the hydrolysis of each other. Enzyme activities were sensitive to inhibition by heavy metal ions (Hg^{+2}, Ag^{+}, Cu^{+2}), Tris-maleate buffer (0.1M) and urea (2M).

7025 MORPHOLOGICAL CHANGES OF THE SMALL INTESTINAL MUCOSA OF GUINEA PIG AND HAMSTER FOLLOWING INCUBATION *IN VITRO* AND PERFUSION *IN VIVO* WITH UNCONJUGATED BILE SALTS. *(E.)* Low-Beer, T. S. (Bristol Roy. Infirm., England), R. E. Schneider and W. O. Dobbins. *Gut* 11(6):486-492, 1970.

Morphological changes of the small intestinal mucosa of guinea pig and hamster were studied following incubation *in vitro* and perfusion *in vivo* with unconjugated bile salts (sodium cholate, sodium deoxycholate, sodium chenodeoxycholate). The lesions noted were located exclusively in the upper third of the villi, and they were similar following incubation *in vitro* and perfusion *in vivo*. In both situations, there was excessive shedding of epithelial cells from villous tips, and the desquamated cells, rounded in shape and with increased cytoplasmic eosinophilia, appeared to be similar in control experiments and in those where bile salts was used. The nuclei were pyknotic and showed prominent clumping of nuclear chromatin about their periphery, changes characteristic of cell injury. Generally, no major differences were observed between the proximal and distal small intestine or between the species used except with guinea pig intestine incubated with 5 mM cholate, where less damage was found proximally than distally. In contrast to studies *in vitro*, regional differences were readily demonstrable with perfusion of bile salts *in vivo*. Dihydroxy bile salts produced more marked alterations of both proximal and distal small intestine than the trihydroxy bile salt, sodium cholate. When 5 mM cholate at pH 6.8 was perfused in the guinea pig, absorption occurred approximately 30 times more rapidly from distal than from proximal segments, while in proximal segments 2 mM chenodeoxycholate was absorbed approximately 15 times more rapidly than 5 mM cholate. A correlation may exist between the morphological alteration produced in the region of the small intestine by a bile acid and the amount of bile salt passing through the cell.

7026 EFFECT OF VITAMIN D ON ENZYME ACTIVITIES IN THE MUCOSAL CELLS OF THE CHICK SMALL INTESTINE.

(E.) Holdsworth, E. S. (Biochem. Dept., U. Tasmania, Hobart, Australia). *J Membrane Biol* 3(1):43-53, 1970.

The effect of vitamin D$_3$ (400 IU i.m.) on enzyme activities (acid p-nitrophenyl phosphatase, alkaline p-nitrophenyl phosphatase, pyrophosphatase, adenosine triphosphatase, phosphodiesterase, and adenyl cyclase) in the mucosal cells (homogenates and brush borders) of the duodenum of 4-week-old crossbred cockerels fed a vitamin D-deficient diet was determined. Adenyl cyclase, phosphodiesterase, and acid p-nitrophenyl phosphatase activities were not affected by vitamin D administration, while the activities of the other enzymes doubled after 72 hr. Adenosine triphosphatase (Mg^{++} or Ca^{++} dependent) activity (nmole ATP hydrolyzed/min/mg protein) increased from the levels observed in rachitic chicks (47 to 85 with Mg^{++} and 22 to 45 with Ca^{++}); sodium or potassium ion did not further affect activity. Alkaline phosphatase activity (nmole p-nitrophenylphosphate hydrolyzed/min/mg protein) and pyrophosphatase activity (nmole pyrophosphate hydrolyzed/min/mg protein) increased with vitamin D administration (410 to 600 and 51 to 65, resp.). Mg^{++} (2 mM) and Ca^{++} (5 mM) in combination enhanced alkaline phosphatase activity in vitamin D$_3$-replete chicks (from 834 with Mg^{++} alone or 24 with Ca^{++} alone to 944 with both ions), but the ion effect on pyrophosphatase could not be determined because the Ca^{++} precipitated under the conditions used. The inhibitors ouabain (10^{-3} M) and dicyclohexylcarbodiimide (10^{-4} M) had no effect on the activities, but phlorizin (10^{-3} M) stimulated (20%) and DL-phenylalanine (2×10^{-2} M) inhibited (80%) the activities. Vitamin D$_3$ increased the translocation of ^{45}Ca to serosal fluid 3-fold (68,310 cpm to 196,680 cpm) in the everted chick ileum, and phenylalanine (5×10^{-2} M) did not interfere with the transport.

7027 THE LIPASE OF RAT GASTRIC MUCOSA: A HISTOCHEMICAL DEMONSTRATION OF THE ENZYMATIC ACTIVITY AGAINST A MEDIUM CHAIN TRIGLYCERIDE.

(E.) Barrowman, J. A. (London Hosp. Med. Coll., England) and S. J. Darnton. *Gastroenterology* 59(1):13-21, 1970.

Gastric mucosa from rats with chronic pancreaticobiliary fistulas was examined for the presence of hydrolytic enzymatic activity toward an emulsion of trioctanoin stabilized with sodium taurocholate. No activity could be demonstrated in any part of the gastric mucosa in animals which had access only to glucose-saline. Following 2 ml of olive oil 20 min before death, lipolytic activity was detected in cells found principally in the deeper two-thirds of the glands of the fundic mucosal region, and in the basal zone; all cells showed intense activity against trioctanoin. The reaction product was distributed as granules throughout the entire cytoplasm; the basal and perinuclear regions stained more darkly than the apical region. Neutral lipids or free fatty acids in the lumen of the stomach may stimulate the synthesis or activation of considerable amounts of a lipase within the cells of the gastric glands.

7028 SPECIFICITY OF RAT LIVER NAD SYNTHETASE.

(E.) Mor, G. (Dept. Biol. Chem., Hebrew U. Jerusalem, Israel) and N. Lichtenstein. *FEBS Letters* 9(3):183-185, 1970.

α-N-Alkyl derivatives of glutamine were able to substitute for glutamine in rat liver NAD synthesis, although with less effect. α-N-Dimethyl-L-glutamine was approximately as effective as α-N-ethyl-L-glutamine, but the effect of α,α-N-methyl-propyl-L-glutamine was less pronounced. Carbobenzoxy-L-glutamine did not substitute for glutamine, but inhibited its utilization; NAD synthesis was inhibited by carbobenzoxy-L-asparagine, carbobenzoxy-L-aspartic acid, carbobenzoxy-L-alanine, carbobenzoxy-L-phenylalanine and carbobenzoxy-S-benzyl-L-cysteine, the inhibition by the latter two compounds being the strongest (85% and 95% inhibition, resp.). The corresponding free amino acids did not inhibit NAD synthesis, and the inhibition by carbobenzoxy-L-asparagin was competitive with glutamine, whereas the inhibition by carbobenzoxy-L-phenylalanine was of a mixed type.

7029 SPECIFICITY OF HISTOCHEMICALLY DEMONSTRABLE BILE CANALICULAR PHOSPHATASE ACTIVITIES.

(E.) Sandstrom, B. (Dept. Human Anat. U. Uppsala, Sweden). *Histochemie* 22(4):316-323, 1970.

Bile canalicular phosphatase activities of chicken, rat, cat, and frog livers were studied histochemically following incubation of the liver slices with ATP, ADP, AMP, α,β-glycerophosphate, or thiamine, inosine, cytidine, uridine, or guanosine diphosphate substrates over a pH range of 4.5 to 9.5. Staining intensities were strong or intense with ATP, thiamine pyrophosphate, and any of the nucleoside diphosphates over a wide pH range (6 to 9.5) with maximum intensity at physiological pH. The enzyme activity was stimulated by calcium, magnesium, and manganese ions, insensitive to sodium, potassium, high concentrations of lead, ouabain, uranyl, p-chloromercuribenzoate, N-ethylmaleimide, fluoride, or cysteine, sensitive to ethanol and acetone, and was completely inactive with AMP and phosphoenolpyruvate substrates. The histochemically demonstrable bile canalicular phosphatase is either a single nonspecific enzyme or a group of histochemically inseparable enzymes, which act only on diphosphate bonds.

7030 CHARACTERIZATION OF PORCINE PANCREATIC ISOAMYLASES: CHEMICAL AND PHYSICAL STUDIES.

(E.) Cozzone, P. (Fac. Sci. Marseilles, France), L. Pasero, B. Beaupoil and G. Marchis-Mouren. *Biochim Biophys Acta* 207(3):490-504, 1970.

Chemical and physical characteristics of porcine pancreatic isoamylases (amylase I and II), including a determination of the amino acid contents of each, were investigated. The amino acid content of amylase I and II were similar except that amylase I contained 5 more aspartic acid and asparagine residues (66 to 67) than did amylase II (61 to 62 residues/mole). A mean value of 1.8 -SH groups per molecule of isoamylase was found, no difference appearing in the sulfhydroyl content of amylases I and II; hence 4 disulfide bridges were present in each molecule. Calculated molecular weights were 52,700 to 54,800 for amylase I and 52,400 to 54,400 for amylase II. The N-terminal group of both amylases was apparently blocked by an acetyl group and C-terminal residue analysis with carboxypeptidase A yielded a single C-terminal leucine. The common C-terminal sequence worked out for both isoenzymes was Ile-Val-Tyr-Phe-Leu-COOH. The preparations of purified amylases I and II were homogenous with identical s values (s=3.95 S) and gel electrophoresis analysis of reduced and carboxymethylated amylases gave a single band pattern. Amylase I and II appeared to behave as single-chain monomeric enzymes.

7031 INDIGOGENIC METHODS FOR GLYCOSIDASES: I. AN IMPROVED METHOD FOR β-D-GLUCO-IDASE AND ITS APPLICATION TO LOCALIZATION STUDIES F INTESTINAL AND RENAL ENZYMES.

(E.) Lojda, Z. Med. Fac. Charles U., Prague, Czechoslovakia). *istochemie* 22(4):347-361, 1970.

sing 5-bromo-4-chloro-3-indoyl-β-D-glucoside as he substrate, the indigogenic method (Pearson, ndrews, and Grose) of histochemical detection of -D-glucosidase in duodenum, jejunum, ileum, kidey, liver, and spleen of rats and in human jejuum (from peroral biopsy specimens) was evaluated nd improved. With the addition of horseradish eroxidase (0.5 to 1 mg/ml), the diffusion artiacts observed with the original method for loalizing the glycosidases were reduced, but with he addition of a ferri-ferrocyanide mixture (3.1 10^{-3} to 4 x 10^{-4} M) the artifact problem disapeared, the staining was confined to enterocytes, nd the deposition of indigo was linear for 3 hr f incubation. In a medium of 0.1 M citrate phoshate buffer at pH 5.5, the glucoside substrate 8 x 10^{-4} M) and the ferri-ferrocyanide mixture 3.1 x 10^{-3} M) gave the best results with a clear rush border localization. The greatest activity as observed in the jejunum, then the duodenum, he ileum, the kidney, and no reaction was seen n the liver. Inhibitors of the system included hlorizin (5 x 10^{-3} M), galactonolactone (5 x 10^{-3}), gluconolactone (4 x 10^{-4} M), cellobiose (8 x 0^{-2} M), lactose (8 x 10^{-2} M), and glucose (8 x 0^{-2} M), while trehalose and sucrose (8 x 10^{-2} M) id not affect the indigo deposition.

7032 SYNTHETIC 1-THIO-β-D-GLUCOSIDURONIC ACIDS AS SUBSTRATES FOR RAT-LIVER β-GLUCURONIDASE.

(E.) Hetu, C. (Dept. Biochem., U. Montreal, Quebec, Canada) and R. Gianetto. *Canad J Biochem* 48(7):799-804, 1970.

Synthetic phenyl 1-thio-β-D-glucosid)uronate, sodium (2-benzothiazolyl 1-thio-β-D-glucosid) uronate, and sodium (*p*-nitrophenyl 1-thio-β-D-glucosid)-uronate were used to study the hydrolysis of 1-thio-β-D-glucosiduronic acids by rat liver. The β-D-glucuronides of 2-benzothiazolethiol and *p*-nitrothiophenol were hydrolyzed by the rat liver preparation, but the β-D-glucuronide of thiophenol was not hydrolyzed. Partial purification of the enzyme from a lysosomal preparation using ammonium sulfate fractionation, gel filtration on a molecular sieve, and anion-exchange chromatography showed that β-glucuronidase was the enzyme responsible for the hydrolysis of these thioglucuronides. Using the partially purified β-glucuronidase, a wide pH optimum around 4.4 was obtained for the hydrolysis of the glucuronide of 2-benzothiazolethiol, while a sharper pH optimum at 5.0 was observed with the glucuronide of *p*-nitrothiophenol. With the same enzyme preparation, a K_m of 6.3 x 10^{-5}M was found for the hydrolysis of the glucuronide of 2-benzothiazolethiol; and a K_m value of 3.1 x 10^{-3}M was obtained for the glucuronide of *p*-nitrothiophenol.

7033 SUBCELLULAR PARTICLES IN TUMORS: III. PEROXISOMAL ENZYMES IN HEPATOMA HC AND MORRIS HEPATOMAS 7794A, 7794B, 5123A AND 7316A.

(E.) Wattiaux, R. (Lab. Physiol. Chem., Fac. U. Notre Dame de la Paix, Namur, Belgium), S. Wattiaux-De Conick, J. M. Van Dijck and H. P. Morris. *Europ J Cancer* 6(3):261-268, 1970.

Activities of catalase, D-amino acid oxidase and urate oxidase were measured in hepatoma HC (rapid growing) and four Morris hepatomas (medium to slow growing) and compared with those found in the normal rat liver. D-amino acid oxidase and urate oxidase were absent in hepatoma HC, but catalase (22 U/100 mg protein) was as active as in normal rat liver. Hepatomas 7316A and 7794B exhibited the following activities; D-amino acid oxidase (0.53 and 0.29 U/100 mg protein, resp., vs 0.21 U/100 mg protein for normal rat liver), urate oxidase (0.93 and 1.34 U/100 mg protein, resp., vs 1.40 U/100 mg protein for rat liver), and catalase (18.9 and 9.7 U/100 mg protein, resp.). In hepatoma 5123A, activities of D-amino acid oxidase and urate oxidase were 0.53 and 0.93 U/100 mg protein, while catalase reached only 15% of the activity in rat liver. Hepatoma 7794A was characterized by high catalase activity (25 U/100 mg protein); D-amino acid oxidase was weakly active, and urate oxidase was not measurable. Catalase showed the phenomenon of latency with Triton X-100 in homogenates of all hepatomas, except 7794A, where both catalase and D-amino acid oxidase were present in the soluble fraction. Using differential centrifugation, in hepatomas 7316A, 7794B, 5123A, and HC, enzymes were mainly recovered in mitochondrial fractions and exhibited a peak of activity in the light one. With isopycnic centrifugation, catalase, D-amino acid oxidase and urate oxidase of hepatomas 7316A, 7794B, and 5123A exhibited similar distribution patterns. Catalase and D-amino acid oxidase of hepatoma 7794A were apparently solubilized during the homogenate preparation due to an extreme fragility of its peroxisomes or else there are very few peroxisomes in the tumor and catalase and D-amino oxidase are mainly found in the free form.

7034 SCANNING AND TRANSMISSION ELECTRON MICROSCOPIC STUDIES OF HUMAN INTESTINAL MUCOSA.

(E.) Toner, P. G. (U. Glasgow Western Infirm., Scotland), K. E. Carr, A. Ferguson and C. MacKay. *Gut* 11(6):471-481, 1970.

Surgical biopsies and postmortem specimens of the small intestine were examined using scanning and transmission electron microscopy. Features of a typical low magnification scanning electron micrograph included surface creases on villi, goblet cell mouths, and occasional intestinal crypt mouths opening between villi. At higher magnification, hexagonal patterns formed by the closely packed apical surfaces of the columnar cells could be seen. Dewaxed paraffin sections showed interconnecting intercellular spaces between the columnar cell bases, and at the free border of the epithelial cells there was a zone which corresponded to the striated border. In an autolysed section under low magnification, the villous cores were more angular and twisted, and in some cases appeared collapsed or flattened. The surface of the autolysed villi was continuous as if covered by an external layer or basement membrane spread over the collagen fiber scaffolding which was the main surviving structure. Transmission electron microscopy of autolysed post-mortem specimens showed groups of identifiable collagen fibers which still displayed their characteristic periodicity and which were accompanied by deposits of fine, non-specific fibrillar material and areas of amorphous debris.

7035 PURIFICATION AND PROPERTIES OF 5-HYDROXYTRYPTOPHAN DECARBOXYLASE FROM MONKEY SMALL INTESTINE.

(E.) Murali, D. K. (Christian Med. Coll. Hosp., Vellore, India) and A. N. Radhakrishnan. *Indian J Biochem* 7(1):13-18, 1970.

The purification and properties of 5-hydroxytryptophan decarboxylase from monkey small intestine were investigated. The rate of decarboxylation was linear with time and was proportional to enzyme concentration over a 3-fold range of protein, 20-60 µg. A 15 min preincubation at pH 8 with pyridoxal phosphate was necessary for optimal rates; the optimum substrate concentration of 5-hydroxytryptophan was 5 mM ($K_m = 1.1 \times 10^{-3}$ M). The enzyme was 84% resolved with respect to the coenzyme, and a definite requirement for pyridoxal phosphate was shown ($K_m = 6.7 \times 10^{-6}$ M). The purified enzyme showed no requirement for a metal ion. The most active substrate was 3,4-dihydroxyphenylalanine followed by 5-hydroxytryptophan and tryptophan (18,100, 7,250, 1,205 U/mg protein, resp.). Activity towards tyrosine, phenylalanine and histidine was extremely feeble; the alteration of the purification factor in the case of phenylalanine and histidine (12.0 and 4.5 as compared to 20.5 for tryptophan) suggesting that those were not substrates for the enzyme. The decarboxylase was inhibited by α-methyl Dopa (60%), p-bromo-m-hydroxybenzyloxamine (70%), and p-hydroxymercuribenzoate (94%). Hydroxymercuribenzoate (10^{-5} M) severely inhibited (94%) the decarboxylase activity, and this inhibition was reversed by β-mercaptoethanol (21%) or glutathione (10%). L-aspartic and L-glutamic acids also inhibited decarboxylase activity (24 and 25% relative activities) and pyridoxal phosphate reversed this effect (108 and 72%). α-Keto acids showed no activation, but in the presence of pyridoxal phosphate showed some potentiation of activity.

7036 STAINING METHODS AND HISTOCHEMISTRY OF NORMA GASTRIC MUCIN.

(E.) Johansen, Aa. (Bispebjerg Hosp., Copenhagen, Denmark) *Acta Path Microbiol Scand* (suppl. 212):57-67, 1970.

Common staining reactions of the mucoid cells of the stomach were investigated and the composition of the various mucosubstances in the stomach was determined histochemically. The reactions were strongest in the cetyl pyridinium chloride formalin-fixed preparations, but were most well defined in the acetic-alcohol-formalin-fixed preparations. A very slight and inconstant reaction at the bottom of foveola and in the mucous neck cells was found with 10% mucicarmine solution. Best's carmine was stongly positive in all mucoid cells (surface epithelium, the crypt epithelium in the corpus fundus and pars pylorica, the pyloric glands, the mucous neck cells, and Brunner's glands), but negative in the goblet cells. These cells were all PAS positive, but only the deep gastric foveolar cells, the mucous neck cells and a few ducts from the Brunner's glands were slightly and inconstantly colored with Alcian blue and constantly colored with the colloidal iron reaction. Histochemically, the mucin elements appear to consist predominantly of neutral mucosubstances and the cells reacting with colloidal iron apparently contain mainly neuraminic acid, and moderate quantities of sulfated mucopolysaccharides.

7037 AUTORADIOGRAPHIC METHODS IN ENZYME CYTOCHEMISTRY: IV. THE CELLULAR AND ULTRASTRUCTURAL LOCALIZATION OF ORGANOPHOSPHATE-SENSITIVE ESTERASES IN MOUSE LIVER AND KIDNEY.

(E.) Barnard, E. A. (Dept. Biochem., State U., New York, Buffalo), G. C. Budd and K. Ostrowski. *Exp Cell Res* 60(3):405-418, 1970.

Organophosphate-sensitive esterases of mouse liver and kidney were localized on a cellular and ultrastructural basis (using labeled ^{3}H-diisopropylphosphorofluoridate and electron microscope autoradiography) mainly in the proximal tubule cells of the kidney and parenchymal hepatocytes. Use of protective substrates and inhibitors such as acetyl-β-methylcholine, phenyl acetate plus acetylsalicylic acid, benzoyl-L-arginine ethyl ester, α-acrylylproprionic acid, and eserine with the ^{3}H-diisopropylphosphorofluoridate showed that most of esterase was the relatively nonspecific carboxylesterase type, with small amounts of cholinesterases and more specific carboxylesterase. Electron microscope autoradiography showed in both liver and kidney tissues hat cytoplasmic locations of these esterases are embrane-bound sites, especially in the endoplasmic eticulum. Lysosomes did not contain these organophosphate-sensitive esterases; nuclei in kidney ubule cells, but not those in liver cells, seemed o contain much of these esterases. The concentration increased with autolysis, but the increase may ave been due to translocation from cytoplasmic sites.

7038' RADIATION EFFECTS IN DUODENAL CELLS ON EXPOSURE TO CERIUM. *(Rus.)* Tokin, I. B. (Inst. Radiat. Hyg., Leningrad, USSR). *Arkh Anat* 8(2):28-40, 1970.

039 PYRROLIDONYL PEPTIDASE IN ANIMAL, PLANT AND HUMAN TISSUES: OCCURRENCE AND SOME ROPERTIES OF THE ENZYME. *(E.)* Szewczuk, A. (Acad. ed. Wroclaw, Poland) and J. Kwiatkowska. *Europ J iochem* 15(1):92-96, 1970.

040 PRELIMINARY PARTIAL PURIFICATION OF HEN LIVER MICROSOMAL STEAROYL-CoA DESATURASE. *E.)* Gurr, M. I. (Unilever Res. Lab., Sharnbrook, edford, England) and M. P. Robinson. *Europ J iochem* 15(2):335-341, 1970.

041 LACTATE DEHYDROGENASE ISOENZYMES IN TISSUES OF NORMAL AND EHRLICH-LETTRE ASCITES TUMOR-EARING SWISS MICE. *(E.)* Fountain, J. A. (UCLA Sch. ed., Los Angeles, California), M. E. Parks, A. ickey and R. W. McKee. *Cancer Res* 30(4):998-1002, 970.

042 EFFECT OF GROWTH OF RHODAMINE SARCOMA IN RAT ON ISOZYMES OF LIVER ENZYMES, WITH EFERENCE TO THE SEESAW CHANGE OF TWO pI-ISOZYMES F GLUCOSE-6-PHOSPHATE DEHYDROGENASE. *(E.)* Nakamura, . (Inst. Protein Res. Osaka U., Japan), Y. Matuo, . Nishikawa, T. Horio and K. Okunuki. *Gann* 1(2):177-190, 1970.

043 EARLY MORPHOLOGICAL CHANGES IN THE LIVER FOLLOWING COMPLETE ISOLATION FROM GENERAL IRCULATION. *(Rus.)* Belinskaia, A. M. (Kazakh Inst. lin. and Experim. Surgery, Kazakh SSR, USSR), M. B. likh, A. I. Goncharov, S. P. Goryachev and L. P. rokhova. *Arkh Pat* 32(2):70-73, 1970.

044 AGE SENSITIVITY OF EPITHELIAL CELLS OF MOUSE SMALL INTESTINE. *(E.)* Gillette, E. . (Dept. Radiol., Colorado St. U., Fort Collins), . R. Withers and I. F. Tannock. *Radiology* 96(3): 6(3):639-643, 1970.

045 ANTIGENIC SPECIFICITY OF THE BOVINE LIVER RIBOSOME. *(Jap.)* Ikemoto, S. (Natl. Res. nst. Police Sci., Tokyo). *Med Biol* 80(6):287-290, 970.

7046 ABO BLOOD GROUP ANTIGENS OF THE HUMAN LIVER RIBOSOME. *(Jap.)* Ikemoto, S. (Natl. Res. Inst. Police Sci., Tokyo, Japan). *Med Biol* 80(6):291-294, 1970.

7047 MORPHOLOGICAL CHANGES IN THE WALL OF THE INTACT LARGE INTESTINE AFTER TREATMENT WITH MK-2 GLUE: EXPERIMENTAL STUDY. *(Rus.)* Egorov, V. I. (R. V. Vishnevskiy Inst. Surgery, Acad. Med. Sci., Moscow, USSR) and E. S. Bogulavskaya. *Eksp Khir Anest* 15(1):27-30, 1970.

7048 CHARACTERIZATION OF A NUCLEOPROTEIN FRACTION OBTAINED BY ISOOCTANE TREATMENT OF RAT LIVER MICROSOMES. *(E.)* Scott-Burden, T. (Dept. Biochem., U. Coll. Rhodesia, Salisbury) and A. O. Hawtrey. *S Afr J Med Sci* 35(1):1-5, 1970.

7049 AUTORADIOGRAPHIC LOCALIZATION OF RABBIT RED CELLS INJECTED INTO THE MOUSE. *(E.)* Appelgren, L. E. (Roy. Vet. Coll., Stockholm, Sweden) and B. E. Schildt. *Acta Path Microbiol Scand* 78(2):215-218, 1970.

7050 ON ANTIBODIES TO GASTRIN: CONCERNING THEIR PRODUCTION, BEHAVIORAL CHARACTERISTICS AND USES. *(E.)* McGuigan, J. E. (U. Florida Coll. Med., Gainesville). *Gut* 11(4):363-367, 1970.

7051 EXTRACT AND PARTIAL PURIFICATION OF TWO HISTONE-SPECIFIC TRANSACETYLASES FROM RAT LIVER NUCLEI. *(E.)* Gallwitz, D. (Physiol. Chem. Inst., U. Marburg, Germany). *Biochem Biophys Res Commun* 40(1):236-242, 1970.

7052 AGE-DEPENDENT MORPHOLOGY OF THE LIVER IN THE RAT. *(Rus.)* Verin, V. K. (Med. Inst. Kalinin, USSR). *Arkh Anat* 58(2):40-44, 1970.

7053 MORPHOLOGICAL CHANGES IN THE STOMACH UNDER LOCAL INTRAGASTRIC HYPOTHERMIA IN THE DOG. *(Rus.)* Chuchumashev, S. G. (Tyumen' Med. Inst., Tyumen', USSR) and V. P. Zenkov. *Eksp Khir Anest* 15(1):91-94, 1970.

- P:Absorp (7060)
- P:Secr:Hepatobil (7109)(7113)(7124)(7125)(7140)
- (7146)(7152)(7161)(7179)
- P:Secr:Int (7198)
- Diagproc (7221)(7264)(7284)
- D:Stomduo (7320)(7321)(7340)(7374)
- D:L.Intest (7453)(7454)(7456)
- D:L.Intest:Entcol (7496)
- D:Pancreas:Pancreat (7512)
- D:Livbil (7527)(7532)(7539)
- D:Livbil:A.Nonv.Hep (7576)(7581)(7593)(7595)
- D:Livbil:C.Hep (7628)
- D:Livbil:Cirrh (7632)
- D:Livbil:Gallb (7652)
- D:Gen (7681)(7683)

7054 EFFECT OF LYSINE AND THREONINE SUPPLEMENTATION ON DIGESTION AND ABSORPTION OF WHEAT PROTEIN.

(E.) Fukui, T. (Sch. Med. Tokushima U., Japan), T. Miyoshi, H. Fukui, F. Tomiyoshi, H. Nakata, K. Matsuura, K. Niki, H. Kinoshita and T. Morioka. *Tokushima J Exp Med* 16(3-4):177-181, 1970.

The effect of lysine and threonine supplementation of wheat protein on digestion and absorption of protein in 2 female dogs was evaluated by fecal nitrogen determinations. Dog A was fed the lysine (0.8 g) and threonine (0.2 g) supplemented diet for 40 days, the last 5 days of which food intake was measured and feces were inspected daily. Then dog A was fed the basal diet for 40 days and 3 days after changing the diet, food intake and feces were measured for 4 days and also during the last 6 days of the basal diet. The above feeding program was reversed for dog B. During basal diet feeding, dog A showed a depression in food intake (800 g) and an increase of feces and nitrogen excretion (902, 4.12 g, resp.) compared to 1000 g food intake and a decrease in feces and nitrogen excretion (462, 3.78 g, resp.) during the lysine and threonine supplemented diet. The rate of nitrogen absorption was greater during the supplemented diet (81%) than the basal diet (73%), and the body weight gain (41g/day) and amount of absorbed protein (19 g/day) was also greater during the supplemented diet. Dog B showed good appetite, increase in food intake and increased rate of nitrogen absorption (1100 g, 83%) during the lysine and threonine-supplemented diet when compared to the basal diet (500 g, 78%). Not only the efficiency of protein synthesis in the body, but also the rate of digestion and the absorption of protein seemed to be improved by supplementing wheat protein with lysine and threonine.

7055 VITAMIN D DEFICIENCY AND NEUTRAL AMINO ACID ABSORPTION IN THE RAT INTESTINE.

(E.) Younoszai, M. K. (Dept. Intern. Med., U. Iowa, Iowa City) and H. P. Schedl. *Proc Soc Exp Biol Med* 134(2):562-565, 1970.

The effect of vitamin D deficiency on neutral amino acid (α-aminoisobutyric acid) absorption in the rat intestine *in vivo* was investigated. α-Aminoisobutyric acid blood concentrations, tissue concentrations and final concentrations in the perfusing solutions were the same in the depleted and repleted rats. The concentration gradient between perfusate, mucosa, underlying tissue and plasma favored absorption in the single-pass perfusion experiment, whereas in the recirculation experiment the concentration gradient was slightly uphill between perfusing fluid and the intestinal mucosa. Vitamin D had no effect on neutral amino acid absorption.

7056 TRANSPORT OF PENICILLAMINE ACROSS MUCOSA OF THE RAT SMALL INTESTINE *IN VITRO*. *(E.)*

Wass, M. (Chelsea Coll. Sci. Tech., London, England), and D. F. Evered. *Biochem Pharmacol* 19(4):1287-1295, 1970.

L-Penicillamine was transported against a concentration gradient across the rat small intestine *in vitro*, while under similar conditions D-penicillamine was not transported. The mechanism of this transport of L-penicillamine was energy-dependant, (as indicated by the inhibition of transport by cyanide) and not affected by pyridoxine pretreatment. The active transport was considerably inhibited, or completely abolished by equimolar L-methionine or L-valine, as well as by a small decrease in pH below the physiological value, indicating that L-penicillamine shares a transport pathway of the neutral amino acids. D-Penicillamine stimulated the transport of cysteine while the L-isomer had a slight inhibitory effect. In tissue uptake studies with an incubation period of 4 min, the L-isomer was taken up more rapidly than the D-isomer, but with little evidence of saturation with increasing concentration. The effect of both penicillamine isomers on the transport of water by the everted intestinal sacs was of the same order of magnitude as that reported to occur in the presence of other amino acids.

7057 STEROIDS IN GERMFREE AND CONVENTIONAL RATS: DISTRIBUTION AND EXCRETION OF LABELED PREGNENOLONE AND CORTICOSTERONE IN MALE AND FEMALE RATS.

(E.) Eriksson, H. (Karolinska Inst., Stockholm, Sweden) and J. A. Gustafsson. *Europ J Biochem* 15(1):132-139, 1970.

The distribution and excretion of intraperitoneally administered steroids were studied in male and female germfree and normal rats at different times after injection of the isotopes. Two hr after the i.p. administration of 4-^{14}C-pregnenolone and 1,2-^{3}H-corticosterone, 60-70% of the given dose was localized in the small bowel, mainly as the monosulfate. The total recovery of radioactivity from feces and urine was approximately 80% for 4-^{14}C-pregnenolone and 70% for 1,2-^{3}H-corticosterone. The rate of disappearance of radioactivity from the liver and intestinal tract was more rapid in males than in females, and all female rats excreted more monosulfates than free steroids whereas no conjugated steroids were detected in male urine. In feces the ratios between conjugated monosulfates (and disulfates) and free steroids were as follows: pregnenolone experiment - germfree males, 0.45, females, 2.0; normal males, 0.09, females, 0.70: corticosterone experiment - germfree males, 0.58, females, 7.2; normal males, 0.38, females, 1.0. The conjugated metabolites were mainly monosulfated and to a lesser extent disulfated; no steroid glucuronides were found. Conjugated pregnenolone and corticosterone content was 3-fold greater than free steroids in germfree female rats compared to normal rats. Corticosterone metabolites were monosulfated to a larger extent than pregnenolone metabolites; fecal excretion of corticosterone metabolites was quantitatively more important than that of pregnenolone metabolites.

7058 PERMEABILITY OF THE SMALL INTESTINE TO SUBSTANCES OF DIFFERENT MOLECULAR WEIGHT.

(E.) Loehry, C. A. (St. Thomas Hosp., London, England), A. T. R. Axon, P. J. Hilton, R. C. Hider and B. Creamer. *Gut* 11(6):466-470, 1970.

The permeability of the rabbit jejunum was studied in an attempt to correlate molecular weight of water-soluble substances with plasma clearance ratios. Albino rabbits (2 kg) were prepared for infusion and collection by cannulation of the external jugular vein and carotid artery under pentobarbital anesthesia and the jejunum was perfused at a constant rate of 600 ml/hr with physiological saline. The plasma concentration of urea was linear with the urea excreted by the bowel. The urea clearance (ml/min) was 1.8, whereas that of fructose was 0.31 and inulin 0.028, indicating higher clearance for small molecular weight substances. The plasma to lumen and lumen to plasma permeability of fractionated polyvinylpyrrolidone (8,000 to 80,000 molecular weight) was also studied using ^{125}I-polyvinylpyrrolidone. The clearance rates of the polymer molecules were inversely proportional to their respective molecular weights and the permeability pattern appeared almost identical in either direction.

7059 INTESTINAL Ca-TRANSPORT IN EXPERIMENTAL UREMIA. *(Ger.)* Ritz, E. (Med. U. Clin. Heidelberg, Germany). *Z Ges Exp Med* 152(4):313-324, 1970.

The relation between the intestinal Ca-transport disturbance during experimental uremia and during vitamin D-deficiency was investigated in male rats weighing 100 g and fed the "Altromin-diet" (1370 mg Ca, 100 IU vitamin D/100 g). Uremia was produced by total resection of the right and partial resection of the left kidney (the control animals were sham-operated), and the experiments were carried out 120 hr after the nephrectomy. The transport of Ca and PO_4 across the walls of duodenal loops of uremic rats was 25% less than that of controls while sodium transport remained unchanged; dialysis of the peritoneal cavity normalized the rate of transport. Impairment of Ca-transport was noted at concentrations between 0.04 and 10 mM, and the transport of i.v. administered Ca^{47} from the vascular system to the duodenal lumen was slightly but not significantly reduced. Transport rates were neither changed by significant elevation of serum urea levels (due to administration of urea in drinking water), nor by NH_4Cl-induced acidosis; p.o. phosphate load diminished the transport rate. In experiments using isolated duodenal loops and oxygen atmosphere, the oxygen dependent accumulation of Ca and the Ca-transport against a gradient were shown to be impaired. Measurement of Ca^{47} activity in mucosal and serosal layers, as well as autoradiographs demonstrated diminished Ca uptake, and the reduced gradient between content of duodenal loops and incubation fluid containing Ca^{47} was not normalized by peritoneal dialysis prior to the removal of the duodenal loops, although the serum urea levels became normal. Changes of intestinal transport of Ca in uremia closely resemble those seen in vitamin D deficiency.

7060 PERFUSION OF THE CANINE COLON WITH UNCONJUGATED BILE ACIDS. *(E.)* Mekhjian, H. S. (Dept. Intern. Med., Ohio St. U., Columbus) and S. F. Phillips. *Gastroenterology* 59(1):120-129, 1970.

Absorption of sodium, potassium, chloride, bicarbonate, and water from isotonic electrolyte solutions perfused through intact colons of 23 healthy dogs was studied with and without the addition of unconjugated bile acids (deoxycholic, chenodeoxycholic, and cholic acids). Each dog was its own control and mean values were obtained for the absorption (μEq/min) of sodium (81), potassium (8), chloride (64), and bicarbonate (20), and for water absorption (0.55 ml/min). When deoxycholic and chenodeoxycholic acids were added to the perfusate (10 mM) absorption of sodium (12 and 21, resp.), chloride (15 and 13, resp.), bicarbonate (6 and 3, resp.), and water (0.17 and 0.20, resp.) was reduced, while the absorption of potassium (9 and 11, resp.) was not affected; cholic acid (10 mM) did not alter either electrolyte or water absorption. Deoxycholic acid at 5 mM reduced sodium (16), chloride (12), bicarbonate (7), and water (0.13) absorption, and taurodeoxycholic acid (10 mM) inhibited sodium, potassium, bicarbonate, and water absorption (30, 19, 9, and 0.23, resp.). The inhibitory effect of deoxycholic acid (10 mM) was reversible within 30 to 60 min after removing it from the perfusate. Deoxycholic and chenodeoxycholic acids were absorbed from the large intestine (16.7 and 18.7% of the perfused amount, resp.) to a greater degree than cholic acid (7.3%). Light and electron microscopy of the colon revealed only a depletion of mucus from the goblet cells after perfusion with all the bile acids, and no morphological changes were observed.

7061 THE EFFECT OF SKF 525A ON THE DISTRIBUTION OF CARBON TETRACHLORIDE IN RATS. *(E.)* Marchand, C. (Fac. Med. U. Montreal, Quebec, Canada), S. McLean and G. L. Plaa. *J Pharmacol Exp Ther* 174(2):232-238, 1970.

The effect of SKF 525A (40 mg/kg i.p.) on the distribution of $^{14}CCl_4$ (2 ml/kg) administered via gavage to rats 40 min after SKF 525 A administration was studied. In rats pretreated with SKF 525A and sacrificed 30 min, 1 and 2 hr after $^{14}CCl_4$ administration, significantly less toluene-soluble ^{14}C was present in the blood, liver, brain, muscle and fatty tissue. No significant difference in absorption was observed 5.5 hr after gavage, but an increase in tissue ^{14}C was found 12 hr after gavage in rats pretreated with SKF 525A. During the first 6 hr that followed $^{14}CCl_4$ gavage, rats pretreated with SKF 525A excreted less toluene-soluble ^{14}C through the lungs. When the pretreatment was performed 66 hr before administration of $^{14}CCl_4$, there was a significant increase in blood $^{14}CCl_4$ of pretreated rats. When CCl_4 was administered i.p. or s.c., SKF 525A had no apparent effect on CCl_4 in rats sacrificed 1 hr after $^{14}CCl_4$ administration. SKF 525A seemed to have a diphasic effect on the gastrointestinal absorption of CCl_4.

7062 ALTERED ABSORPTION OF DRUGS FROM THE RAT SMALL INTESTINE BY CARBONIC ANHYDRASE INHIBITION. *(E.)* Miya, T. S. (Purdue U. Sch. Pharm. Pharmacol., Lafayette, Ind.) and R. C. Schnell. *J Pharmacol Exp Ther* 174(2):177-184, 1970.

Rats pretreated with acetazolamide (50 mg/kg s.c.) were used to study the absorption of ^{14}C-dextroamphetamine sulfate, ^{14}C-salicylic acid and ^{14}C-urea from *in vivo* duodenal or ileal loops. Carbonic anhydrase found in the ileum and duodenum was completely inhibited by acetazolamide *in vivo*. In the ileal loops d-amphetamine absorption decreased after acetazolamide (652 vs 798 dpm/ml blood after 30 min), and that of salicylic acid was increased (7119 vs 5866 dpm/ml) while that of urea was unchanged (1778 vs 1894 dpm/ml). The pH of the ileal contents was more acidic after acetazolamide pretreatment, and plasma levels generally reflected the absorption of the respective compound. In the duodenum the absorption of d-amphetamine was increased with acetazolamide (763 vs 654 dpm/ml blood after 30 min), that of salicylic acid decreased (6160 vs 6416 dpm/ml) and that of urea remained unchanged (2032 vs 1908 dpm/ml). The pH levels of the duodenal contents were not changed by acetazolamide, and tissue binding of each drug within the two intestinal tissues did not differ after acetazolamide. The differential absorption pattern of the acidic and basic drug from duodenal and ileal sites suggested that the alterations in absorption were secondary physiologic changes resulting from carbonic anhydrase inhibition.

7063 COMPARISON OF FECAL UROBILINOGEN EXCRETION WITH BILIRUBIN PRODUCTION IN NORMAL VOLUNTEERS AND PATIENTS WITH INCREASED BILIRUBIN PRODUCTION. *(E.)*

Bloomer, J. R. (Natl. Cancer Inst., Natl. Inst. Hlth., Bethesda, Md.), P. D. Berk, R. B. Howe, J. G. Waggoner and N. I. Berlin. *Clin Chim Acta* 29(3):463-471, 1970.

An analysis of the plasma disappearance curve of unconjugated ^{14}C-bilirubin in 13 healthy volunteers and 12 patients with a reduction in the red blood cell ^{51}Cr half-life and/or increased bilirubin production was used to determine the amount of bilirubin produced daily. The fraction of the daily bilirubin production excreted in the feces as urobilinogen was also determined by a simultaneous measurement of fecal urobilinogen excretion. In the normal volunteers the average daily fecal urobilinogen excretion was 127 mg (range 47 to 276 mg). An average of 92% of the injected isotope was recovered in the feces, indicating that bilirubin and its degradation products are excreted almost exclusively in the feces, although only 50% of the daily bilirubin production was recovered as fecal urobilinogen. No significant difference was found between the normal individuals and patients with increased bilirubin production for the fraction of daily bilirubin production recovered as fecal urobilinogen or for the fraction of the injected isotope recovered in the stool.

7064 MEASUREMENT OF ELECTRICAL POTENTIALS OF THE HUMAN RECTUM AND PELVIC COLON IN NORMAL AND ALDOSTERONE-TREATED PATIENTS. *(E.)*

Edmonds, C. J. (U. Coll. Hosp. Med. Sch., London, England) and R. C. Godfrey. *Gut* 11(4):330-337, 1970.

A simple and rapid method was described for the measurement of electrical potentials of the human rectum and pelvic colon in normal and aldosterone-treated patients during routine sigmoidoscopy. The potential differences measured had a mean value of 25 mV (range 4-51mV) in 27 subjects with normal bowel, and 6 hr after 2 i.v. injections of 0.5 mg aldosterone, the potential difference had risen to 60 mV (range 37-101 mV). The time course of responses studied after a single injection of aldosterone showed that the potential difference was similar to normal values at 2 hr (30 mV), but after 4 hr the potential difference was significantly higher (40 mV), and the effect disappeared by 18 hr. Urinary sodium concentrations and sodium/potassium ratios fell after aldosterone injections, the time course of the changes being similar to that of the potential differences of the colon. Sodium concentration of the stool fluid also fell; the concentration of chloride in the stool fluid (normal 18; aldosterone-treated 15 mEq/l) was consistent with a passive distribution of chloride according to the electrochemical gradient, but that of potassium (normal 87; aldosterone-treated 112 mEq/l) was considerably greater than expected from a passive distribution, suggesting that potassium is actively secreted into the lumen of the colon.

7065 LIPOLYSIS AND LIPID ABSORPTION IN THE STOMACH OF THE SUCKLING RAT. *(E.)*

Helander, H. F. (Dept. Anat., U. Umea, Sweden) and T. Olivecrona. *Gastroenterology* 59(1):22-35, 1970.

Lipolysis and lipid absorption in the stomach of the suckling rat were investigated with morphological and biochemical techniques. Triglycerides constituted about 85% (59 μmole/gm) of the lipids in fresh rat milk but only about 50% (127 μmoles/gm) in the gastric contents of suckling rats. In contrast, the concentrations of diglycerides and free fatty acids were higher in gastric contents (93 and 95 μmole/g, resp.) than in fresh milk (2.8 and 0.3 μmole/g, resp.). About 25% of the fatty acids in rat milk were of medium chain length; no fatty acids shorter than 8 carbon atoms were found. Gastric lipolysis preferentially liberated medium chain fatty acids and long chain diglycerides. The proportion of various lipids in the gastric wall suggeste a fairly indiscriminate uptake of lipid from the gastric contents, but there was no clear morphological evidence for pinocytotic uptake of gastric contents. Many of the surface epithelial cells in the nonfasted rats contained numerous round or slightly oval globules, moderately dense and varying in size (0.5-5μ), mainly concentrated at the perinuclear and infranuclear regions of the cytoplasm. At the periphery of the globules, there were usually several round, electron lucid regions of varying size, which were stippled by dense particles, about 50-100 Å in size. Digestion and absorption of dietary fat in the stomach probably involves a different process than in the small intestine.

7066 DIGESTION OF HEAT-DAMAGED EGG ALBUMEN BY THE RAT. *(E.)*

Valle-Riestra, J. (Grad. Sch. Nutr., Cornell U., Ithaca, N. Y.) and R. H. Barnes. *J Nutr* 100(8):873-882, 1970.

The course of digestion of heat-damaged proteins (particularly lysine) was studied in rats. Laying hens were injected with 50 μC of ^{14}C-L-lysine within

30 min after laying of an egg and the first egg laid following injection was collected, the egg white separated, dialyzed and available lysine measured after autoclaving at 120° for 1 hr with or without glucose to obtain a Maillard reaction protein or a heat-damaged carbohydrate-free protein. Rats were fed either of the 2 preparations and recovery measured in the intestine, expired air, urine and feces. Large recovery was noted in the small intestine and cecum 2, 7 and 16 hr post-feeding. Higher recovery from air and urine was noted up to 16 hr in rats fed the glucose-free heated protein compared to animals receiving the Maillard protein but greater recovery was found after 16 hr in the Maillard animals, suggesting that lysine or a derivative was absorbed in a non-utilizable form and excreted in urine. From fecal determinations, it appears that no absorption of lysine occurred in the cecum and colon. Severe heating reduces lysine absorbability and heating in the presence of glucose (Maillard complex) further decreases its absorption and excretion.

7067 STRUCTURAL CHANGES IN THE SMALL INTESTINE ASSOCIATED WITH THE UPTAKE OF POLYVINYLPYRROLIDONE BY THE YOUNG FERRET, RABBIT, GUINEA PIG, CAT AND CHICKEN.

(E.) Clarke, R. M. (Physiol. Lab. U. Cambridge, England) and R. N. Hardy. *J Physiol* 209(3):669-687, 1970.

The absorption of ^{125}I-polyvinylpyrrolidone into the epithelial cells of the small intestine was measured with respect to the longitudinal distribution of uptake along the intestine and to structural changes in the intestines with age of newborn ferrets, guinea pigs, rabbits, cats, and chicks. In the ferret, polyvinylpyrrolidone was absorbed readily until 33-34 days after birth, and then ceased to be absorbed at 40-45 days; the uptake that had initially been distributed over the length of the intestine became limited to the distal section before it stopped. In the guinea pig, uptake occurred during the first 48 hr after birth and was limited to the terminal ileum while in the rabbit, uptake continued for 20-22 days after birth and occurred over the distal two-thirds of the small intestine. Considerable variation in uptake was observed in cats (possibly due to differences in maternal attention) lasting from 2-14 days and spread over the distal two-thirds of the intestine, and no uptake was observed in chicks. Histologically, the presence of vacuoles in the epithelial cells of the villus seemed to be associated with the polyvinylpyrrolidone uptake in all the species examined.

7068 RIBOFLAVIN ABSORPTION AND EXCRETION IN THE NEONATE.

(E.) Levy, G. (Sch. Pharm., St. U. New York, Buffalo), W. J. Jusko, N. Khanna, L. Stern and S. J. Yaffe. *Pediatrics* 45(6):945-949, 1970.

The absorption and excretion of riboflavin, a vitamin which is absorbed in adults by a saturable transport process in the proximal small intestine, was investigated in 4 healthy, 5-day-old infants. After p.o. administration of a saturation dose of the vitamin (150 mg/m^2), the urinary recoveries were similar (6 to 7.5%) to those obtained previously in 3- to 6-month-old infants (6 to 8%). However, the maximum urinary excretion rate in the older subjects was 5 times higher than in the neonates (0.25 and .05 μg/min/mg, resp.) and the duration of the maximum rate was much longer in the neonates (15 hr vs 1 hr) than in the older children. The maximum excretion rate of riboflavin in the neonate after parenteral injection was higher than after p.o. administration of the vitamin. The slow and prolonged excretion of riboflavin by the neonate after p.o. administration seemingly is due to prolonged absorption from the gastrointestinal tract rather than to a limited renal excretory capacity and the human neonate is probably quite capable of absorbing riboflavin from the gastrointestinal tract, despite an apparently immature specialized intestinal transport mechanism.

7069 EFFECT OF RENAL INSUFFICIENCY ON THE ACTIVE TRANSPORT OF CALCIUM BY THE SMALL INTESTINE.

(E.) Baerg, R. D. (Columbia U. Coll. Physicians Surgeons, New York, N.Y.), D. V. Kimberg and E. Gershon. *J Clin Invest* 49(6):1288-1300, 1970.

The effect of experimentally-induced renal insufficiency on active transport of calcium by the small intestine was studied in everted duodenal gut sacs of Sherman rats. Active transport of calcium in gut sacs of partially nephrectomized rats was significantly decreased when compared to sham-operated controls (inside/outside ratio 6.5 in controls vs 4.3). Similar studies performed with the paired feeding technique showed a decrease in calcium transport of nephrectomized animals compared to controls (4.0 vs 5.9). Defective calcium transport in gut sacs from partially nephrectomized animals was restored by prior administration of large amounts of vitamin D_3 (ratio 7.5 vs control 6.6 with 10,000 IU D_3 and 5.9 vs control 5.9 with 6,000 IU D_3). Experiments undertaken to determine the effects of renal insufficiency on various segments of small intestine to transfer calcium showed that transfer of calcium from the mucosal to the serosal medium is decreased in renal insufficiency. This effect was most marked in the duodenum, less in the distal ilium, and insignificant in the jejunum corresponding to the distribution pattern of the vitamin D dependent active transport mechanism for calcium. However, since neither the metabolism of vitamin D nor the levels of calcium finding protein activity were affected in these experiments, renal insufficiency appears to affect the cellular mechanisms of calcium transport in a manner independent of a direct interaction with Vitamin D.

7070 THE INFLUENCE OF AGE ON THE XYLOSE ABSORPTION TEST.

(E.) Kendall, M. J. (Queen Elizabeth Hosp., Birmingham, England). *Gut* 11(6):498-501, 1970.

The xylose absorption test was used to study the effects of age on xylose absorption and excretion in 100 unselected normal subjects. A p.o. xylose absorption test and an i.v. test were performed following administration of 5 g of D-xylose and urine was collected and assayed for xylose. Mean xylose excretion in the p.o. test decreased with advancing age; age group 10-20 yr showed 1.18 g excretion as compared with 0.51 g in the over 70 yr group in 2 hr. The results of the i.v. test also demonstrated a clear decrease with age, from 2.09 g excretion in the 10-20 yr group to 0.97 g in the over 70 yr category in 2 hr. The decline in xylose excretion appears to be due to diminished renal excretion rather than reduced intestinal absorption.

7071 PHYSIOLOGICAL FACTORS AFFECTING INTESTINAL DRUG ABSORPTION. *(E.)* Diamond, L. (Coll. U. Kentucky, Lexington), J. T. Doluiso and W. C. Crouthamel. *Europ J Pharmacol* 11(1):109-114, 1970.

Using an *in situ* technique for determining drug absorption rates from isolated segments of the gastrointestinal tracts of anesthetized animals it was shown that the absorption of salicylic acid, barbital and sulfaethidole followed apparent first order kinetics; the absorption half-lives were 8, 19 and 32 min, resp. When a fasting period exceeding 20-25 hr preceded the experiments, the absorption half-lives increased significantly and the absorption rate decreased in proportion to the fasting time. Investigation of the influence of alterations in mesenteric blood flow on the absorption profile of sulfaethidole revealed that half-lives of 17, 37, 56 and 134 min were found for 100, 64, 26 and 0% of control blood flow rate, resp. The absorption process in these experiments apparently obeyed first order kinetics, suggesting a meaningful relation between intestinal blood perfusion and drug absorption rate.

7072 THE DISTRIBUTION AND TOXICITY OF BILIRUBIN. *(E.)* Odell, G. B. (Johns Hopkins U. Sch. Med., Baltimore, Md.). *Pediatrics* 46(1):16-24, 1970.

7073 EFFECT OF METABOLISM INHIBITORS ON THE MEMBRANE POTENTIAL OF CELLS OF GASTRIC MUCOSA. *(Ukr.)* Smirnova, Zh. P. (T. H. Shevchenko U., Kiev, USSR). *Fiziol Zh* 16(3):402-404, 1970.

7074 LABELING PATTERNS USING ^{14}C-LABELED GLUTAMIC ACID, ASPARTIC ACID & ALANINE IN THE TRANSPORT STUDIES WITH EVERTED SACS OF RAT INTESTINE. *(E.)* Ramaswamy, K. (Christian Med. Coll. Hosp., Vellore, India) and A. N. Radhakrishnan. *Indian J Biochem* 7(1):50-54, 1970.

7075 CATION TRANSPORT IN THE ISOLATED PERFUSED RAT LIVER. *(Ger.)* Frimmer, M. (Vetr. Med. Fac., Justus Liebig U., Giessen, Germany) and R. Kramer. *Z Ges Exp Med* 152(4):269-273, 1970.

7076 EFFECT OF TANNIC ACID AND RELATED COMPOUNDS ON THE ABSORPTION AND UTILIZATION OF PROTEINS IN THE RAT. *(E.)* Glick, Z. (Tel-Hashomer Hosp., Tel-Aviv U., Israel) and M. A. Joslyn. *J Nutr* 100(5):516-520, 1970.

7077 METABOLISM OF VOLATILE FATTY ACID IN HENS: ABSORPTION OF ACETIC ACID IN THE CROP SAC AND CECUM. *(Jap.)* Watanabe, E. (Agric. Coll. Miyagi, Sebdai, Japan). *Med Biol* 80(6):281-286, 1970.

- P:Motil (7086)
- P:Secr:Hepatobil (7119)(7170)(7184)
- Diagproc (7256)(7260)
- D:Stomduo (7328)
- D:S.Intest:Malabs (7444)

MOTILITY

7078 GASTRIC AND DUODENAL MOTILITY, FOOD INTAKE AND HUNGER MEASURED IN MAN DURING A 24-HR PERIOD. *(E.)* Stunkard, A. J. (Hosp. U. Pennsylvania, Philadelphia), P. B. Bloom, R. D. L. Filion, S. Fox and E. Stellar. *Amer J Dig Dis* 15(8):719-725, 1970.

Duodenal and gastric motility were investigated in 3 healthy women over a 24 hr period while the subjects rated their hunger sensations. Each subject spent the entire 24 hr in bed with motility monitoring devices and was allowed to take liquid Metrecal *ad lib*. Gastric motility was greater from 11 PM to 7 AM (135 min) than from 7 AM to 11 PM (50 min) as was duodenal motility. Hunger was found to be increasing in intensity 58% of the time when hunger ratings were recorded. Increased motility also occurred during periods of increasing hunger ratings, although a dramatic increase in hunger was sometime found without motility. Neither duodenal nor gastric motility appear to influence food intake.

7079 DUODENAL RECEPTORS AND LARGE BOWEL MOTILITY: TRANSMISSION PATHWAYS. *(Rus.)* Vorob'yeva, N. M. (Inst. Physiol., St. U. Kiev, USSR). *Biull Eksp Biol Med* 69(1):13-16, 1970.

7080 ADAPTATION OF THE MYOTATIC REFLEX DURING STIMULATION OF INTEROCEPTORS OF THE GASTROINTESTINAL TRACT. *(Rus.)* Borisova, R. P. (Sanit. Hyg. Med. Inst., Leningrad, USSR). *Fiziol Zh SSSR Sechenov* 56(2):186-190, 1970.

7081 DISRUPTION AND RESTORATION OF EXPERIMENTAL NERVE CONNECTIONS OF THE SMALL INTESTINE AFTER ITS CENTRAL DENERVATION. *(Rus.)* Maksimenkova, A. N. (Acad. Med. Sci., USSR, Moscow) and V. P. Kulik. *Biull Eksp Biol Med* 35(6):117-119, 1970.

7082 SUPERSENSITIVITY AND GASTRIC EMPTYING AFTER VAGOTOMY. *(E.)* Tinker, J. (Roy. Postgrad. Med. Sch., Hammersmith Hosp., London, England), N. Kocak, T. Jones, H. I. Glass and A. G. Cox. *Gut* 11(6):502-505, 1970.

7083 THE EFFECTS OF SEX STEROIDS UPON THE MOTILITY OF ISOLATED SMALL INTESTINE OF RABBITS. *(E.)* Yoshida, T. (Okayama U. Med. Sch., Japan), and T. Mori. *Acta Obstet Gynaec Jap* 10(4):252-257, 1970.

7084 ELECTRICAL AND MECHANICAL ACTIVITY OF THE STOMACH SMOOTH MUSCLES IN THE CAT. *(Rus.)* Kochemasova, N. G. (A. A. Bogomoletz Inst. Physiol., Ukraine SSR Acad. Sci., Kiev) M. F. Shuba and K. K. Boyev. *Fiziol Zh SSSR Sechenov* 56(2):246-254, 1970.

7085 ALTERATION OF THE PERISTALSIS OF THE SMALL INTESTINE UNDER THE INFLUENCE OF PITUITRIN. *(Rus.)* Pankov, V. I. (Ryazan Med. Inst., USSR). *Biull Eksp Biol Med* 35(6):64-65, 1970.

7086 VEGETABLE JUICE AND GALLBLADDER MOTILITY. *(Rus.)* Milyutina, V. N. (Kirov Military Med. Inst., Leningrad, USSR). *Klin Med* 48(6):70-74, 1970.

7087 COMPARISON OF THE PROPULSIVE MOTILITY OF THE SMALL INTESTINE AMONG HYPOPHYSECTOMIZED RATS WITH A PITUITARY GRAFT AND NORMAL RATS. *(E.)* Mao, W. L. (Coll. Med. Natl. Taiwan U., Taipei, Formosa) and M. T. Peng. *Chinese J Physiol* 20(3):217-222, 1969.

7088 COMPARISON OF THE GASTRIC EMPTYING AMONG HYPOPHYSECTOMIZED RATS, HYPOPHYSECTOMIZED RATS BEARING A PITUITARY GRAFT, AND NORMAL RATS. *(E.)* Peng, M. T. (Coll. Med., Natl. Taiwan U., Taipei, Formosa) and Y. L. Lai. *Chinese J Physiol* 20(3):211-216, 1969.

- P:Secr:Int (7194)
- Diagproc (7280)
- D:Esoph (7295)
- D:Stomduo (7333)
- D:Gen (7712)

SECRETION AND METABOLISM

Stomach

7089 EFFECT OF INTRAGASTRIC HYPEROSMOLAL SOLUTIONS ON GASTRIC FUNCTION. *(E.)* Harper, A. A. (Med. Sch. U. Newcastle, England), J. D. Reed and J. R. Smy. *J Physiol* 209(2):453-472, 1970.

The effects of intragastric hyperosmolal solutions on resting and secreting stomachs of anesthetized cats were studied. Hyperosmolal solutions reduced acid secretion in response to histamine and gastrin (86 and 46%, resp.) and there was a significant correlation between increase in osmolality and decrease in acid response to small doses of gastrin 1 mg/15 min. A continuous acid secretion produced by large doses (10 mg/15 min) of gastrin was not significantly reduced by hyperosmolal solutions. The loss of H^+ from resting stomachs was greatest at low pH, but was insufficient to account for the H^+ loss from secreting stomachs at similar pH. The Na^+ output in resting stomachs was increased by hyperosmolal solutions, the increase being related only to the osmolality of the solutions; for the same degree of hyperosmolality there was no difference between sodium output in the resting and secreting stomachs. The H^+ deficit associated with intragastric hyperosmolal conditions apparently does not depend upon a neutral mechanism, a blood-born hormone, or a reduction in gastric blood flow. Probably, there is an inhibition of oxyntic cell activity by release of a chemical agent from the surface cells of the mucosa.

7090 *IN VITRO* EFFECTS OF POLYVINYLPYRROLIDONE ON THE ENZYMATIC ACTION OF PEPSIN. *(E.)*

Reyes Ferretti, E. (West Central Regional U., Barquisimeto, Venezuela), O. Valbuena, M. L. Gimenez and K. Gaede. *FEBS Letters* 9(4):194-196, 1970.

Polyvinylpyrrolidone, a neutral molecule, inhibited the action of pepsin on hemoglobin at pH 1-3. Treatment of polyvinylpyrrolidone with hot hydrochloric acid (a treatment which gave a 3-8% hydrolyzed product), did not enhance the action of the inhibitor. No inhibition occurred when hemoglobin, under similar conditions, was incubated with pepsin at pH 1 in the presence of 6-21 mg of monomer, 1-vinyl-2-pyrrolidone. Polyvinylpyrrolidone appeared to enhance the milk clotting activity of pepsin at pH 5-6, whereas the natural pepsin inhibitor decreased milk clotting under similar conditions. The mechanism by which polyvinylpyrrolidone inhibited the proteolytic action of pepsin on ovalbumin and hemoglobin, but activated the milk clotting action, must be different from that involved in pepsin interaction with basic polymers, since the vinyl polymer is a neutral molecule and has no charged groups or donors for hydrogen bond formation.

7091 INHIBITION OF PEPTIC ACTIVITY BY CARBENOXOLONE AND GLYCYRRHETINIC ACID. *(E.)*

Henman, F. D. (May & Baker Ltd., Res. Lab., Dagenham, Essex, England). *Gut* 11(4):344-351, 1970.

The effect of carbenoxolone and glycyrrhetinic acid on peptic activity and total acidity of gastric juice obtained from anesthetized pylorus-ligated rats was investigated. Pretreatment with carbenoxolone did not change the volume of gastric juice or K$^+$ concentration, but a dose-dependant inhibition of peptic activity was observed (6.6% and 99% inhibition with 12.5 mg/kg and 200 mg/kg, resp.). A reduction in total acid output was observed with all doses of carbenoxolone but this effect was less marked than the peptic inhibition. Glycyrrhetinic acid was less effective (53.5% inhibition at 200 mg/kg) than carbenoxolone in reducing peptic activity and had no effect on total acid. After 17 days' pretreatment both treated groups had less peptic activity than controls, but this trend was not significant. After 23 days' pretreatment, the combination of carbenoxolone and spironolactone decreased peptic activity (17.4 μg/ml x 10^2) compared to controls (21.9 μg/ml x 10^2) but the carbenoxolone-treated animals gave a higher value than the controls (24.8 μg/ml x 10^2). Both carbenoxolone and Roter (bismuth subnitrate) reduced peptic activity *in vitro*, the former being 10 times more active than Roter. In the pepsin plate experiments, dose-dependent inhibition of peptic digestion similar to that seen in pylorus-ligated rats was observed with carbenoxolone, complete inhibition of 10 μg pepsin occurring with 250 μg carbenoxolone. The actions of carbenoxolone may be useful in treatment of peptic ulcers.

7092 EFFECT OF SECRETIN AND CHOLECYSTOKININ ON PENTAGASTRIN-STIMULATED GASTRIC SECRETION IN MAN. *(E.)*

Grossman, M. I. (VA Ctr., Los Angeles, Calif.) and A. M. Brooks. *Gastroenterology* 59(1):114-119, 1970.

The effects of secretin (2 U/kg/hr i.v.) and cholecystokinin (4 U/kg/hr i.v.) were determined on pentagastrin-stimulated (4 μg/kg/hr i.v.) gastric secretion in human volunteers using modified double lumen Dreiling tubes fitted with inflatable cuffs to prevent reflux of duodenal contents into the stomach. Secretin inhibited the gastric acid output in response to pentagastrin from 80% of the initial output as seen in controls to approximately 60% and increased pepsin output, while cholecystokinin inhibited the acid output by 33% and did not affect pepsin output. Secretin at a higher dose (6 U/kg/hr) inhibited gastric acid output by 50% compared to the 21% of the lower dose, and highly purified cholecystokinin used in 1 subject inhibited the acid output by only 49% compared to the 78% of the commercial material used in the same subject.

7093 CONCENTRATIONS OF ANTRAL GASTRIN IN THE FETAL, NEONATAL AND ADULT DOG. *(E.)*

Thompson, J. C. (U. Texas Med. Branch, Galveston), J. L. Ban, D. D. Reeder, B. G. Clendinnen, F. M. Hirose and J. H. Miller. *Arch Surg* 101(3):406-410, 1970.

Gastrin concentrations were measured in the antral mucosa of over 100 dogs from 4 weeks before birth to adulthood by radioimmunoassay. Antra and sera from the fetuses were pooled according to litters to obtain sufficient volume for the tests. Gastrin was found in all prenatal specimens, the mean concentration being 1.3 ng/g in younger fetuses and 1.8 ng/g in fetuses less than 2 weeks from term. Postnatal gastrin values (1 day to 3 weeks) averaged 1.7 ng/g and gastrin in the adult canine antrum measured 3.5 ng/g. Prenatal serum gastrin values were small (< 28 pg/ml) when compared with a serum value of 46 pg/ml in 8 to 12 weeks pups. Antral gastrin was therefore found to be greater in adults and in 8 to 12 week pups than in canine fetuses although parietal cells are present and secreting in the canine fundus as early as 4 weeks after birth.

7094 GASTRIC SECRETION OF MAGNESIUM FOLLOWING STIMULATION WITH PEPTAVLON AND HISTAMINE. *(E.)*

Aagaard, P. (U. Hosp. Copenhagen, Denmark) and J. Christiansen. *Gastroenterology* 59(1):46-49, 1970.

Gastric secretion of magnesium following stimulation with histamine and peptavlon (a new synthetic pentapeptide) was investigated in 16 patients who underwent operations for duodenal ulcer. After administration of histamine or peptavlon at doses of 0.7 or 0.1 μg/kg/min i.v., resp., there was a distinct increase in concentration of H$^+$, output of H$^+$, and volume of gastric juice; after 30-45 min, a relatively constant level was reached. A significant increase in the output of magnesium from the basal levels (10 μEq/15 min) to the peak values (50-60 μEq/15 min) occurred after 15 min of stimulation with histamine and peptavlon, and after 1 hr the magnesium output returned to a level 2 times greater than the basal level. There was a 2-fold increase from the basal period to the peak value, in the concentration of magnesium after both agents, and this was followed by a drop to a new level lower than the basal levels.

There appeared to be a decrease in concentration and
an increase in output of magnesium following stimulation of the stomach with histamine and peptavlon.

7095 FURTHER PURIFICATION OF A POLYPEPTIDE DEMONSTRATING ENTEROGASTRONE ACTIVITY.
(E.) Brown, J. C. (Dept. Physiol., U. British Colum-
ɔia, Vancouver, Canada), V. Mutt and R. A. Pederson.
I Physiol 209(1):57-64, 1970.

Biochemical purification and analysis of a polypeptide
having enterogastrone activity with no cholecysto-
kinin or pancreozymin effects was described. Puri-
fied fractions were tested on 3 conscious dogs with
denervated fundic pouches and cholecystokinin activ-
ity was bioassayed with guinea pig gall bladder.
After Sephadex gel filtration of partially purified
cholecystokinin-pancreozymin, all fractions not
showing cholecystokinin activity were pooled, adsorbed
to alginic acid and fractionated on CM-cellulose or
Sephadex G-25. Amino acid analysis revealed the
bsence of proline and the presence of high concen-
trations of aspartate, glutamate, and lysine. Acid
output from pentagastrin (4.0 μg/kg/hr) stimulation
of the pouches fell 36 to 70% within 15 min after
administration of the polypeptide (0.25, 0.5 or 1.0
g/kg/hr). Identification of the polypeptide in the
lood and further analysis of its physiological
effects will be necessary before its role is
nderstood.

096 THE RECREMENTITIOUS ORIGIN OF PYLORIC PEPSINOGEN AND AMYLASE. *(Rus.)* Korotko,
. F. (Kalinin's St. Med. Inst., Andizhan, USSR),
. F. Kamakin and K. B. Inamova. *Fiziol Zh USSR*
echenov 56(2):255-260, 1970.

097 SECRETORY PROCESSES AND NUCLEIC ACID METABOLISM IN THE STOMACH MUCOSA. *(Ukr.)* Svistun, T. I. (A. A. Bogomoletz Inst.
hysiol., Acad Sci. Ukraine SSR, Kiev). *Fiziol*
h 16(2):274-280, 1970.

7098 THE EFFECT OF LOCAL HYPOTHERMIA ON GASTRIC FUNCTION. *(Rus.)* Sidorenkov, O. K. (Arkhangel'sk Med. Inst., Arkhangel'sk, USSR). *Pat Fiziol Eksp Ter* 14(1):73-74, 1970.

7099 EXPERIMENTAL STUDY OF GASTRIC SECRETION AND PEPTIC ULCER: II. CORTICOIDS AND GASTRIC SECRETION. *(Por.)* Goncalves, E. L. (Fac. Med. U. Sao Paulo, Brazil), R. G. Bevilacqua, M. C. C. Machado, J. B. Piovesan, N. Margarido, A. D. De Almeida, C. C. Musati, Y. Goncalez, E. Da S. Bastos and A. C. Netto. *Rev Ass Med Brasil* 14(7):111-116, 1970.

7100 SENSORY DEPRIVATION ON VISCERAL ACTIVITY: I. THE EFFECT OF VISUAL DEPRIVATION ON CANINE GASTRIC SECRETION. *(E.)* Schapiro, H. (U. Tennessee Med. U., Memphis), L. D. Wruble, L. G. Britt and T. A. Bell. *Psychosom Med* 32(4):379-396, 1970.

- P:Morph (7027)(7036)(7050)
- P:Absorp (7065)(7073)
- Diagproc (7240)(7254)(7256)
- D:Stomduo (7327)(7331)(7338)(7346)(7370)(7375)
- D:Stomduo (7384)(7396)(7400)(7409)
- D:Gen (7679)

SECRETION AND METABOLISM

Pancreas

01 A MODIFIED ANNULA FOR SAMPLING PANCREATIC JUICE IN THE DOG. *(E.)* Fawcett, A. N. (Roy.
firm. Sheffield, England). *Gut* 11(6):532-533, 1970.

new technique for collection of pancreatic juice
chronic animal studies was described. The abdomen
s opened and the duodenum divided transversely
tween the common bile duct and the main pancreatic
ct and also at a small distance distal to the pan-
eatic duct with the end of the intervening segment
osed to form a pouch into which the secretion drains.
The proximal duodenum was anastomosed end to side in the area of the duodenal-jejunal junction for continuity. One part (A) of the cannula from the pancreatic duct was inserted through an antimesenteric slit in the duodenal pouch and secured by purse string sutures. The second part (B) of the cannula was inserted into the pouch at the opposite wall to A and was connected to the abdominal wall; part B screws firmly into A. Two dogs fixed with the cannula have been prepared and have enjoyed good postoperative health with no complications.

7102 DETERMINATION OF TRYPSIN INHIBITOR IN THE PANCREATIC JUICE OF THE DOG. *(Rus.)* Fomina, L. S. (Acad. Med. Sci. USSR, Moscow). *Fiziol Zh SSSR Sechenov* 56(2):261-265, 1970.

7103 AGE-SPECIFIC PECULIARITIES OF PANCREATIC SECRETION AGAINST THE BACKGROUND OF DIFFERENT NUTRITIONAL PATTERNS. *(Rus.)* Smolskaya, G. P. (Leningrad Med. Inst. Hygiene, Leningrad, USSR). *Vop Pitan* 29(2):22-26, 1970.

7104 THE EFFECT OF PARENTERAL ADMINISTRATION OF PROTEIN HYDROLYSATES ON THE EXTERNAL SECRETION OF THE PANCREAS. *(Rus.)* Vorob'yeva, T. V. (Inst. Nutrition, Acad. Med. Sci. USSR, Moscow, USSR) and G. K. Shlygin. *Vop Pitan* 29(2):18-22, 1970.

- P:Morph (7030)

SECRETION AND METABOLISM

Hepatobiliary Tract

7105 THE SENSITIVITY OF DICARBOXYLATE ANION EXCHANGE REACTIONS TO TRANSPORT INHIBITORS IN RAT LIVER MITOCHONDRIA. *(E.)* Robinson, B. H. (Dept. Biochem., U. Toronto, Canada) and G. R. Williams. *Biochim Biophys Acta* 216(1):63-70, 1970.

The sensitivity of dicarboxylate anion exchange reactions to transport inhibitors was studied in rat liver mitochondria loaded with ^{14}C-labeled succinate, L-malate or malonate, and exchange of label with unlabeled dicarboxylate anion and P_i was measured at 0°C. The 'inhibitor stop' technique was used to determine the rates of exchange and the concentration dependence of these rates. The P_i/L-^{14}C-malate exchange was completely inhibited by 12.5 mM butylmalonate, while the malonate/L-^{14}C-malate exchange required 25 mM butylmalonate for complete inhibition and the L-malate/L-^{14}C-malate exchange required 25 mM of *p*-iodobenzylmalonate. The P_i/^{14}C-dicarboxylate exchanges were slower than the corresponding malonate/^{14}C-dicarboxylate exchanges when 1 mM P_i or malonate were used, although the K_m values for P_i- and malonate-stimulated exchanges were not very different for each category of ^{14}C-dicarboxylate anion. The different sensitivities of the P_i-dicarboxylate to butylmalonate inhibition and the dicarboxylate-dicarboxylate exchanges are probably due to differences in substrate binding affinities at the extramitochondrial side of the anion exchange carrier.

7106 THE EFFECTS OF 2-ETHYLCITRATE AND TRICARBALLYLATE ON CITRATE TRANSPORT IN RAT LIVER MITOCHONDRIA AND FATTY ACID SYNTHESIS IN RAT WHITE ADIPOSE TISSUE. *(E.)* Robinson, B. H. (Dept. Biochem. U. Toronto, Ontario, Canada), G. R. Williams, M. L. Halperin and C. C. Leznoff. *Europ J Biochem* 15(2):263-272, 1970.

Fluorimetric measurement of intramitochondrial (rat liver) NAD(P) reduction showed 2-ethylcitrate and propane-1,2,3,-tricarboxylic acid (tricarballylate) to be inhibitors of the citrate transport system as monitored by *cis*-aconitate and isocitrate oxidation. Kinetic data showed the inhibitions to be competitive with tricarboxylate anion. When the exchange of intramitochondrial ^{14}C-citrate with added extramitochondrial citrate or L-malate was measured at low temperatures, 2-ethylcitrate and 2-propylcitrate were found to be good inhibitors, while tricarballylate did not inhibit and was actually a good substrate for exchange on the transporting system. Using epididymal fat pads from rats, neither 2-ethylcitrate nor tricarballylate at low concentrations (less than 10 mM) were found to inhibit fatty acid synthesis with pyruvate as precursor, but both were potent inhibitors of fatty acid synthesis with glucose as precursor (30% inhibition, accompanied by a similar decrease in pyruvate and lactate outputs).

7107 STUDIES ON THE PHOSPHOLIPID METABOLISM IN CHOLINE-DEFICIENT GUINEA PIGS: I. INCREASED ACTIVITY OF LECITHIN SYNTHESIS IN LIVER SLICES. *(E.)* Suzuki, S. (Aichi Cancer Ctr. Res. Inst., Nagoya, Japan), M. Kobayashi and Y. Kotake. *J Vitamin* 16(2):107-118, 1970.

Liver slices from male and female guinea pigs placed on choline-deficient and choline-supplemented (contr diets were used to compare lecithin synthesis from 4 radioactive precursors. Incorporation of 10 μC ^{32}PO into the phosphatidylcholine fraction relative to that into the phosphatidylethanolamine fraction was higher in the choline-deficient group than in the control group. Liver slices from choline-deficient animals incubated with 1 µC choline-$^{14}CH_3$ (0.22 µmoles) showed a higher incorporation of radioactivity into phosphatidylcholine than control animals, but there was no difference between the two groups in the incorporation of ethanolamine-^{14}C into phosphatidylethanolamine, although more of this radioactivity was found in phosphatidylcholine in the choline-deficient group than in controls. The choline-deficient group also showed a 2-fold incorporation of the labeled methyl group from L-methionine-C^3H_3 as compared with the control group. As the activity of methionine activating enzyme was the same level in the 2 groups, the higher activity of phosphatidylmethyltransferase system appeared to be responsible for the higher phospholipid methylating activity in the choline deficient group. Preincubation of the liver slices with *N*-methylethanolamine or *N*,*N*-dimethylethanolamine prior to addition of L-methionine-C^3H_3 doubled the incorporation of labeled methyl groups into the phospholipids.

7108 GROWTH HORMONE INDUCTION OF ORNITHINE DECARBOXYLASE IN RAT LIVER. *(E.)* Russell, D. H. (Baltimore Cancer Res. Ctr., Md.), S. H. Snyder and V. J. Medina. *Endocrinology* 86(6):1414-1419, 1970.

The effect of growth hormone on hepatic ornithine decarboxylase activity was investigated in adult and weanling rats. Single injections of growth hormone (25 mg/kg) produced up to 30-fold increases in ornithine decarboxylase activity in both adults and weanlings; however, with lower doses of growth hormone (1 mg/kg), a greater increase in activity occurred in weanlings (10-fold) than in adults (4-fold). Both adult and weanling rats showed the same time course of ornithine decarboxylase activity enhancement after growth hormone with peak enzymatic activity at 4 hr and a decline to basal levels by 8 hr after hormone administration. Cycloheximide completely prevented the stimulation of ornithine carboxylase activity regardless of the time of its administration (1 hr before or 1, 2, or 3 hr following growth hormone administration). Actinomycin D (2 mg/kg) given immediately prior to growth hormone administration almost totally prevented the growth hormone-induced increase in enzyme activity. however, the ability of actinomycin D to inhibit ornithine decarboxylase activity enhancement decreased as the time interval between growth hormone administration and actinomycin D treatment increased. In weanling rats receiving cycloheximide 3 hr after growth hormone, ornithine decarboxylase activity decreased rapidly with a half life of about 15 min, indicating an extremely rapid turnover rate for the enzyme. The half-life calculated from the natural decline of growth hormone-induced ornithine decarboxylase activity was about 24 min.

7109 STUDIES ON LYSOSOMES: XIII. EFFECTS OF STILBAMIDINE AND HYDROXYSTILBAMIDINE ON *IN VITRO* AND *IN VIVO* SYSTEMS. *(E.)* Weissmann, G. New York U. Sch. Med., New York), P. Davies, K. Krakauer and R. Hirschhorn. *Biochem Pharmacol* 9(4):1251-1261, 1970.

The effects of stilbamidine and hydroxystilbamidine on rabbit liver lysosomes *in vitro* and *in vivo* were investigated. At 10^{-4} M, the stilbamidines had no inhibitory effect upon the free activity of any of the lysosomal hydrolases in soluble form (β-glycerol phosphatase, β-glucuronidase, aryl sulfatase or cathepsin) whereas at 10^{-3} M the drugs inhibited β-glycerol phosphatase, β-glucuronidase and aryl sulfatase. At concentrations between 5 x 10^{-5} and 10^{-3} M, stilbamidine retarded cathepsin release by retinol or solvent alone but had no effect upon the activity of the enzyme when the granules had been totally disrupted by Triton X-100. Hydroxystilbamidine (10^{-4} M) effectively retarded release of aryl sulfatase both by diethylstilbestrol (5 x 10^{-4} M) and its solvent dimethylsulfoxide (2.0%, v/v). Enzyme release provoked by ultraviolet irradiation was diminished if the granule fractions had been pretreated with stilbamidine. Vitamin A (5 X 10^5 IU)-induced ear cartilage collapse and severe loss of hair were delayed when animals were treated with stilbamidine concurrently with vitamin A. At concentrations of 5 x 10^{-4} M and 10^{-4} M, stilbamidine and hydroxystilbamidine inhibited uridine incorporation into acid precipitable material by approximately 20% during the first 3 hr after phytohemagglutinin stimulation. The effects of stilbamidines in each of these systems apparently resemble those of equivalent concentrations of cortisol and chloroquine.

7110 EFFECTS OF IRON, RIBOFLAVIN AND IODIDE DEFICIENCIES ON HEPATIC DRUG-METABOLIZING ENZYME SYSTEMS. *(E.)* Catz, C. S. (Dept. Pediat., State U. New York, Buffalo), M. R. Juchau and S. J. Yaffe. *J Pharmacol Exp Ther* 174(2):197-205, 1970.

The effects of iron, riboflavin and iodide nutritional deficiencies on hepatic drug-oxidizing, -reducing and -glucuronidating systems, microsomal cytochromes and hexobarbital sleeping times were studied in adult mice. Chronic iron deficiency resulted in an increase in hexobarbital side chain oxidation (iron-supplemented, 15.3 nmoles/mg protein vs iron-deficient, 25.5), aminopyrine N-demethylation (iron-supplemented, 16.1 vs iron-deficient, 22.9), and microsomal cytochrome b_5 concentrations; no significant changes occurred in sleeping times and in cytochrome P-450 content. Riboflavin deficiency in weanling mice resulted in a biphasic effect on sleeping times, an initial decrease followed by an increase after 15 days on the deficient diet. Microsomal cytochrome P-450 content was markedly increased by riboflavin deficiency but oxidative metabolism measured *in vitro* was only slightly increased. Iodide deficiency in hypothyroid (propylthiouracil-treated) mice resulted in marked increases in drug-oxidizing activity *in vitro*, compared to activities measured in liver homogenates from iodide-supplemented hypothyroid animals. Microsomal content of cytochrome b_5 and P-450 were increased but p-nitrobenzoic acid reduction and p-nitrophenol conjugation were not affected by iodide deficiency. Hexobarbital sleeping times correlated well with *in vitro* enzymic activities in experiments with iodide-deficient mice but little or no correlation was observed in riboflavin-or iron-deficient animals.

7111 INFLUENCE OF DIETARY LIPID ON LIPOGENESIS AND ON THE ACTIVITY OF MALIC ENZYME AND CITRATE CLEAVAGE ENZYME IN LIVER OF THE GROWING CHICK.

(E.) Yeh, Y. Y. (Dept. Anim. Sci., U. Illinois, Urbana-Champaign), G. A. Leveille and J. H. Wiley. *J Nutr* 100(8):917-924, 1970.

Fatty acid synthesis (incorporation of acetate-1-^{14}C or glucose-U-^{14}C), malic enzyme, and citrate cleavage enzyme activities were determined in male crossbred chicks after acute and chronic forced feedings of high fat diets. One hr after the acute feeding, fatty acid synthesis (nmole incorporated/100 mg liver/ 2 hr) from acetate-1-^{14}C dropped from 1178 to 161 and from 926 to 470 in 2 separate experiments, and synthesis from glucose-U-^{14}C dropped from 66 to 10 and from 49 to 28; after 2 hr no further change was observed in the first experiment but synthesis dropped another 30-40% in the second experiment. Malic enzyme and citrate cleavage enzyme activities were not affected. In animals fed a 10% lipid diet for 3 weeks, fatty acid synthesis decreased from acetate (1074 to 336) and from glucose (63 to 18); in animals fed a 20% lipid diet, there was an even greater decrease in fatty acid synthesis from acetate (1074 to 8) and from glucose (63 to 0.7). *In vivo* studies substantiated the decrease in the fatty acid synthesis (30% of control with 10% lipid and 5% of control with 20% lipid from acetate, and 20% of control with 10% lipid and to 2% with 20% lipid from glucose). Both malic enzyme and citrate cleavage enzyme activities dropped from control values (64 and 55 nmole/mg/min, resp.) with 10% lipid diet (33 and 31 nmole/mg/min, resp.) and with the 20% lipid diet (9 and 16 nmole/mg/min, resp.), and a carbohydrate-free diet with 29% corn oil lowered malic and citrate cleavage enzyme activities (107 to 30 and 189 to 10 nmole/mg/ml, resp.). Definite correlations were observed between fatty acid synthesis and citrate cleavage enzymes (r of 0.826), between fatty acid synthesis and malic enzyme (r of 0.781), and between malic and citrate cleavage enzymes (r of 0.802).

7112 EFFECT OF CCL$_4$ ON THE VITAMIN-PROTEIN PROFILE OF RAT LIVER SUBCELLULAR ELEMENTS.

(E.) Baker, H. (New Jersey Coll. Med. Dent., East Orange), A. V. Luisada-Opper, O. Frank, S. Feingold and C. M. Leevy. *Exp Molec Path* 12(3):306-315, 1970.

Vitamin distribution in subcellular fractions from normal rat liver was compared with that in fractions from CCl$_4$-injured (0.2 ml/100 gm intragastrically) liver. The nucleus and cytosol contained the highest proportions of all vitamins and protein, and the microsomes and lysosomal fraction contained the least in normal liver. During acute necrosis the nucleus and lysosomal fraction released protein into the cytosol, and at maximal necrosis (24 hr) the lysosomal protein titer was decreased to about 1/4 of that seen in untreated animals. During regeneration, a massive influx of protein into the nucleus resulted in about 2.5 times more protein than at the time of maximal necrosis and 2 times more than in controls, and the microsomal protein decreased to about half that of the control animals. Vitamin B$_{12}$ and folate were increased in the nucleus, mitochondria, and microsomes during CCl$_4$ injury and recovery, creating a stockpile of these RNA- and DNA- synthesizing vitamins for repair processes. The best index of injury and repair may be the shifts in the various types of folate and vitamin B$_{12}$ in the cytosol and nucleus.

7113 STUDIES ON THE ACTIVE SITE OF MIXED FUNCTION OXIDASES IN RABBIT LIVER MICROSOMES.

(E.) Hlavica, P. (Pharmacol. Inst. U. Munich, Germany). *Biochem Biophys Res Commun* 40(1):212-217, 1970.

The influence of the hydrogen ion concentration on the Michaelis constants and maximum reaction velocities in the N-oxygenation of aniline, N-ethylaniline and N,N-dimethylaniline was studied in rabbit liver microsomes. The free groups in the active center of the microsomal oxygenases catalyzing the N-oxygenation of aniline, N-ethylaniline and N,N-dimethylaniline were shown to have pKs of 7 and 7.4. Aniline was bound to the oxidized form of the oxygenase, whereas N-ethylaniline and N,N-dimethylaniline were bound to the reduced form of the N-oxygenating system. At least two different hydroxylases seem to be involved in the N-oxygenation of compounds, one for aniline and another for N-ethylaniline and N,N-dimethylaniline.

7114 AMINO ACID TRANSPORT IN HEPATOMA CELL CULTURES DURING TYROSINE AMINOTRANSFERASE INDUCTION.

(E.) Potter, V. R. (McArdle Lab., U. Wisconsin, Madison), E. L. Krawitt, E. F. Baril and J. E. Becker. *Science* 169(3942):294-296, 1970.

Amino acid (α-aminoisobutyric acid) transport in hepatoma cell cultures during tyrosine aminotransferase induction was investigated. α-Aminoisobutyric acid transport was increased by insulin (0.5 μg/ ml) but not by hydrocortisone (control 1.8, 1.6; treatment 3.1, 1.7 dpm/mg/hr x 10^3, resp.). Both of these agents induced tyrosine aminotransferase activity in this sytem (control 0.26, 0.21; treatment 0.46, 2.55 μmole/mg/hr, resp.). The apparent increase in α-aminoisobutyric acid transport and tyrosine aminotransferase activity produced by glucagon 1.6-fold and 3-fold, resp.) was probably caused by insulin contamination. Insulin did not increase transport in this system until after tyrosine aminotransferase activity had reached maximum levels (3 hr). The underlying mechanisms increasing α-aminoisobutyric acid transport appear to differ from those for tyrosine aminotransferase induction with hydrocortisone

7115 THE ENZYMATIC DECARBOXYLATION OF DOPA IN HUMAN LIVER HOMOGENATES.

(E.) Vogel, W. H. (Jefferson Med. Coll., Philadelphia, Pa.), R. Snyder and T. A. Hare. *Proc Soc Exp Biol Med* 134(2):477-481, 1970.

Human liver tissue was investigated for the presence of aromatic amino acid decarboxylase and for the effects of various drugs and metabolites on the enzyme. Liver homogenates were obtained between 6 to 11 hr post-mortem from adult patients dying of coronary occlusion. After storage at -73°, decarboxylation of DOPA was determined by measuring $^{14}CO_2$ formation after DL-DOPA-1-^{14}C incubation. The rate of DOPA decarboxylation was constant for 90 min and linear with the DOPA concentration in the 1.5 x 10^{-5} to 7.5 x 10^{-5} M range at the pH optimum of 7 to 8. The enzyme activity was 50% inhibited by 30 μM *p*-chloro- ercuribenzoate, 70 μM dopamine, 400 μM 5-hydroxy- ryptophan, and 5 and 200 μM phenylpyruvate (liver omogenates from 2 individuals had high sensitivity) hereas EDTA, chlorpromazine, phenylalanine, d-methyl- OPA and α-methyltyrosine were not inhibitory in less han mM concentrations. A nonenzymatic decarboxylation of DOPA which was enhanced by dialysis of either resh or boiled homogenate was also observed.

'116 LIVER REGENERATION: OLD AND NEW CONCEPTS.

(E.) Gentile, J. M. (C. H. U. Sherbrooke, uebec, Canada), L. Avila and J. T. Grace, Jr. *Amer Surg* 120(1):2-6, 1970.

osthepatectomy serum samples from male rats obtained mmediately after exsanguination were examined with n *in vitro* bioassay system employing rat and mouse ibroblasts for a factor that stimulates cell divi- ion in cell culture. The addition of 5% post- epatectomy (partial) rat serum to spinner cultures f L 929 cells significantly enhanced cellular rowth after 75 hr after addition of the serum. The rowth enhancing ability was present in serum drawn rom animals 20 hr after surgery, reached a peak at 4 hr, and then decreased but was still detectable fter 72 hr. The effects of this growth stimulating actor were confirmed by a 10-fold increase in the itotic index of embryonic rat fibroblasts grown in eighton tubes compared to controls. Treatment with rypsin or desoxyribonuclease did not affect the timulating activity of the posthepatectomy serum, ut bovine and micrococcus ribonucleases completely emoved the stimulating activity.

117 RATES OF TURNOVER OF DEOXYTHYMIDINE KINASE AND OF ITS TEMPLATE RNA IN NOVIKOFF HEPATOMA ND NEONATAL LIVER.

(E.) Bresnick, E. (Baylor Coll. ed., Houston, Tex.) and S. S. Burleson. *Cancer es* 30(4):1060-1063, 1970.

e rates of turnover of deoxythymidine kinase and of ts template RNA in Novikoff ascites hepatoma and eonatal rat liver were studied by the use of actino- cin D and cycloheximide. Actinomycin D (5-50 μg/ml) hibited the incorporation of uridine-^{14}C into RNA the Novikoff ascites hepatoma cells by more than %. Under these conditions, however, little change deoxythymidine kinase activity was observed during e duration of the experiment (4 hr). Puromycin 00 μg/ml) and cycloheximide (400 μg/ml) effectively ocked the incorporation of aspartate-^{14}C into hepa- ma cell protein (90%) and decreased deoxythymidine nase activity with a half life of decay of 3.5 hr. nce aspartate transcarbamylase activity was not tered under identical conditions during the 4 hr incubation in the presence of either cycloheximide puromycin, the decrease in deoxythmidine kinase s apparently not a generalized effect upon enzyme tivity.

7118 STUDIES ON THE DEMETHYLATION, HYDROXYLATION AND N-OXIDATION OF IMIPRAMINE IN RAT LIVER.

(E.) Nakazawa, K. (Kyoto U. Fac. Med., Japan). *Biochem Pharmacol* 19(4):1363-1369, 1970.

Possible relations between the N-oxidation, demethylation, and 2-hydroxylation reactions were studied in the post mitochondrial supernatant of rat liver incubated with imipramine-^{14}C. Imipramine-N-oxide was not involved as an intermediate in the formation of desmethylimipramine from imipramine. Demethylation and 2-hydroxylation reactions were stimulated 2-fold following phenobarbital treatment, while the enzyme system for the N-oxidation reaction was not induced. N-oxidation was relatively insensitive to inhibitors such as SKF 525A, but demethylation was very sensitive (> 95% inhibition with 0.1 mM SKF 525 A). The metabolic pathways of imipramine (demethylation and 2-hydroxylation or N-oxidation) appear to be independent of one another, and some unexpected clinical effects of imipramine may be due to altered activities of an enzyme responsible for the biotransformation of this drug.

7119 SULFOBROMOPHTHALEIN METABOLISM AND EXCRETION IN RATS WITH IODOMETHANE-INDUCED DEPLETION OF HEPATIC GLUTATHIONE.

(E.) Plaa, G. L. (Fac. Med. U. Montreal, Quebec, Canada) and B. G. Priestly. *J Pharmacol Exp Ther* 174(2):221-231, 1970.

BSP metabolism and excretion were studied in rats with iodomethane-induced depletion of hepatic glutathione. Pretreatment with 75 mg/kg p.o. of iodomethane resulted in depletion of hepatic glutathione with maximal response between 1 and 2 hr after administration (controls, 285 μg/100 mg liver; 1 hr, 180; 2 hr, 150). BSP infusion into untreated rats produced a similar depletion of glutathione (183 μg/100 mg liver) and significantly augmented depletion caused by iodomethane treatment (95 μg/100 mg liver); lower doses of iodomethane (37.5 and 18.75 mg/kg) did not produce significant depletion of glutathione. When BSP (2.5 mg/min/kg) was infused i.v., biliary concentration of total BSP was significantly lower in iodomethane-treated rats (0.39 mg/min/kg) than in untreated controls (0.92 mg/min/kg). Although the ability of the hepatic enzyme system to catalyze BSP-glutathione conjugation *in vitro* was not impaired, depletion of glutathione by pretreatment with iodomethane produced lower biliary concentrations of BSP-glutathione and higher biliary concentrations of unconjugated BSP. Single rapid doses (20 and 60 mg/kg) of BSP resulted in no differences in BSP excretion between iodomethane and untreated rats.

7120 STUDIES ON THE INDUCTION AND REPRESSION OF L-SERINE-DEHYDRATASE IN RAT LIVER.

(Ger.) Straub, K. (Biochem. Inst. U. Freiburg, Germany), H. Jennissen and H. Kroger. *Z Ges Exp Med* 152(4):294-305, 1970.

Induction and repression of L-serine dehydratase was studied in livers of normal and adrenolectomized female rats fed a protein-free diet for 5 days prior to the experiment. The enzyme was induced by starvation, by casein hydrolysate (1 g/150 g by stomach tube) and by L-tryptophan (400 mg/kg i.p. every 8 hr during a 50 hr starvation period). The L-serine dehydratase activity was repressed by glucose (1 g/150 g administered 35-96 hr after feeding of casein hydrolysate) and by lactate, pyruvate and glycerin in normal rats. Actinomycin repressed further induction of L-serine dehydratase activity but not to the same degree as glucose. Induction of enzymatic activity was diminished with increased age of the animals; the activity was 6x higher in 26 day old rats after induction by starvation, and 3 x higher in 30-day-old rats after feeding of casein hydrolysate, both in comparison with 126-day-old animals. In adrenalectomized animals, cortisone (10 mg/150 g i.p.) caused a parallel rise of L-serine dehydratase activity and liver glycogen, while in normal rats L-serine dehydratase activity decreased and glycogen increased.

7121 REGULATION OF HEPATIC TYROSINE TRANSAMINASE *IN VIVO* THROUGH INTERACTION OF NOREPINEPHRINE AND THE PYRIDOXAL PHOSPHATE CO-FACTOR.

(E.) Black, I. B. (Natl. Inst. Mental Hlth., Bethesda, Md.). *J Pharmacol Exp Ther* 174(2):283-289, 1970.

The regulation of hepatic tyrosine transaminase through interaction of norepinephrine and pyridoxal-5'-phosphate co-factor was studied in adrenolectomized rats. Norepinephrine suppressed and ultimately blocked a rise in tyrosine transaminase activity induced by pyridoxine. The pyridoxine-treated group had tyrosine transaminase activity of 154 μmole/g/hr while the control group activity was 68 μmole/g/hr. Tyrosine transaminase levels went from 150 to 70 μmole/g/hr with pyridoxine and 0.1-1.0 mg/kg of norepinephrine. Pyridoxine administration (every 2 hr, 75 mg/100 g) raised enzymatic activity to a new plateau. Enzyme induction was also blocked by dopamine, primary catecholamines which form complexes with the co-factor, and by L-penicillamine, a known binding agent of pyridoxal-5'-phosphate. Circadian rhythm in tyrosine transaminase activity was abolished by cycloheximide and by norepinephrine. Norepinephrine, by competing for the co-factor, apparently inhibits tyrosine transaminase synthesis and contributes to generation of enzyme rhythm.

7122 PLASMA PROTEIN CATABOLISM BY THE PERFUSED RAT LIVER: THE EFFECT OF ALTERATION OF ALBUMIN CONCENTRATION AND DIETARY PROTEIN DEPLETION.

(E.) Hoffenberg, R. (Natl. Inst. Med. Res., London, England), A. H. Gordon, E. G. Black and L. N. Louis. *Biochem J* 118(3):401-404, 1970.

The relation between the rate of albumin catabolism and its plasma concentration and the adaptive fall in catabolism that accompanies low-protein feeding *in vivo* were investigated in the perfused rat liver. The fractional rate of catabolism of albumin, fibrinogen and transferrin were unaffected by the addition of large amounts of albumin. Because of the augmented pool, there was a substantial increase in the absolute amount of albumin degraded per hr, whereas the absolute amounts of the other 2 proteins degraded per hour remained constant. The measurement of albumin catabolic rates with liver from protein-deprived rats in the presence of normal blood and blood from protein-deprived animals demonstrated that when normal blood was used, the fractional rate of catabolism was just below the range found in normal livers (normal 0.068%/hr, treatment 0.032%/hr) but it was abnormally low (0.013 and 0.032%/hr) when blood from protein-deprived rats was used; in one case it was immeasurably low, and the rate became elevated when albumin was added to the perfusate pool (0.043 and 0.068%/hr, resp.). These findings were consistent with the theory of pinocytosis as a step in the degradation of plasma proteins by hepatic parenchymal cells.

7123 THE COMPARTMENTATION OF CoA AND FATTY ACID ACTIVATING ENZYMES IN RAT LIVER MITOCHONDRIA.

(E.) Skrede, S. (U. Hosp. Oslo, Norway) and J. Bremer. *Europ J Biochem* 14(3): 465-472, 1970.

Compartmentation and retention of CoA and localization of fatty acid activating enzymes were studied in rat liver mitochondria with tetrathionate, a selective inhibitor of the outer fatty acid activating system. The inhibition of the fatty acid activating system by tetrathionate (5 mM) was reversed by CoA (16 μM) and potentiated by carnitine (0.8 mM), indicating that a small pool of CoA attached to the outside of the outer membrane exists as acyl-CoA. A leakage of CoA from the mitochondria during the incubations was increased by Pi and 2,4-dinitrophenol (15 and 0.25 mM, resp.). The leakage and inactivation of mitochondrial CoA by uncoupler was reversed by ATP which apparently rephosphorylated the dephospho-CoA formed by uncoupler and reacylated CoA in the reaction mixture. Cystamine (10 mM) inhibited fatty acid oxidation in liver mitochondria (50%). The residual activity appears to be due to an internal system activated by added ATP and inaccessible to the disulfide and this activity may depend on the medium chain synthetase or on a separate enzyme in the matrix compartment. Atractyloside (125 μg) in the presence of 3 μM CoA inhibited both long chain acyl-CoA synthetase and carnitine palmityltransferase (47 and 18% resp.) and the inhibition of both enzymes was counteracted by higher concentrations (40 μM) of CoA (12 and 7% resp.). Fatty acid oxidation in mitochondria apparently can be explained by a simple two compartment model where the inner membrane is the permeability barrier.

7124 EFFECT OF PARATHION ON LIVER MICROSOMAL ENZYME ACTIVITIES INDUCED BY ORGANOCHLORINE PESTICIDES AND DRUGS IN FEMALE RATS.

(E.) MacDonald, W. E. (U. Miami Sch. Med., Florida), J. MacQueen, W. B. Deichmann, T. Hamill and K. Copsey. *Int Arch Arbeitsmed* 26(1):31-44, 1970.

Female rats were treated with a single p.o. dose of parathion in combination with a single p.o. dose of one of a series of organochlorine pesticides and drugs to determine their effects on hepatic microsomal enzyme activity. Enzyme systems studied were O-demethylase, O-dearylase, N-demethylase, azoreductase, and nitro-reductase. Parathion reduced the activities of all 5 systems to about 70% of control; aldrin and chlordane increased all activities 200-600% except that of azo-reductase, and DDT and phenobarbital stimulated O-demethylase and O-dearylase. The stimulation of enzymes systems induced by aldrin, chlordane, DDT, methoxychlor, dimenhydrinate, diphenylhydantoin, and paraldehyde were reduced 50% by parathion, except for the following enzyme-inducer pairs whose activities were augmented 50-100% by parathion: N-demethylase (aldrin); azo-reductase (chlordane); O-demethylase (methoxychlor); azo-reductase and O-demethylase (dimenhydrinate); nitro-reductase (phenobarbital): and azo-reductase and nitro-reductase (trimethadione).

7125 EFFECT OF PYRAZOLE ON HEPATIC FUNCTION AND STRUCTURE. *(E.)* Lieber, C. S. (Mt. Sinai Sch. Med., New York, N. Y.), E. Rubin, L. M. DeCarli, P. Misra and H. Gang. *Lab Invest* 22(6):615-621, 1970.

The effects of pyrazole (0.2 mg/ml) on hepatic function and structure of rats were investigated by morphologic studies and microsomal enzyme assay. *In vitro* pyrazole (2 and 4 mM) inhibited the microsomal ethanol-oxidizing system by 30% and microsomal aniline, pentobarbital, and benzpyrene hydroxylases. The acute administration of 1 dose of pyrazole increased serum bilirubin, decreased serum glucose and urea, and reduced the activity of the microsomal ethanol-oxidizing system (% of control: 121, 88, 74 and 86, resp.). Catalase activity decreased, pentobarbital hydroxylase activity remained unchanged, and aniline and benzpyrene hydroxylase activities increased (% of control: 14, 108, 322, 160, resp.). Ultrastructural changes following pyrazole included dilated bile canaliculi, stunted microvilli, accumulation of osmiophilic material in the canaliculus lumen, enlarged mitochondria and decreased number of parallel arrays of rough endoplasmic reticulum. Chronic pyrazole feeding retarded growth and resulted in a striking increase of liver weight from 2.8 to 4.6 gm/100 gm body weight due to increased total liver protein but not fat or DNA. Microsomal ethanol-oxidizing system, pentobarbital, and benzpyrene hydroxylase activities were all significantly reduced (% of control: 64, 49, 51, resp.). Light and electron microscopy illustrated the presence of centrally located fat droplets, increased and vesicular smooth endoplasmic reticulum, enlarged mitochondria, and normal bile canaliculi with chronic pyrazole treatment. The inhibitory effects of pyrazole, a potent alcohol dehydrogenase inhibitor, are too diffuse for the precise differentiation of the role of alcohol dehydrogenase from that of other enzyme systems involved in ethanol oxidation.

7126 HEPATIC MICROSOMAL ETHANOL OXIDIZING SYSTEM (MEOS): DIFFERENTIATION FROM ALCOHOL DEHYDROGENASE AND NADPH OXIDASE. *(E.)* Lieber, C. S. (VA Hosp., Bronx, N. Y.), E. Rubin and L. M. DeCarli. *Biochem Biophys Res Commun* 40(4):858-865, 1970.

The effects of pyrazole (1, 2, 4 mM) and dimethylsulfoxide (10, 50, 100 mM) on the activity of rat hepatic alcohol dehydrogenase, and the action of pyrazole, dimethylsulfoxide or sodium cholate (14 mM) on the activities of the microsomal ethanol oxidizing system, NADPH oxidase, aniline hydroxylase, and aminopyrine demethylase were studied. Pyrazole (2 and 4 mM) abolished alcohol dehydrogenase activity completely, but reduced microsomal ethanol oxidizing system activity by only 11 and 22%, resp. Following dimethylsulfoxide (10, 50, 100 mM) no decrease in the microsomal ethanol oxidizing system activity was found, but the alcohol dehydrogenase activity of the cytosol was 80% inhibited by 100 mM dimethylsulfoxide. Cholate (14 mM) reduced the activities of NADPH oxidase, the microsomal ethanol oxidizing system, and aminopyrine demethylase by approximately 80% and almost abolished aniline hydroxylase activity. Cholate inactivated cytochrome P-450, as shown by the quantitative conversion to cytochrome P-420 and by the interference with the reduction of cytochrome P-450. Cholate inhibition of both NADPH oxidase and the microsomal ethanol oxidizing system appears to be nonspecific.

7127 INDUCTION AND INHIBITION OF HEPATIC MICROSOMAL AND MITOCHONDRIAL ENZYMES BY ETHANOL. *(E.)* Rubin, E. (Mt. Sinai Sch. Med., City U. New York, N. Y.), P. Bacchin, H. Gang and C. S. Lieber. *Lab Invest* 22(6):569-580, 1970.

The effects of acute (1.5 or 8 g/kg single dose following 24 hr. fasting) and chronic (36% of total calories over various periods of time) ethanol administration on the activity of rat and human hepatic enzymes (microsomal drug-metabolizing enzymes and mitochondrial δ-aminolevulinic acid synthetase) were investigated by morphologic and chemical analyses. Isocaloric replacement of ethanol for carbohydrate in rats fed adequate, deficient, and low fat diets for 15-90 days led to hepatic steatosis (most severe in the deficient diet group), proliferation of the hepatic smooth endoplasmic reticulum, and increased microsomal protein. The activities of aniline and pentobarbital hydroxylases were increased (from 8.5 and 28.8 to 90.5 and 57.8 U, resp.) in rats on a fat deficient diet receiving chronic ethanol administration. Cytochrome P-450 levels also increased (40-80%) in rats with adequate and alcoholic diets. In 3 nonalcoholic volunteers, ethanol administration with an adequate diet induced a 2- to 3-fold increase in activity of pentobarbital hydroxylase, but ethanol competitively inhibited the *in vitro* activities of aniline and pentobarbital hydroxylases (K_i = 3mM, 90 mM, resp.). Acute ethanol administration (8 g/kg) more than tripled the mean hepatic δ-amino levulinic acid synthetase activity; chronic administration produced a 4.4-fold increase in non-fasted rats and no change in 18-hr fasted rats. This increased activity of δ-amino-levulinic acid synthetase, a rate limiting enzyme in porphyrin synthesis, was blocked by treatment with actinomysin or puromycin, indicating that the increased activity may have resulted from new enzyme synthesis. The administration of ethanol apparently produces many effects similar to those produced by drugs such as phenobarbital.

7128 EFFECT OF MORPHINE ADMINISTRATION ON THE HYDROXYLATION OF STEROID HORMONES BY RAT LIVER MICROSOMES. *(E.)* Kato, R. (Natl. Inst. Sci., Tokyo, Japan), A. Takahashi, T. Oshima and E. Hosoya. *J Pharmacol Exp Ther* 174(2):211-220, 1970.

Effect of morphine on hydroxylation of steroid hormones by rat liver microsomes was investigated using chromatographic and spectral methods. Administration of morphine (30-40 mg/kg) decreased cytochrome P-450 content in male rats, but not in female rats (male controls, 0.95 nmole/mg protein vs morphine-treated, 0.76; female controls, 0.72 vs morphine-treated, 0.66). Progesterone and testosterone hydroxylation was markedly decreased in morphine-treated males, but not in females (progesterone, total hydroxylation male controls, 29.2 nmole/mg protein vs morphine-treated 13.7; female controls, 12.1 vs morphine-treated, 10.5; testosterone, total hydroxylation male controls, 49.8 vs morphine-treated 20.3; female controls, 17.3 vs morphine-treated, 18.3). The magnitude of spectral changes induced by progesterone and testosterone was decreased only in morphine-treated male rats, but not in females. Castration of males decreased the spectral changes and hydroxylating activities for progesterone and testosterone (progesterone controls, 32.7 nmole/mg protein vs 16.1 for castrated animals); methyl testosterone administration to castrated rats restored values to those observed in normal rats (30.8 nmole/mg protein). The magnitude of spectral change and hydroxylating activity for progesterone and testosterone in castrated males was not decreased by morphine treatment, but was markedly decreased in testosterone-treated castrated rats. The ratios of hydroxylating activity for progesterone and testosterone to the magnitude of spectral changes were not significantly affected in morphine-treated males and females.

7129 OLIGOMYCIN AND ADP SENSITIVITY OF *IN VITRO* ALKYLATION OF SH-GROUPS IN RAT LIVER MITOCHONDRIA.

(E.) Zimmer, G. (Inst. Vegetative Physiol., U. Frankfurt, Germany). *FEBS Letters* 9(5):274-276, 1970.

The sensitivity of *in vitro* alkylation of SH-groups in rat liver mitochondria to oligomycin and ADP was investigated. Reactivity of the mitochondrial SH groups in the presence of oligomycin was decreased (48 and 30%) when ^{14}C-N-ethylmaleimide (10 μM and 5 μM, resp.) was added to KCN-inhibited, ATP-supported mitochondria. The rate of swelling caused by 10 μM ^{14}C-N-ethylmaleimide was decreased by the addition of oligomycin; at 5 μM, the rate of swelling was greater in the presence than in the absence of oligomycin. In the presence of ADP there was an increase in reactivity of the membrane SH-groups (19 and 33% at 10 μM and 5 μM ^{14}C-N-ethylmaleimide, resp.) together with an inhibition of swelling. This change in reactivity of the mitochondrial membrane sulfhydryl groups in the presence of ATP and Mg^{++} or ADP apparently is an indication of a conformational change in the mitochondrial membrane proteins.

7130 EFFECT OF ALLOPURINOL ON IRON MOBILIZATION.

(E.) Grace, N. D. (Lemuel Shattuck Hosp., Boston, Mass.), M. A. Greenwald and M. S. Greenberg. *Gastroenterology* 59(1):103-108, 1970.

Xanthine oxidase activity (determined by a modified spectrophotometric method of Kalckar), nonheme hepatic iron stores (determined colorimetrically after reduction by mercaptoacetic acid), and hematocrits and serum uric acids were determined in rats on normal, low iron, and high iron followed by low iron diets with and without allopurinol (0.05% in the water supply). The low iron diet had no effect on serum uric acid or on xanthine oxidase but caused a greater fall in hematocrits (down 18.8 compared to 1.7) decreased serum iron (95.2 to 39.7 μg/100 ml), and decreased total nonheme hepatic iron stores (5.12 to 1.72 mg/liver). Allopurinol did not significantly alter the hematocrits, serum iron, or nonheme iron stores of animals on normal or low iron diets, but serum uric acid dropped from 1.58 to 0.08 mg/100 ml with normal diets and from 1.64 to 0.07 mg/100 ml with low iron diets, and xanthine oxidase dropped from 11.7 to 2.0 with normal and from 13.1 to 3.5 Δ OD/min/g liver with low iron diets. In the rats that were iron-loaded before being placed on the low iron diet the only significant difference between the allopurinol group and controls was in the serum uric acid levels (0.77 for controls and 0.06 mg/100 ml for the allopurinol group). The nonheme hepatic iron store content of these animals (6.08 g for controls and 6.27 g for allopurinol) were consistently lower than the levels in iron-loaded animals before being placed on a low iron diet (7.22 g) suggesting that rats on a low iron diet mobilize iron from their livers although allopurinol has no effect on the rate of mobilization.

7131 POSITIVE INCREASE OF REDOX POTENTIAL OF THE EXTRAMITOCHONDRIAL NADP(H) SYSTEM BY MIXED FUNCTION OXIDATIONS IN HEMOGLOBIN-FREE PERFUSED RAT LIVER.

(E.) Sies, H. (Inst. Physiol. Chem. Phys. Biochem., U. Munich, Germany) and M. Kandel. *FEBS Letters* 9(4):205-208, 1970.

Changes in indicator metabolite couples and in tissue levels of the NADPH/NADP$^+$ and NADH/NAD$^+$ systems during mixed function oxidations were studied during perfusion of the liver with bicarbonate-buffered salt solution in rats with sodium phenobarbital-induced proliferation of hepatic microsomal mixed function oxidase activity. As indicated by the malic enzyme system, a potential change to the positive occurred in the extra-mitochondrial free NADPH/NADP$^+$ system, and as indicated by the lactate dehydrogenase system, no potential change occurred in the cytosolic free NADH/NAD$^+$ system. Coordination of these systems via the common reactant, pyruvate, was observed. The potential of the cytochrome P-450 system, tentatively calculated from degrees of reduction measured by absorbance photometry of perfused liver, shifted substantially to the negative.

7132 STUDIES ON THE METABOLISM OF STEROIDS IN THE FETUS: BIOSYNTHESIS OF 3-HYDROXY-Δ^4-C_{19} STEROIDS IN THE HUMAN FETAL LIVER.

(E.) Lisboa, B. P. (Karolinska Inst., Stockholm, Sweden) and J. A. Gustafsson. *Europ J Biochem* 14(3):556-559, 1970.

The biosynthesis of 3-hydroxy-Δ^4-C_{19} steroids in the human fetal liver was investigated by thin-layer and gas chromatography. After incubation of testosterone (5 mg) with the 105,000 x g supernatant fraction, 2 androstenediols were isolated (compounds I and II). After incubation of testosterone with the 105,000 x g microsome fraction, compound I and 6β-hydroxytestosterone were found in the zone 6.5-7.5 cm from the starting line (mobility of testosterone 7.9 cm). When incubated with liver slices, testosterone was metabolized to 6β-hydroxytestosterone and compound I (mobility 8.0-10.0 cm), 4 androstene-3,17-dione and 2 mono-oxomonohydroxy androstene derivatives (compounds III and IV; mobility 6-8 cm). The silyl ethers of compounds I and II gave mass spectra identical with those of 4-androstene-3α(and β),17β-diol silyl ethers, hence compounds I and II were identified as 4-androstene-3α (and β),17β-diol, resp. Gas chromatography allowed the identification of compounds III and IV as 3α-and 3β-hydroxy-4-androsten-17-one, resp.

7133 BIOCHEMICAL SITE OF REGULATION OF BILE ACID BIOSYNTHESIS IN THE RAT. *(E.)* Shefer, S. (Publ. Hlth. Res. Inst., New York, N. Y.), S. Hauser, I. Bekersky and E. H. Mosbach. *J Lipid Res* 11(5):404-411, 1970.

The site of regulation of bile acid biosynthesis was investigated in rats with bile fistulas. The intraduodenal infusion of taurocholate (11-14 mg/100 g/hr) inhibited the incorporation of acetate-1-^{14}C,mevalonolactone-2-^{14}C, and cholesterol-4-^{14}C into bile acids by approximately 80, 87, and 93%, resp. When 7-α-hydroxycholesterol-4-^{14}C was used as the labeled precursor (7 μg/hr), following excretion of the pool (taurocholate pool 16.1 mg/100 g; total bile salt pool 17.4 mg/100 g), endogenous bile salt production was maintained at an inhibited level for 60 hr by intraduodenal infusion of sodium taurocholate (14mg/100 g/hr). However, the incorporation of 7-α-hydroxycholesterol-4-^{14}C into bile salt was inhibited only 11% during the infusion. Apparently the regulation of bile acid biosynthesis is exerted via cholesterol 7α-hydroxylase only when hepatic cholesterol synthesis is adequate.

7134 PLASMA DISAPPEARANCE AND BILIARY EXCRETION OF SULFOBROMOPHTHALEIN AND PHENOL-3,6-DIBROMPHTHALEIN DISULFONATE AFTER MICROSOMAL ENZYME INDUCTION. *(E.)* Klaasen, C. D. (Kansas Med. Ctr., Kansas City). *Biochem Pharmacol* 19(4):1241-1249, 1970.

The ability of various microsomal drug metabolizing enzyme inducers to enhance the plasma disappearance and biliary excretion of BSP and phenol-3,6-dibromphthalein disulfonate was compared to the ability of these agents to increase biliary flow. Phenobarbital (75 mg/kg) treatment produced the greatest increase in biliary flow (control, 68 μl/min/kg; treatment, 99 μl/min/kg) and also had the greatest effect in enhancing the plasma disappearance and excretion of BSP and phenol-3,6-dibromphthalein disulfonate (control,1.25; treatment, 1.80 mg/min/kg for BSP) into the bile. With chlordane (50 mg/kg), phenylbutazone (125 mg/kg), nikethamide (150 mg/kg) and chlorcyclizine (25 mg/kg) treatments, no statistically significant changes in biliary flow were produced prior to dye administration. These agents produced a significant decrease in the plasma concentration of BSP or phenol-3,6-dibromphthalein disulfonate only at the 30 min sample and elicited a slight increase in the excretion of these 2 dyes into the bile. No direct correlation between the ability of these agents to induce rates of drug metabolism and the ability to enhance the disappearance of these dyes seemed to exist; the ability of these agents to increase biliary flow in rats appears to be related to their ability to increase the plasma disappearance and biliary excretion of BSP and phenol-3,6-dibromphthalein disulfonate.

7135 RESPONSE OF HEPATIC GLUCOKINASE AND GLUCOSE-6-PHOSPHATASE ACTIVITIES IN JUVENILE AND ADULT HYPERTHYROID MICE. *(E.)* Winnick, S. (Dept. Zool., California St. Coll., Los Angeles). *Endocrinology* 87(1):124-128, 1970.

The effects of triiodothyronine (0.03, 0.30, 3.0 μg/day, i.p.) on hepatic glucokinase and glucose-6-phosphatase activities were studied in juvenile and adult male mice. In hyperthyroid mice (lower triiodothyronine dose) glucokinase activity (control 0.55; treatment 1.4 U/min) increased and glucose-6-phosphatase activity (control 10; treatment 5.9 U/min) decreased when compared to controls. Hyperthyroid mice had greater hepatic glucose phosphorylating activity than euthyroid mice, indicating a probable greater capacity for glucose utilization than production (related to dephosphorylating activity). The hepatic enzyme responses to triiodothyronine in juveniles were greater than in adults. Thyroid hormone action may be similar to actions of glucocorticoids and growth hormone in gluconeogenic pathways up to the level of glucose-6-phosphate and, in addition, thyroid hormone may have a calorigenic action based on its capacity to increase glucose oxidation.

7136 ASPARAGINASE ACTION: INHIBITION OF PROTEIN SYNTHESIS IN RAT LIVER MITOCHONDRIA AND MICROSOMES AND BRAIN MITOCHONDRIA AND INHIBITION OF GLYCOPROTEIN SYNTHESIS IN LIVER AND BRAIN MITOCHONDRIA BY ASPARAGINASE. *(E.)* Bosmann, H. B. (Sch. Med. Dent., U. Rochester, N. Y.). *Life Sci* 9(15):851-859, 1970.

Rat liver mitochondria and microsomes and brain mitochondria were used to study the effect of asparaginase on protein and glycoprotein synthesis. RNase at 50 mg/ml had no effect on the mitochondrial macromolecular synthesis but inhibited the microsomal protein synthesis to less than 10%, whereas the addition of asparaginase inhibited protein and glycoprotein synthesis in each of the systems studied. The inhibition was most marked for the protein synthesis in liver mitochondria and microsomes and glycoprotein synthesis in the liver mitochondria. The highest concentration of asparaginase (33 mg/ml) was a concentration approximately equivalent to a 50% inhibition for each of the macromolecular synthesizing systems, and at 10^{-3} mg/ml asparaginase had virtually no effect on any of the macromolecular synthesizing systems studied.

7137 FURTHER STUDIES ON THE EFFECTS OF VARIOUS *IN VIVO* AND *IN VITRO* FACTORS ON THE PRIMING AND TEMPLATE ACTIVITIES OF DNA ISOLATES IN THE DNA AND RNA POLYMERASE SYSTEMS. *(E.)* Chmielewicz, Z. F. (St. U. New York, Buffalo Sch. Pharm. Med.), J. L. Ambrus and T. J. Bardos. *Cancer Res* 30(4):952-959, 1970.

The relation of previously reported increased priming activity of DNA isolated from neoplastic tissues to the rate of mitosis was investigated in nonmalignant regenerating tissues. No significant differences in priming activity was observed between the DNA isolates derived from the livers of rats sacrificed 24, 30, 48, and 72 hr following partial hepatectomy, as compared to the nonregenerating rat liver DNA controls (sham operation) as well as to the "standard" (calf thymus) DNA. The same DNA isolates were tested for template activity in the *Micrococcus lysodeikticus* RNA polymerase system, and no differences were found as compared to the DNA from normal rat liver. Calf thymus DNA which had been treated with pancreatic DNase (0.8-8.0 U/mg DNA) and reisolated by the original procedure exhibited the same priming activity in the DNA polymerase system as the untreated DNA standard. The priming activity of isolated DNA appears not to be related to the mitotic rate of the tissue of origin or to the DNase present in that tissue.

7138 RELATION OF DIETARY CHOLINE AND METHIONINE TO PHOSPHOLIPID SYNTHESIS IN THE RAT. *(E.)* Haggard, J. H. (Agric. Exp. Station, Auburn U., Ala.) and P. F. Parks. *J Nutr* 100(8):965-972, 1970.

The incorporation of choline-1,2-^{14}C, choline diphosphate-choline-1,2-^{14}C, and S-adenosyl-L-methionine-methyl-^{14}C into phospholipids of hepatic tissue from male weanling rats fed a basal diet deficient in choline and limited in methionine was compared to the incorporation in rats fed the basal diet plus 0.3% choline and/or 1% methionine. In 3 separate experiments the incorporation of choline-1,2-^{14}C (dpm/mg phosphorus) was significantly decreased when choline was added to the basal diet (basal diet incorporation 960, 1274, and 931; basal diet plus choline 401, 203, and 172; basal diet plus choline and methionine 88, 185, and 187), but methionine apparently did not affect incorporation (basal diet plus methionine 1452, 1325, and 990). *In vitro* studies indicated that incorporation of choline into phospholipids was not affected by the addition of a 100,000 x g cellular supernatant obtained from rats fed the choline supplemented diet, but incorporation of methyl groups from S-adenosyl-L-methionine-^{14}C dropped (9952 to 8991 dpm/tube). Combining supernatants and microsomal fractions from choline deficient and choline supplemented animals indicated that the supernatant of choline supplemented animals inhibits the methyl incorporation, and dialysis of this supernatant before addition to the system removed the effective component.

7139 LIPID METABOLISM IN THE PERFUSED CHICKEN LIVER: LIPOGENESIS FROM GLUCOSE, ACETATE AND PALMITATE. *(E.)* Bickerstaffe, R. (Unilever Res. Lab., Sharnbrook, England), C. E. West and E. F. Annison. *Biochem J* 118(3):427-431, 1970.

Hepatic lipogenesis from glucose, acetate and free fatty acids was investigated in the perfused chicken liver. Livers from fed and starved chickens showed a considerable capacity to incorporate albumin-bound 9,10-$^3H_2$-palmitate (170 µC) into triglycerides (49.5 and 25.3%, resp. in 1 animal), but appreciable lipogenesis from U-^{14}C-glucose (60 µC) was observed only with livers from fed birds (fed, 13.8%; starved, 0.3% for 1 animal). Considerable amounts of the triglyceride synthesized in the liver from both ^{14}C-glucose and $^3H_2$-palmitate were released into the perfusate. With livers from fed birds, the rate of glucose uptake was dependent on the concentration in the perfusate, but a similar correlation was seen in the livers from starved birds. Two hr after the introduction of L(+)-U-^{14}C-lactate (50 µC) less than 10% of the added radioactivity was present as lactate, and about 20% of the radioactivity was accounted for as glucose. Rapid glycogenolysis occurred during every perfusion with glycogen contents at the end of the perfusion rarely exceeding 0.2% (w/w). The livers from fed chickens showed a greater capacity for triglyceride synthesis (14.6 and 9.3%) from 1-^{14}C-acetate (50 µC) than did the starved livers (1.6 and 1.5%). Acetate concentrations in the perfusate remained relatively constant at 0.3-0.5 mmole/l in all experiments,suggesting continuous production by the liver.

7140 THE LIMITING RATE OF CHELATION OF LIVER ALCOHOL DEHYDROGENASE. *(E.)* Gilleland, M. J. (Henry Ford Hosp., Detroit, Mich.) and J. D. Shore. *Biochem Biophys Res Commun* 40(1):230-235, 1970.

The interaction of horse liver alcoholic dehydrogenase with chelating agents was investigated by stopped-flow techniques in an attempt to define the role of zinc in the binding of coenzymes and substrates. Stopped-flow measurements were made of the binding rate of bipyridyl to alcohol dehydrogenase at 308 nm. A plot of reciprocal pseudo first-order rate constants vs reciprocal bipyridyl concentrations resulted in a rate constant of 228 sec^{-1} at extrapolated infinite bipyridyl concentrations. A similar plot was obtained from stopped-flow measurements of the binding rate of pyrazole to alcohol dehydrogenase-NAD$^+$ complex which resulted in a rate constant of 238 sec^{-1}. Since most chelation reactions are slower than would be expected for diffusion-limited rates, chelation probably consists of 2 steps, the first being the formation of an outersphere complex in a rapid equilibrium, and the second and rate-determining step being the loss of a solvent molecule from the first hydration sphere of the metal ion. A rate-limiting step in the chelation of the zinc of alcohol dehydrogenase involving the displacement of a water molecule from the first hydration sphere of zinc with a rate constant similar to that of pyrazole binding indicated that the liver alcohol dehydrogenase-NAD$^+$-pyrazole complex involves zinc.

7141 THE EFFECTS OF THIOLS ON CHOLESTEROL SYNTHESIS BY RAT LIVER *IN VITRO.*

(E.) Hornby, G. M. (Edinburgh U. Med. Sch., Scotland), F. D. Onajobi and G. S. Boyd. *Biochem Biophys Res Commun* 40(3):524-529, 1970.

Thiols (7-15 mM) such as β-mercaptoethylamine, β-mercaptoethanol, ethanethiol and dithiothreitol inhibited cholesterol synthesis from mevalonic acid in rat liver with accumulation of a mixture of lanosta-8,24-dien-3β-ol (lanosterol) and lanost-8-en-3β-ol (Δ^8-lanostenol). Glutathione and cysteine had similar effects in inhibiting cholesterol synthesis at concentrations of 15-20 mM, but lanosterol and Δ^8-lanostenol did not accumulate. Since ethylamine (0.6-12 mM) had no effect, the thiol group of β-mercaptoethylamine appears to be essential for inhibition. That β-mercaptoethylamine and other thiols have an inhibitory effect on demethylation suggests that the initial step in lanosterol demethylation may be predominantly radical in nature.

7142 THE EFFECT OF GLUCOSE AND OF A TREATMENT BY GLUCOCORTICOIDS ON THE INACTIVATION *IN VITRO* OF LIVER GLYCOGEN PHOSPHORYLASE.

(E.) Stalmans, W. (Lab. Chem. Physiol., U. Louvain, Belgium), H. DeWulf, B. Lederer and H. G. Hers. *Europ J Biochem* 15(1):9-12, 1970.

The effect of glucose and glucocorticoids on the inactivation *in vitro* of mouse liver glycogen phosphorylase was investigated. The addition of glucose (0.5%) to a liver Sephadex filtrate caused a 5-10 fold increase in the rate of inactivation of phosphorylase; this inactivation was reversed by the addition of ATP, magnesium, and cyclic AMP, and completely inhibited by 0.1 M NaF, showing that the inactivation was due to the action of phosphorylase phosphatase. The effect of glucose on the inactivation of phosphorylase (Km = 7.2 mM) proceeded without a latency period and appeared to be a stimulation of the phosphatase rather than a conversion of an inactive into an active form. Following prednisolone (3-5 hr before sacrifice), the inactivation of liver phosphorylase, measured in a Sephadex filtrate, was 3-10 times faster than in a control preparation. Apparently, the concentration of blood glucose, by controlling the activity of phosphorylase phosphatase, plays an important role in the regulation of glycogen degradation.

7143 RENAL AND HEPATIC INACTIVATION OF ANGIOTENSIN IN RATS: INFLUENCE OF SODIUM BALANCE AND RENAL ARTERY COMPRESSION.

(E.) Leary, W. P. P. (Radcliffe Infirm., Oxford, England) and J. G. G. Ledingham. *Clin Sci* 38(5):573-582, 1970.

The rates of inactivation of asparagine^{1}valine^5 angiotensin II by isolated perfused rat liver and kidney were investigated in a variety of experimental conditions. After 6 min of perfusion the livers of animals given 1 mEq of sodium per day inactivated 376 ng (range = 230-558 ng) angiotensin II; the results were the same in rats given 1% NaCl solution to drink. Livers of sodium-depleted animals inactivated 322 ng of the peptide, not significantly different from their sodium replete controls (mean 298 ng). In contrast to findings in the liver, the amount of peptide destroyed at 6 min was reduced by almost 50% in those animals which had drunk 1% saline and even more in those given 2% saline. No significant difference between the rates of inactivation of angiotensin by kidneys with clipped renal arteries and intact renal arteries was seen. The kidneys contralateral to those with the arterial clip, on the other hand, destroyed considerably less peptide. The isolated rat liver inactivated angiotensin II amide at rates unaltered by renal artery constriction.

7144 THE EFFECT OF RAISING THE NAD$^+$ CONTENT ON THE PATHWAYS OF CARBOHYDRATE METABOLISM AND LIPOGENESIS IN RAT LIVER.

(E.) Lagunas, R. (Middlesex Hosp. Med. Sch., London, England), P. McLean and A. L. Greenbaum. *Europ J Biochem* 15(1):179-190, 1970.

The effect of raising the NAD$^+$ content (50 mg/100 g) on the pathways of carbohydrate metabolism and lipogenesis in rat liver was investigated. Increased activities of phosphofructokinase (mass action ratio 0.069 to 0.170 and 0.210 at 4 and 6 hr after nicotinamide administration), glyceraldehyde-3-phosphate dehydrogenase (28.7 to 32.3 and 26.0 at 4 and 6 hr, resp.) and pyruvate kinase (8.03 to 11.42 and 10.45 at 4 and 6 hr, resp.), as shown by the application of the cross-over theorem, indicated that these enzymes may be sites of metabolic control. The increased hepatic content of NAD$^+$ (control 0.746; treatment at 4 hr 1.567, at 6 hr 2.147 μmole/g wet wt) was accompanied by an increase of free oxidized to reduced nicotinamide nucleotides in the cytoplasm and mitochondria (control 5.33; treatment at 4 hr 8.58, at 6 hr 10.63 μmole/g wet wt), as calculated from the values of the intermediates, at both time intervals. The liver content of glucose-6-phosphate, citrate and malate were decreased (control 0.112, 0.404, 0.268, resp.; treatment 6 hr 0.066, 0.163, 0.170 μmole/g wet wt, resp.) by the treatment; the adenine nucleotides were unchanged, while the free CoA increased (0.161 to 0.299 μmole/g wet wt). Fatty acids were considerably increased 4 hr after nicotinamide (control 6.140; treatment 23.19 μmole/g wet wt) but were below control levels at 6 hr (3.61 μmole/g wet wt). The incorporation of 1-^{14}C and U-^{14}C-glucose into $^{14}CO_2$ was not changed, but the incorporation of 6-^{14}C-glucose, 2-^{14}C-pyruvate and 2-^{14}C-acetate into $^{14}CO_2$ were all increased. The incorporation of all labeled substrates into ^{14}C labeled lipids was inhibited at both 4 and 6 hr after nicotinamide administration. The increased activity of the tricarboxylic acid cycle was apparently due to the more oxidized state of the mitochondrial nicotinamide nucleotides.

7145 REGULATION OF NUCLEAR DNA SYNTHESIS IN RAT LIVER.

(E.) Hyodo, M. (Japanese Found. Cancer Res., Tokyo) and T. Ono. *Exp Cell Res* 60(3):401-404, 1970.

DNA synthesis in isolated nuclei of livers of partially hepatectomized rats were examined to clarify the mechanism of regulation of nuclear DNA synthesis.

Nuclei prepared in a hypertonic sucrose solution from normal liver, regenerating liver or tumor 5123D incorporated ^{3}H-thymidine triphophate into an acid-insoluble fraction linearly as long as 60 min in the presence of ATP, and all of the incorporated ^{3}H-thymidine triphosphate became rapidly acid-soluble after addition of 20 μg DNase per tube at 37°C. Nuclei from normal liver prepared in hypertonic solution showed as high a rate of incorporation as those of regenerating liver and tumor. Homogenates or crude nuclei of regenerating liver did not incorporate ^{3}H-thymidine triphosphate, but when the crude nuclei of normal liver was further homogenized and sedimented in hypertonic sucrose solution, the nuclei showed a high rate of incorporation. When the thymidine triphosphate level of crude nuclei and the mixture which contained nuclei from normal liver prepared by hypertonic sucrose and the cytoplasmic fraction of normal liver were assayed, degradation of ^{3}H-thymidine triphosphate had occurred and was at the same level as in the homogenate. At 20 min the same amount of ^{3}H-thymidine triphosphate was incorporated into the reconstituted mixture of nuclei and cytoplasm as into nuclei without cytoplasm and then incorporation ceased. This profile was similar to the case of crude nuclei and homogenate of regenerating liver. Nuclear DNA synthesis *in vitro* in normal liver was activated by hypertonic sucrose solution, indicating that nuclear DNA synthesis in normal rat liver was repressed or in a masked state, which was not due to degradation of substrates during incubation.

7146 THE EFFECT OF GLUCOSE AND OF A TREATMENT BY GLUCOCORTICOIDS ON THE ACTIVATION *IN VITRO* OF LIVER GLYCOGEN SYNTHETASE. *(E.)*

De Wulf, H. (Lab. Chem. Physiol., U. Louvain, Belgium), W. Stalmans and H. G. Hers. *Europ J Biochem* 15(1):1-8, 1970.

The effect of glucose and glucocorticoids on the activation *in vitro* of mouse liver glycogen synthetase was investigated. Following the removal of glucose, AMP and other small molecules from mouse liver extract by filtration through Sephadex G-25, the activation *in vitro* of glycogen synthetase was much more rapidly attained in the presence of glucose or by pretreatment of the animals with prednisolone 3 hr before sacrifice due to a shortening of the lag period that preceded the activation of the synthetase. Like glucose, caffeine and nicotinamide shortened the lag period and were without action when this period was over. In the presence of 3-5 mM AMP, the activation of the synthetase was initiated without delay and was rapidly complete; magnesium acetate caused a further acceleration of the reaction. Glycogen, known to inhibit the conversion of synthetase *b* to synthetase *a*, was shown to prolong the lag period, opposing the effect of glucose by increasing the apparent Km of the activating system for the hexose from 7 mM to 11.4 mM. In the absence of sulfate and phosphate ions, the activation of glycogen synthetase leveled off at values that were only 25-50% of the activity obtained in the presence of these ions. Apparently glycogen synthetase phosphatase is initially present in the liver filtrate as a *b* enzyme, active only in the presence of AMP and magnesium; this *b* form may be converted into its active *a* homolog through the action of a synthetase phosphatase activating enzyme, which is more active after treatment with glucocorticoids and is stimulated by glucose, caffeine, and nicotinamide and inhibited by glycogen, AMP and fluoride.

7147 THE SYNTHESIS OF RIBOSOMAL-TYPE RNA BY ISOLATED RAT LIVER MITOCHONDRIA. *(E.)*

Fukamachi. S. (Dept. Biochem., McMaster U., Hamilton, Ontario, Canada), B. Bartoov, R. S. Mitra and K. B. Freeman. *Biochem Biophys Res Commun* 40(4):852-857, 1970.

The synthesis of ribosomal-type RNA by isolated rat liver mitochondria was marked by linear incorporation of ^{3}H-uridine triphosphate into RNA for 1 hr. This reaction was sensitive to actinomycin D, acriflavin, and ethidium bromide, partially sensitive to ribonuclease and insensitive to deoxyribonuclease (% of control, 11.2, 15.4, 38.2, 82.6, and 98.9, resp.). The lack of sensitivity of mitochondrial RNA synthesis to ribonuclease and deoxyribonuclease clearly differentiates this from RNA synthesis by nuclei (% of control 11.7, 25.2, resp.); the sensitivity to antibiotics apparently indicates a DNA-dependent synthesis of RNA by mitochondria. The extracted RNA showed about 90% of the counts at about 4S and 10% in the 9-30 S region; the higher molecular RNA was characterized by 2 major peaks with mobilities of 20.5 S and 11.5 S (referred to as 21 S and 12 S resp.). A smaller peak at 28 S and a considerable amount of heterodisperse RNA was also observed. The synthesis of 21 S, 12 S and heterodisperse RNA was depressed 70% by ethidium bromide (0.33 μg/ml) in the incubation medium, similar to that found for the synthesis of total RNA.

7148 CONVERSION OF GLUCOSE-U^{14}C TO ^{14}CO$_2$, ^{14}C-GLYCOGEN, AND ^{14}C-FATTY ACIDS IN PARTIALLY HEPATECTOMIZED RAT. *(E.)*

Neville, E. D. (Ames Res. Ctr., NASA, Moffett Field, Calif.), K. S. Talarico and D. D. Feller. *Proc Soc Exp Biol Med* 134(2):372-379, 1970.

The conversion of glucose-U-^{14}C to ^{14}CO$_2$, ^{14}C-glycogen, and ^{14}C-fatty acids in the partially hepatectomized (67%) rat was investigated by radiorespirometry and chemical assay. Upon partial hepatectomy plasma free fatty acids increased (1,425 μEq/l; control 1,333 μEq/l) while glucose and cholesterol decreased (80-89 mg/100 ml, 36 mg/100 ml; control 129 mg/100 ml, 54 mg/100 ml, resp.). The partially hepatectomized rats showed a significantly decreased production of ^{14}CO$_2$ during the first hour of the radiorespirometry period; however, no significant difference between the partially hepatectomized rats and sham-operated controls was noted at the end of the 3 hr radiorespirometry period. The specific activity of muscle glycogen was decreased 1-2 days in the partially hepatectomized rats while liver glycogen showed an increase indicating that the turnover of muscle glycogen was decreased while the turnover of liver glycogen was increased. The recovery of liver ^{14}C-fatty acids (1024 dpm/g liver, control 2820 dpm/g liver) and nonsaponified ^{14}C-lipid was decreased, indicating that a decreased conversion of glucose to acetyl CoA occurs in the partially hepatectomized rat.

7149 THE EFFECT OF CELL-SAP FRACTIONS ON INCORPORATION OF AMINO ACIDS INTO PROTEIN IN RAT LIVER CELL-FREE SYSTEMS.

(E.) Liew, C. C. (Sch. Biol. Sci., U. Sussex, Falmer, England) and A. Korner. *Canad J Biochem* 48(7):735-739, 1970.

The efficiency of protein synthesis in polysome cell-free systems of rat liver containing cell sap, pH 5 enzyme preparation, partially purified transfer factors I and II, or a mixture of the factors was monitored by ^{14}C-phenylalanine incorporation. Incorporation of ^{14}C-phenylalanine into protein was greater in the ribosome-cell sap system than in the ribosome and pH 5 enzyme preparation, the ribosome and transfer factors I and II system, or in the system containing both pH 5 enzyme preparation and the transfer factors. A time course of ^{14}C-phenylalanine incorporation into protein carried out in the presence or absence of 19 unlabeled amino acids corroborated these findings. The optimal concentration of amino acids for protein synthesis in the cell-free system was between 0.5 mM and 1.0 mM but even in the absence of added amino acids, the cell sap was more efficient than the fractionated system. Incorporation of ^{14}C-phenylalanine into protein increased as the amount of transfer factors I and II added was increased, and also as the amount of added pH 5 enzyme preparation was increased. The greatest protein synthesis occurred when the ribosomes, transfer factors I and II and pH 5.2 enzyme preparation were present in a ratio 1:17.3: 4.3. At this ratio, the incorporation obtained was similar to that obtained with the ribosome-cell sap system. Incubation with cell sap produced changes in ribosomal profiles leading to less polysomes and more monomeric and dimeric ribosomes but no changes were noted on incubation with pH 5 enzyme preparation and transfer factors I and II.

7150 KINETIC AND IMMUNOCHEMICAL EVIDENCE FOR INDUCTION OF HEPATIC ADENOSINE MONOPHOSPHATE DEAMINASE BY 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE OR THIOACETAMIDE.

(E.) Kizer, D. E. (Samuel Roberts Noble Found., Ardmore, Okla.), L. D. Smith and B. A. Howell. *Biochem Pharmacol* 19(4):1263-1276, 1970.

Crude 105,000 g supernatant fractions from rat liver homogenates were used in this study designed to determine whether increases in hepatic AMP deaminase activity after ingestion or injection of the hepatocarcinogens, 3'-methyl-4-dimethylaminoazobenzene or thioacetamide, were associated with increased enzyme or alterations in allosteric modulation. Kinetic and immunochemical studies indicated that increased AMP deaminase activity was associated with increased enzyme. The extent and nature of enzyme activity modulations by alkali metal ions and by certain mono-, di- or triphosphonucleotides were similar in enzyme from livers of both control and hepatocarcinogen-treated animals. When reaction mixtures contained ATP and alkali metal ions, plots of velocity vs substrate concentration were hyperbolic and activity of enzyme from hepatocarcinogen-treated animals always exceeded that of controls. Reaction of enzyme from control or hepatocarcinogen-treated animals with antibody to partially purified AMP deaminase from rat liver resulted in complete loss of enzyme activity, irrespective of source, but titration curves indicated higher antigen levels in supernatants from hepatocarcinogen-treated rats. Incubation of the supernatants at 55° resulted in losses of AMP deaminase activity with the losses among supernatants from carcinogen-treated animals occurring at rates nearly 3 times greater than losses from control supernatants, indicating that concomitant with induction of AMP deaminase by hepatocarcinogens, appreciable alterations in the physical properties of the enzyme had occurred.

7151 INCREASED SYNTHESIS AND INHIBITED BREAKDOWN DURING THE INCREASE OF MICROSOMAL CYTOCHROMES P-450 AND b-5 AFTER PHENOBARBITAL.

(Ger.) Greim, H. (Inst. Toxicol., U. Tubingen, Germany). *Naunyn Schmiedeberg Arch Pharmakol* 266(3):261-275, 1970.

The mechanism of enzyme protein multiplication in rat liver microsomes through phenobarbital treatment (80 mg/kg i.p. or 1% in drinking water) was investigated in normally fed and starved rats. ^{14}C-Aminolevulinic acid (5 μC/0.2 ml buffered saline i.v.) was used to label microsomal cytochromes; cytochrome P-450 increased up to 200% through induced synthesis, and up to 400% in starved rats both through induced protein synthesis and inhibition of breakdown. The ratio between microsomal cytochrome P-450 and liver homogenate cytochrome P-450 allowed calculation of the actual microsomal protein content of the liver homogenate which constituted 31% of the liver homogenate protein.

7152 CYCLOHEXIMIDE-RESISTANT AMINO ACID INCORPORATION INTO RAT LIVER MITOCHONDRIAL PROTEINS *IN VIVO*.

(E.) Beattie, D. S. (Mt. Sinai Sch. Med., City U. New York, N. Y.). *FEBS Letters* 9(4):232-234, 1970.

Mitochondrial preparations from rats injected with 40-50 μC of 4,5-^{3}H-L-leucine i.v. 2 min prior to sacrifice showed a 2.4-fold higher incorporation of radioactivity into the acetic acid-insoluble membranous protein than into the whole mitochondria; mitochondrial fractions from animals sacrificed 30 min after label injection were uniformly labeled. Cycloheximide (5 mg/100 g - enough to block 98% of microsomal protein synthesis) inhibited intact mitochondrial protein synthesis only 85% and mitochondrial membrane protein synthesis only 70%. Although it appears that about 30% of the mitochondrial membrane fraction was synthesized by a cycloheximide-insensitive system, most of the cytochrome oxidase labeled in the presence of cycloheximide was soluble, indicating that cytochrome oxidase is predominantly synthesized outside the mitochondrion.

7153 THE SYNTHESIS OF BILE ACIDS IN PERFUSED RAT LIVER SUBJECTED TO CHRONIC BILIARY DRAINAGE. *(E.)* Percy-Robb, I. W. (Med. Sch., U. Edinburgh, Scotland) and G. S. Boyd. *Biochem J* 118(3):519-530, 1970.

The effect of chronic biliary drainage on the synthesis of bile acids in perfused rat liver was investigated. Isolated rat liver, perfused with heparinized whole blood under physiological pressure, resulted in the secretion of bile at about the rate observed *in vivo*. The preparation remained metabolically active for 4 hr and was apparently normal in function and microscopic appearance. When the perfusate plasma and liver cholesterol pool were labeled by the introduction of 2-^{14}C-mevalonic acid (5 μC) the specific radioactivity of the perfusate cholesterol increased (28-35 cpm/μg at 4 hr); the biliary acids (cholic and chenodeoxycholic acids) were also labeled and had the same specific radioactivity. Perfused livers removed from rats immediately after, and 40 hr after, the start of total biliary drainage showed increased excretion rates of both cholic acid and chenodeoxycholic acid. The incorporation of 2-^{14}C-mevalonic acid or rat lipoprotein labeled with ^{14}C-cholesterol into bile acids was studied, and no relation was found between the mass of bile acid excreted and the rate of incorporation of ^{14}C perhaps due to the changing specific radioactivity of the cholesterol pool acting as the immediate bile acid precursor.

7154 EFFECT OF CHOLESTERYL ESTERS WITH DIFFERENT SATURATED FATTY ACIDS ON AMINOACYL-tRNA SYNTHESIS IN RAT LIVER. *(E.)* Hradec, J. (Oncol. Inst., Prague, Czechoslovakia) and J. Sommerau. *FEBS Letters* 9(3):161-162, 1970.

The effect of cholesteryl esters with different saturated higher fatty acids on aminoacyl-tRNA synthesis in rat liver was investigated. Esters of cholesterol with normal chain saturated fatty acids or iso-acids had no stimulating effect on charging of rat liver tRNA with L-leucine nor were they able to reactivate extracted pH 5 enzymes. From esters with anteiso-acids, only cholesteryl 13-methylpentadecanoate and 15-methylheptadecanoate, homologs of cholesteryl 14-methylhexadecanoate differing only in one methylene group, were active (net incorporation of ^{14}C-leucine 39.5, 40.3 and 40.2 pmoles, resp.). Furthermore, both these active cholesteryl esters showed the same typical dose-dependent reactivating effect on extracted pH 5 enzymes as demonstrated with cholesteryl 14-methylhexadecanoate (28.6, 29.1 and 29.3 pmole leucine incorporation, resp.). The chemical structure of the fatty acid is apparently of critical importance for the activity of cholesteryl esters in protein synthesis. Presence of a methyl group in the penultimate position in the saturated carbon chain of the fatty acid seems to be required for the activity of these esters.

7155 AN EFFECT OF GLUCOCORTICOID HORMONE ON THE NUCLEAR RIBONUCLEOPROTEIN OF RAT LIVER. *(E.)* Berg, T. (Dept. Zoophysiol. Pharmacol., U. Oslo, Norway), J. Morland and P. O. Seglen. *Hoppe Seyler Z Physiol Chem* 351(7):898-900, 1970.

Quantitative determinations of a specific nuclear ribonucleoprotein fraction were made in liver homogenates obtained from rats before and after *in vivo* treatment with glucocorticoid hormone. The nuclear extract obtained prior to treatment contained a characteristic component with a sedimentation coefficient of approximately 45S (as compared to a 53S ferritin marker, analysed in an analytical ultracentrifuge). The component was labeled *in vivo* in 15 min by a pulse of ^{14}C-orotic acid and had a uniform buoyant density of 1.35 g/cm^3 (CsCl). An i.p. injection of 4 mg of dexamethasone phosphate 4 hr prior to death caused no change in the total amount of RNA in the nuclei or nuclear extract but a significant decrease (13.5 ± 3.5%) in the quantity of 45S material was apparent (17 experiments). The 45S component probably represent ribonucleoprotein particles, and the transfer of these particles to the cytoplasm may be affected by glucocorticoids.

7156 STIMULATION OF NUCLEAR PROTEIN SYNTHESIS IN RAT LIVER AFTER PHENOBARBITAL ADMINISTRATION. *(E.)* Ruddon, R. W. (U. Mich. Med. Dent. Sch., Ann Arbor) and C. H. Rainey. *Biochem Biophys Res Commun* 40(1):152-160, 1970.

Protein synthesis was stimulated in subcellular fractions prepared from livers of rats given phenobarbital (75 mg/kg i.p.) prior to pulse labeling i.p. with leucine-^{3}H (58.2 C/mmole), arginine-^{14}C (237 mC/mmole), or arginine-^{3}H (881 mC/mmole). A 70% increase above control values in the labeling of microsomal protein and of a nuclear protein fraction extracted with 1 M NaCl in rats receiving a 40 min pulse of leucine-^{3}H 2 hr after phenobarbital administration was observed. When the same pulse was given 24 hr after phenobarbital administration, there was a 42% stimulation in the specific activity of microsomal protein but an 82% enhancement in the nuclear protein fraction compared to controls. Separation of the nuclear fraction on DEAE-cellulose columns indicated that there was a 5-fold stimulation in the specific activity of one of the protein peaks from the nuclear protein fraction of the liver of phenobarbital-treated rats, suggesting that phenobarbital administration enhanced the synthesis of various protein fractions in hepatic cells, and that these events may be involved in the enzyme induction produced by this drug.

7157 SELECTIVE REPRESSION OF BENZOATE OR TRYPTOPHAN MEDIATED INDUCTION OF LIVER TYROSINE AMINOTRANSFERASE BY PHENTOLAMINE IN ADRENALECTOMIZED RATS. *(E.)* Kato, K. (Sch. Med. U. Nagoya, Japan). *FEBS Letters* 8(6):316-318, 1970.

Benzoate or tryptophan mediated induction of liver tyrosine aminotransferase in rats was repressed by the i.p. administration of 7 mg phentolamine (or phenoxybenzamine, but not ergotamine or propranolol) at 0-3 hr after the inducer. Phentolamine did not repress the glucagon or hydrocortisone mediated induction of tyrosine aminotransferase and tryptophan pyrrolase, indicating that general protein synthesis was not inhibited by phentolamine. The mechanism

f benzoate or tryptophan mediated induction of
yrosine aminotransferase may include a cyclic AMP
ccumulating process which is sensitive to phentol-
mine, or phentolamine may release some endogenous
epressive substance.

158 RELATIONSHIP BETWEEN LIVER AMINOTRANSFERASE ACTIVITY AND ADRENAL CORTICAL
ORMONE METABOLISM IN TUMOR-BEARING RATS. *(E.)*

uga, S. (Nagoya, Japan), H. Mekata, T. Mizuno
nd Y. Kato. *Cancer Res* 30(4):1137-1141, 1970.

etabolic regulation in the catabolic or cachetic
tage was studied in ascites tumor-bearing rats.
iver L-alanine:2-oxoglutarate aminotransferase
ctivity, liver L-tyrosine:2-oxoglutarate amino-
ransferase activity, and adrenocortical hormone
etabolism were investigated sequentially after
.p. tumor inoculation. The activities of liver
lanine aminotransferase and tyrosine aminotrans-
erase were unchanged until the 14th day after
umor transplantation when a 2-fold and 1.8-fold
ncrease, resp., in these activities above control
alues were observed. Plasma corticosterone levels
ere elevated 70-80% above control levels from the
4th day after transplantation probably due to in-
reases in both adrenal weight and corticosterone
ontent in the tumor-bearing rats, since Δ^4-hydro-
enase activity in the liver remained unchanged
hroughout the period studied. Comparison of tu-
or-bearing rats with rats placed on a 3 day fast,
high protein diet, or a low protein diet showed
hat the metabolic abnormalities observed in tu-
or-bearing rats were different from the state of
utritional shift produced by various dietary
onditions.

159 EFFECT OF SERINE AND TYROSINE ON RAT LIVER ENZYMES AND GLYCOGEN CONTENT. *(E.)*

Liu,
. (Natl. Defense Med. Ctr., Taipei, Formosa), M. F.
in and J. S. Chen. *Chinese J Physiol* 20(3):183-188,
969.

nzyme and glycogen content determinations were made
n livers from rats sacrificed 6, 12 or 24 hr after
eceiving a diet containing serine, tyrosine, or an
quimolar mixture of serine and tyrosine at 0, 6
nd 12 hr, following a 24 hr fast. Hepatic water
nd nitrogen contents were approximately the same in
xperimental and control rats. Liver glycogen of the
ontrol rats (sucrose diet) increased very rapidly
p to the 12th hr (40 mg/g liver) and then declined
o 50% of the peak value. Serine and equimolar
erine-tyrosine mixture feedings increased glycogen
ontent more gradually than sucrose, with peak glycogen
f 40 mg/g liver reached at 24 hr with serine and
f 25 mg/g liver at 24 hr with serine-tyrosine; no
ignificant changes were noted in the tyrosine-fed
ats. Glucose-6-phosphatase declined after 6 hr in
he control and experimental rats except for the
yrosine-fed rats which showed an increase up to 12
r followed by a decline. Activities of SGOT, SGPT,
nd arginase in both tyrosine-fed and tyrosine-serine-
ed rats were higher than those in the sucrose-fed
ats, with tyrosine having a greater effect; activities
f these enzymes were depressed by serine.

7160 LIPID METABOLISM IN THE PERFUSED CHICKEN LIVER: THE UPTAKE AND METABOLISM OF OLEIC ACID, ELAIDIC ACID, *CIS*-VACCENIC ACID, *TRANS*-VACCENIC ACID AND STEARIC ACID. *(E.)*

Bickerstaffe, R. (Unilever Res. Lab., Sharnbrook, England) and E. F. Annison. *Biochem J* 118(3):433-442, 1970.

A study of the uptake and metabolism of ^{14}C- and ^3H-labeled cis-Δ^9-, trans-Δ^9-, cis-Δ^{11}- and trans-Δ^{11}-octadecenoic acids and octadecanoic acid by the perfused chicken liver showed no differences in the rates of uptake of the isomers. Considerable incorporation of radioactivity into triglycerides and phospholipids, and some release of labeled lipid into the perfusate was observed. Although the Δ^9-octadecenoic acids were incorporated to a greater extent than the Δ^{11}-isomers into triglycerides, the reverse was true with incorporation into phospholipids. The cis-fatty acids were more readily incorporated into triglycerides (trans-vaccenic acid/cis-vaccenic acid ratio 1.18) than phospholipids (same ratio 1.67). The intramolecular distribution of fatty acids into triglycerides showed that the trans-fatty acids and stearate occupied mainly the 1- and 3- positions while the cis-fatty acids occupied the 2- position. In the phospholipids, phosphatidylcholine and phosphatidylethanolamine, the trans-fatty acids again behaved like stearic acid and favored the 1- position. No atypical patterns of uptake or metabolism of the trans-fatty acids were observed.

7161 INDUCTION OF HEPATIC MITOCHONDRIAL FERROCHELATASE BY PHENOBARBITAL. *(E.)*

Hasegawa, E. (U. Michigan Med. Sch., Ann Arbor), C. Smith and T. R. Tephly. *Biochem Biophys Res Commun* 40(3):517-523, 1970.

The effect of phenobarbital on the induction of hepatic mitochondrial ferrochelatase in rats was investigated by spectrophotometry. When cupric ion or nickel was used in the reaction mixture, there was a marked inhibition of the formation of the pyridine hemochrome (52 and 67%, resp.) while no effect was observed using the cobalt assay (6 and 0%, resp.). Chronic phenobarbital treatment (60 mg/kg) did not increase hepatic mitochondrial ferrochelatase activity when the cobalt assay was employed, but when the activity was measured by the pyridine hemochrome formation, a 4-fold enhancement of activity was observed at 72 hr. This stimulation of ferrochelatase activity by phenobarbital was inhibited by the simultaneous administration (1 mg/kg and 2 mg/kg) of cycloheximide (control 0.13; phenobarbital 0.28; phenobarbital + cycloheximide 0.16 U/30 min), indicating that the effect of phenobarbital is mediated through an increase in protein synthesis.

7162 EFFECT OF DIPHENYLHYDANTOIN ON THE METABOLISM OF DEXAMETHASONE. *(E.)*

Jubiz, W. (U. Utah Coll. Med., Salt Lake City), A. W. Meikle, R. A. Levinson, S. Mizutani, C. D. West and F. H. Tyler. *New Eng J Med* 283(1):11-14, 1970.

7163 THE EFFECT OF PITUITRIN ON THE BILE-FORMING FUNCTION OF THE LIVER. *(Rus.)* Yaremenko, M. S. (A. A. Bogomolets Inst. Physiol., Kiev, USSR). *Pat Fiziol Eksp Ter* 14(1):76-78, 1970.

7164 ACTION OF ISOLATED PERFUSED RAT LIVER ON HYPERLIPEMIC SERUM. *(Sp.)* Lemberg, A. (Fac. Pharm. Biochem., U. Buenos Aires, Argentina), R. Wikinski, E. M. Izurieta, H. Halperin, A. Freid, D. Krasnokuki and P. Perez De Neuman. *Medicina* 20(2):153-156, 1970.

7165 DAILY VARIATION OF BODY TEMPERATURE, LIVER CATALASE ACTIVITY AND PLASMA IRON CONCENTRATION IN NORMAL AND TUMOR-BEARING RATS. *(E.)* Kampschmidt, R. F. (Samuel Roberts Noble Found., Ardmore, Oklahoma) and H. F. Upchurch. *Proc Soc Exp Biol Med* 134(2):527-529, 1970.

7166 STUDIES ON HEPATIC FERRITIN IN TUMOR-BEARING RATS. *(E.)* Matsuda, M. (Sapporo Med. Coll., Japan). *Sapporo Med J* 35(4):197-214, 1969.

7167 ENZYMATIC BASIS OF CYCLOPHOSPHAMIDE ACTIVATION BY HEPATIC MICROSOMES OF THE RAT. *(E.)* Cohen, J. L. (Tufts U. Sch. Med., Boston, Mass.) and J. Y. Jao. *J Pharmacol Exp Ther* 174(2): 206-210, 1970.

7168 DYNAMICS OF LIVER TISSUE PROTEINS AS RELATED TO THE FORMATION OF THE WATERY AND ELECTROLYTIC BILE FRACTION. *(Ukr.)* Esipenko, B. E. (A. A. Bogomoletz Inst. Physiol., Ukranian Acad. Sci., Kiev, USSR), L. I. Starushenko and A. P. Kostromina. *Fiziol Zh* 16(3):336-340, 1970.

7169 DEAMINATION OF SOME BIOGENIC AMINES AND OTHER NITROGENOUS COMPOUNDS BY LIVER MITOCHONDRIA. *(Rus.)* Gorkin, V. Z. (Inst. Biol. Med. Chem., Acad. Med. Sci. USSR, Moscow), Zh. I. Akopyan, I. V. Veryovkina, L. I. Gridneva and L. N. Stesina. *Biokhimiia* 35(1):140-151, 1970.

7170 EFFECT OF BILE ACIDS ON BILE SECRETION AND CHOLATE FORMATION. *(Rus.)* Skakun, N. P. (Med. Inst. Ternopol', USSR), S. M. Drogovoz and N. M. Bezkorovayinaya. *Fiziol Zh SSSR Sechenov* 56(2):274-278, 1970.

7171 METABOLIC EFFECTS OF AFLATOXIN IN ONE DAY OLD CHICKS. *(E.)* Raj, H. G. (Vallabhbhai Patel Chest Inst., U. Delhi, India), R. Shankaran and T. A. Venkitasubramanian. *Indian J Biochem* 7(1):55-56, 1970.

7172 EFFECT OF ALKYLATING AGENTS ON GLYCOGEN PHOSPHORYLASE ACTIVITY OF ASCITES TUMOR CELLS. *(E.)* Tashiro, T. (Cancer Inst., Tokyo, Japan) and Y. Sakurai. *Gann* 61(1):35-40, 1970.

7173 EFFECT OF ALKYLATING AGENTS ON GLYCOGEN SYNTHETASE ACTIVITY OF ASCITES TUMOR CELLS. *(E.)* Tashiro, T. (Cancer Inst. Tokyo, Japan) and Y. Sakurai. *Gann* 61(1):41-46, 1970.

7174 BASES AND DEVELOPMENTS OF STUDIES ON BILE PIGMENTS. *(E.)* Yamaoka, K. (Dept. Med., Kyushu U., Japan). *Jap J Med* 9(1):7-13, 1970.

7175 KINETICS OF ACYL TRANSFER BY BEEF LIVER ESTERASE. *(E.)* Fruton, J. S. (Kline Biol. Tower, Yale U., New Haven, Conn.) and M. I. Goldberg. *Biochemistry* 8(17):3371-3378, 1970.

7176 INCORPORATION OF 1-C^{14}-ARACHIDONIC ACID INTO LINOLEIC ACID IN LIVER PHOSPHOLIPID OF RATS WITH DEFICIENCY OF FAT AND VITAMIN B_6. *(E.)* Majima, Y. (Sch. Med., Keio U., Tokyo, Japan). *Keio J Med* 18(4):175-180, 1969.

7177 MECHANISM OF CYCLOPHOSPHAMIDE ACTIVATION. *(E.)* Kondo, T. (Nagoya U. Sch. Med., Japan) and H. Muragishi. *Gann* 61(2):145-151, 1970.

7178 INHIBITION OF THYROID HORMONE INDUCTION OF MITOCHONDRIAL GLYCEROPHOSPHATE DEHYDROGENASE IN RIBOFLAVIN DEFICIENCY. *(E.)* Wolf, G. (Dept. Chem., Belfer Grad. Sch. Sci., Yeshiva U., New York, N. Y.) and R. S. Rivlin. *Endocrinology* 86(6):1347-1353, 1970.

7179 EFFECT OF BLOOD GROUP SUBSTANCES DECOMPOSING ENZYME AND RNase UPON THE HUMAN LIVER RIBOSOME. *(Jap.)* Ikemoto, S. (Natl. Res. Inst. Police Sci., Tokyo, Japan). *Med Biol* 80(6):295-297, 1970.

7180 PARTIAL LIVER RESECTION: SERUM AND LIVER TISSUE ENZYME ACTIVITIES. *(Rus.)* Ashrapova, M. A. (Tashkent Med. Inst., Tashkent, USSR), B. A. Akhundzhanov and U. T. Bakhabov. *Med Zh Uzbek* (4):61-63, 1970.

7181 L-GLUTAMINE:D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE (EC 2.6.1.16) ACTIVITY OF THE LIVER IN RATS FED AN ATHEROGENIC DIET CONTAINING CHOLESTEROL. *(E.)* Malathy, K. (Div. Biochem., U. Kerala, Trivandrum, India), P. Seethanathan and P. A. Kurup. *Indian J Biochem* 7(1):83-84, 1970.

7182 TECHNIQUE FOR REPEATED BILE COLLECTION IN THE RAT. *(E.)* Dean, E. E. (Dept. Bioengineering, Southwest Res. Inst., San Antonio, Tex.), R. E. Schuhmann, S. J. Tomlinson and W. M. Tomlinson. *J Appl Physiol* 29(1):111-112, 1970.

7183 HEPATIC FUNCTION FOLLOWING INTRAVENOUS ETHANOL ANESTHESIA. *(E.)* Isaac, M. (Queen's Hosp., Belfast, Ireland). *Anaesthesia* 25(2):198-201, 1970.

7184 METHODS FOR THE DESCRIPTION OF BILE ACID KINETICS IN MAN. *(E.)* Hofmann, A. F. (Mayo Clin., Rochester, Minn.), L. J. Schoenfield, B. A. Kottke and J. R. Poley. *Methods Med Res* 12:149-180, 1970.

7185 EFFECT OF ADMINISTRATION OF α-p-CHLOROPHENOXYISOBUTYRATE ON HEPATIC MITOCHONDRIA AND UBIQUINONE DURING COLD EXPOSURE. *(E.)* Inamdar, A. R. (Dept. Biochem., Indian Inst. Sci., Bangalore), B. V. S. Sharma, H. N. Aithal, C. K. Ramakrishna Kurup, J. D. Padayatty and T. Ramasarma. *Indian J Biochem* 7(1):9-12, 1970.

7186 2,4-DINITROPHENOL AND OXIDATION OF SUBSTRATES BY RAT LIVER MITOCHONDRIA. *(E.)* Katyare, S. S. (Bhabha Atomic Res. Ctr., Bombay, India), P. Fatterpaker and A. Sreenivasan. *Indian J Biochem* 7(1):1-8, 1970.

7187 THE EFFECT OF XYLITE ON BILE SECRETION AND SYNTHESIS OF BILE ACIDS. *(Rus.)* Bezkorovainaya, N. M. (Ternopol Med. Inst., USSR). *Biull Eksp Biol Med* 69(5):69-71, 1970.

7188 CONTROL MECHANISMS OF CHOLESTEROL BIOSYNTHESIS. *(E.)* Ho, K. J. (Evanston Hosp., Ill.) and C. B. Taylor. *Arch Path* 90(1):83-92, 1970.

7189 INCREASE OF SERINE DEHYDRATASE, HOMOSERINE DEHYDRATASE AND CYSTINE (CYSTEINE) DESULFHYDRASE IN RAT LIVER DUE TO A HIGH PROTEIN DIET AND THE INFLUENCE OF VITAMIN B_6 DEFICIENCY. *(E.)* Sawaki, S. (Sch. Med. Nagoya U., Japan) and H. Hattori. *J Vitamin* 16(2):83-85, 1970.

7190 STRAIN DIFFERENCES IN THE METABOLISM OF IMIPRAMINE BY RAT. *(E.)* Jori, A. (Inst. Pharmacol. Res. Mario Negri, Milan, Italy), D. Bernardi, C. Pugliatti and S. Garattini. *Biochem Pharmacol* 19(4):1315-1321, 1970.

- P:Morph (7022)(7025)(7028)(7029)(7032)(7037)(7039)(7040)(7042)(7043)(7045)(7046)(7048)(7051)(7052)
- P:Absorp (7063)(7072)
- D:Livbil (7525)(7528)(7529)(7536)(7537)(7541)
- D:Livbil:A.Nonv.Hep (7575)(7577)(7578)(7579)(7585)(7595)
- D:Livbil:Gallb (7655)(7671)
- D:Gen (7683)

SECRETION AND METABOLISM

Intestine

7191 POSTPRANDIAL pH AND NEUTRALIZING CAPACITY OF THE PROXIMAL DUODENUM IN DOGS. *(E.)* Grossman, M. I. (VA Ctr., Los Angeles, Calif.) and A. M. Brooks. *Gastroenterology* 59(1):85-89, 1970.

The pH of the contents of the duodenal bulb (within 2 cm of the pylorus) and of the midduodenum (15 cm from the pylorus) was continuously recorded with miniature glass electrodes positioned in metal cannulas in 3 dogs while fasting and after eating (meat meal with 22% protein, 5% fat, and 25% moisture). The mean fasting pH was 5.0 in the duodenal bulb (with considerable variation) and 6.2 in the midduodenum. In the duodenal bulb, the lowest mean postprandial pH of 3.4 occurred in the second 15 min period after feeding and rose gradually to the mean of 3.6, while in the midduodenum the early postprandial pH of 5.5 dropped gradually to the mean of 5.1. The titration curve of a 10 ml gastric content sample 3 hr after the meal was linear with a mean initial pH of 3.3 and required 1.38 mEq of NaOH to neutralize it to pH 7.0, while an *in vitro* 10 ml sample of gastric content incubated with the meat meal had an initial pH of 3.0 and required 1.56 mEq of NaOH to reach neutrality.

7192 PROSTAGLANDIN: LIBERATION FROM AND FORMATION IN PERFUSED FROG INTESTINE. *(E.)* Bartels, J. (Max Planck Inst. Exp. Med., Gottingen, Germany),

H. Kunze, W. Vogt and G. Wille. *Naunyn Schmiedeberg Arch Pharmakol* 266(3):199-207, 1970.

The role of phospholipase A and of certain fatty acids on prostaglandin formation and the release of prostaglandin was studied in the perfused frog intestine. The release of prostaglandin was highest at the beginning of the perfusion and then decreased from 100% to 69% in 40 min and ranged from 0.55 to 29 ng prostaglandin E_1 Eq/min. Following acetylcholine administration (10 µg/ml for 10 min) the prostaglandin output was increased (mean: control, 70 ng; treatment, 313 ng). A stimulation of prostaglandin release was also achieved by repeated injection of 1 µg dimethylphenylpiperazinium iodide (control 100 ng; treatment 165 ng); adrenaline had no definite effect. Prostaglandin output increased moderately (control 100 ng; treatment 154 ng) following lysolecithin injecttion (10 µg/ml) and remarkably after phospholipase A injection (control 15 ng; treatment 670 ng); the activity released by phospholipase A corresponded to prostaglandin E_1 as determined by thin-layer chromatography. On continuous infusion of arachidonic acid (1 µg/min for 20 min) the prostaglandin activity in the perfusate rose 5-fold (174 ng to 742 ng), but the activity released was due to prostaglandin E_2,not to prostaglandin E_1. A prostaglandin forming enzyme system active in the intact tissue appears to be responsive to physiological stimuli which may activate phospholipase A and provide free precursor acids.

7193 GAMMA GLUTAMYL CARBOXYPEPTIDASE (CONJUGASE), THE FOLIC ACID-RELEASING ENZYME OF INTESTINAL MUCOSA.

(E.) Bernstein, L. H. (Albert Einstein Coll. Med., Bronx, N. Y.), S. Gutstein and S. V. Weiner. *Amer J Clin Nutr* 23(7):919-925, 1970.

The effects of diphenylhydantoin, BSP, and dihydroxy and trihydroxy bile salts on gamma glutamyl carboxypeptidase (conjugase), the folic acid-releasing enzyme of the intestinal mucosa, were studied. The pH optimum of intestinal conjugase differed in guinea pig and man (6.1 and 5.3, resp.) in 0.1 M phosphate buffer. The distribution of conjugase in the guinea pig intestine revealed a low level of activity in the stomach (1500 U/hr), a higher level in the duodenum (3500 U/hr) and highest levels in the jejunum (5300 U/hr). Pancreatic conjugase activity was roughly the same as in the stomach. Diphenylhydantoin, in solution and in concentrations up to 500 µg/ml was not inhibitory to human intestinal conjugase in either of the buffers used (citrate-phosphate or phosphate). An 80% inhibition following BSP (200 µg/ml) and a 100% inhibition above a BSP concentration of 1,000 µg/ml was observed. *In vivo*, BSP interfered with the absorption of folic polyglutamate, but it did not prevent the absorption of crystalline folic acid. Both dihydroxy bile acids (deoxycholic acid and chenodeoxycholic acid) completely inhibited conjugase activity at levels of 1.5 µmoles/ml in the guinea pig mucosal preparations, but cholic acid was only 30% inhibitory even at 2 µmoles/ml. Incomplete inhibition of human conjugase by the dihydroxy bile salts was probably due to their precipitation at high concentrations at pH 5.3. Metabolite(s) produced by bacterial proliferation may lead to intestinal conjugase inhibition with resultant malabsorption of dietary folate which could account for the nutritional folate deficiency seen in tropical sprue.

7194 THE HORMONAL CONTROL OF BRUNNER'S GLAND SECRETION AND DUODENAL MOTILITY IN THE DOG.

(E.) Love, J. W. (Johns Hopkins U. Sch. Med., Baltimore, Md.), D. D. Bass, T. J. Ustach and M. M. Schuster. *J Surg Res* 10(9):395-403, 1970.

Hormonal control of Brunner's gland secretion in response to secretin and cholecystokinin-pancreozymin (CCK-PZ) stimulation was studied in proximal duodenal pouches of 3 dogs and 2 cats. Pure porcine secretin or natural porcine CCK-PZ (1 to 1.7 µg/kg/hr) were dissolved in volumes of up to 15 ml of 0.01 N HCl in 0.9% saline for i.v. infusion. Recordings were also made of pouch motility by embolectomy catheter attached to a pressure transducer and also using *in vitro* circumferential duodenal muscle strips. CCK-PZ produced a rapid peak response in duodenal secretion which was not sustained during infusion; secretin produced a sustained secretory response in both dog and cat. Fasting contractions (14 to 18/min) separated by 5 to 30 sec quiescent periods rose to 19 to 20/min after feeding. CCK-PZ (50 µg) caused a rapid burst of contractions which diminished in intensity after 50 sec of infusion while secretin (50 µg) did not affect either the strength or frequency of contractions. *In vitro* motility studies also revealed a vigorous contractile response to CCK-PZ but no response to secretin.

7195 EFFECT OF SECRETIN ON FASTING AND POSTPRANDIAL pH OF THE DUODENAL BULB IN DOGS. *(E.)*

Grossman, M. I. (VA Ctr., Los Angeles, Calif.) and A. M. Brooks. *Gastroenterology* 59(1):90-94, 1970.

The pH of the duodenal bulb contents (2 cm from the pylorus) was continuously monitored with a miniature glass electrode inserted through a metal cannula into the duodenum, and gastric acid and pancreatic bicarbonate outputs were measured in dogs before and after a commercial dog food feeding (Prime, General Foods Corporation) with and without the i.v. infusion of secretin (3 U/kg/hr). Secretin raised the mean fasti pH from 6.2 to 8.1, and the lowest postprandial pH from 2.9 to 3.8. No significant difference in the volume recovered from the gastric fistula 4 hr after the meal was seen with secretin infusion. The mean acid output from the Pavlov pouch in response to the meal was reduced 30% by secretin infusion, and the progressive rise of postprandial pancreatic bicarbonate output (mEq/15 min) to 1.0 in controls was increased to 4.2 with secretin.

7196 EFFECT OF HYPOPHYSECTOMY ON AMINO ACID, THYMIDINE, AND OROTIC ACID INCORPORATION INTO THE MUCOSA OF THE SMALL BOWEL.

(E.) Levitan, R. (West Side Hosp., Chicago, Ill.) and E. Havivi. *Canad J Biochem* 48(7):828-830, 1970.

The effect of hypophysectomy on the incorporation of tritiated thymidine and orotic acid into DNA and RNA, resp., and the incorporation of amino acids into protein by polyribosomes of the small intestinal mucosa of the rat was investigated. Hypophysectomy decreased incorporation of label into both DNA (control 815; treatment 400 dpm/mg) and RNA (control 470; treatment 290 dpm/mg). Hypophysectomy also reduced the incorporation of L-leucine-1-^{14}C into intestinal protein *in vitro* (control 4260; treatment 2978 dpm/mg). These decreases are probably related to diminished cell renewal and DNA synthesis.

7197 NONDISPLACEMENT OF RAT TISSUE RIBOFLAVIN BY 7-CHLORO-8-METHYL-FLAVIN AND THE STIMULATION OF INTESTINAL SYNTHESIS OF RIBOFLAVIN. *(E.)* Lambooy, J. P. (Sch. Med. U. Maryland, Baltimore), R. A. Scala and E. Homan. *J Nutr* 100(8):883-892, 1970.

Nondisplacement of weanling rat tissue riboflavin by 7-chloro-8-methyl-flavin and the stimulation of the intestinal synthesis of riboflavin were investigated. Riboflavin-deficient animals receiving 7-chloro-8-methyl-flavin excreted significantly more riboflavin in their urine and feces (1.49 µg/day) than deficient animals receiving water alone (0.50 µg/day). The excretion of riboflavin derived from tissue stores of labeled riboflavin was approximately the same for the above 2 groups (-0.38 and -0.35 µg/day, resp.). In riboflavin-deficient animals receiving 7-chloro-8-methyl-flavin, the average body content of total riboflavin increased (+28 µg) and the average body concentration showed a large decrease (0.93 µg/g), but in deficient animals receiving water alone, the average body content of total riboflavin fell slightly during the test period (-8 µg) and the average body concentration of the total riboflavin was not significantly altered during the test period. The urine of animals receiving the riboflavin analog contained material identified as flavin or flavin-like by ultraviolet light and by radioautography corresponding to riboflavin, riboflavin-5′-phosphate and an unknown metabolite at R_f 0.12 (riboflavin = 0.30).

7198 DECREASE OF DNA SYNTHESIS IN DUODENAL CRYPT CELLS OF RATS TREATED WITH Na_3(Ca-DTPA). *(E.)* Weber, K. M. (Inst. Radiobiol., Karlsruhe, Germany), F. Bohne and U. Rabe. *Europ J Pharmacol* 11(1):117-118, 1970.

7199 ROLE OF DIFFERENT REGIONS OF THE SMALL INTESTINE IN THE SECRETION OF CHOLESTEROL. *(Rus.)* Konyushko, S. D. (Acad. Med. Sci. USSR, Moscow). *Biull Eksp Biol Med* 69(5):32-33, 1970.

P:Secr:Int

- P:Morph (7024)(7025)(7026)(7031)(7034)(7035)(7039)(7044)
- P:Absorp (7056)(7057)(7058)(7060)(7062)(7064)(7066)(7067)(7068)(7070)(7074)(7077)
- P:Gen (7210)
- D:Stomduo (7376)
- D:L.Intest (7473)

GENERAL

7200 THE EFFECT OF BORDETELLA PERTUSSIS VACCINE AND ADRENAL HORMONES ON 5-HYDROXYTRYPTAMINE LEVEL IN RAT TISSUES. *(E.)* Csaba, B. (U. Med. Sch., Debrecen, Hungary) and L. Muszbek. *Acta Microbiol Acad Sci Hung* 17(1):63-68, 1970.

7201 GENERALIZED SHWARTZMAN PHENOMENON IN RESPONSE TO ADMINISTRATION OF TISSUE EXTRACTS OF ASCARIDES. *(Rus.)* Sapach, V. K. (Rostov Med. Inst., Rostov, USSR). *Med Parazit* 39(2):201-205, 1970.

7202 STUDIES ON ENTERIC BACTERIAS IN THE LOWER AMAZON REGION: I. SEROTYPES OF *SALMONELLA* ISOLATED FROM WILD FOREST ANIMALS IN PARA STATE, BRAZIL. *(E.)* Lins, Z. C. (Evandro Chagas Inst., Belem, Para, Brazil). *Trans Roy Soc Trop Med Hyg* 64(3):439-443, 1970.

7203 GASTRIC BLOOD FLOW: I. ITS DISTRIBUTION DURING GASTRIC DISTENTION. *(E.)* Edlich, R. F. (U. Minnesota Hosp., Minneapolis), J. W. Borner, J. Kuphal and O. H. Wagensteen. *Amer J Surg* 120(1):35-37, 1970.

7204 EXPERIMENTS ON THE ENZYMIC DEPHOSPHORYLATION OF NADP ANALOGUES BY ALKALINE PHOSPHATASE FROM CALF GUT. *(Ger.)* Christ, W. (Inst. Neuro-Psychopharmacol., Free U., Berlin), D. Schmidt and H. Coper. *Hoppe Seyler Z Physiol Chem* 351(7):803-808, 1970.

7205 AEROSOL VACCINATION WITH TYPHOID AND BOTULIN A AND B TRIVACCINE AND WITH TYPHOID-TETANUS AND BOTULIN A AND B TETRAVACCINE UNDER EXPERIMENTAL CONDITIONS ON ANIMALS. *(Rus.)* Alexandrov, N. I. (Mechnikov Inst. Serum and Vaccines, Moscow, USSR), N. E. Gefen, N. B. Egorova, V. N. Efremova, I. V. Vorontsov and I. V. Miroshnichenko. *Zh Mikrobiol* 47(5):84-89, 1970.

7206 SELECTIVE ABDOMINAL HYPOTHERMY. *(Ukr.)* Deineka, I. Ya. (Med. Inst. Odessa, USSR), V. V. Larin and K. V. Ostashkov. *Fiziol Zh* 16(3):363-368, 1970.

7207 OXYGEN TENSION IN THE GASTRIC WALL AND SMALL AND LARGE INTESTINE UNDER NORMAL AND PATHOLOGICAL CONDITIONS. *(Rus.)* Krendal, A. P. (I. M. Sechenov Med. Inst., Moscow, USSR), I. M. Epshtein, and S. V. Eliseyeva. *Pat Fiziol Eksp Ter* 14(1):29-33, 1970.

7208 INTESTINAL MICROFLORA OF HUMAN SUBJECTS. *(Rus.)* Marko, O. P. (Sci. Res. Inst. Protology, Moscow, USSR). *Lab Delo* (6):365-368, 1970.

7209 INTERACTIONS BETWEEN MACROPHAGES OF GUINEA PIG AND SALMONELLAE: II. PHAGOCYTOSIS OF *SALMONELLA TYPHIMURIUM* BY MACROPHAGES OF NORMAL GUINEA PIGS. *(E.)* Wells, P. S. (Med. Coll. Virginia, Richmond) and H. S. Hsu. *Infect Immun* 2(2):145-149, 1970.

7210 METABOLISM AND BIOLOGICAL POTENCY OF 3-DEHYDRORETINOIC ACID. *(E.)* Mallia, A. K. (Indian Inst. Sci., Bangalore, India) and H. R. Cama. *Int Z Vitaminforsch* 40(2):115-124, 1970.

- P:Morph (7046)(7049)
- P:Secr:Hepatobil (7174)(7188)(7190)
- Diagproc (7282)
- D:Livbil:Cirrh (7641)
- D:Gen (7708)

11 RAPID SCREENING TEST FOR DETECTING HEPATITIS-ASSOCIATED ANTIGEN. *(E.)* Saravis, C. A. oston City U., Mass.), C. Trey and G. F. Grady. *ience* 169(3942):298-299, 1970.

technique, based upon Laurell's modification of ossed electrophoresis (but substituting a pre-rmed microporous cellulose acetate membrane for ar) which can be completed within 2 hr and is at ast as sensitive as the Ouchterlony technique for e detection of hepatitis associated antigen, was scribed. The cellulose acetate membrane (95 x 75 0.01 mm) saturated by 1 ml of diluted antiserum :16 was used in present study), was placed on a rafilm-covered neoprene rubber base which served compress the membrane snugly against a top cite template secured by bolts tightened evenly a torque wrench preset at 5 x 10^6 dyne/cm. A rrent of 6 ma (250 volts) was applied for 2 hr; e precipitates were revealed by staining. Anti-n was quantitated by measuring the migration stance of the cone of the rocket-shaped immuno-ecipitate. Specificity of the antiserum for an tigen in the sera of viral hepatitis patients s suggested by the lack of immunoprecipitation th serum samples from normal individuals and tients with other illnesses.

12 HYPOTONIC DUODENOGRAPHY. *(Fr.)* Engelholm, L. (Hosp. U. Brugmann, Brussels, Belgium), Mainguet, R. Kiekens and J. Struyven. *Acta Gastroent lg* 33(2):120-136, 1970.

potonic duodenography was performed on 150 patients 7 with normal and suspicious duodenal alterations, with pancreatic disease, 13 with papillary disease d 24 with various duodenal diseases) and compared standard radiological findings. Precise focusing duodenal involvement in 2 cases of pancreatitis s achieved where standard radiology was not efficient; ncreatic tumor was ascertained in 9 out of 10 cases the standard method while the 10th case was revealed ly by the new method. Early diagnosis of tumor of e papilla duodeni was possible due to the superior ality of radiological image.

13 ARTERIOGRAPHY IN PRIMARY LIVER TUMORS. *(E.)* Bennet, J. (Emile Roux Hosp. Ctr., ris, France). *Aust Radiol* 14(2):183-193, 1970.

teriographic examinations performed on 33 patients cluding 30 selective explorations of the celiac unk, one selective exploration of the superior senteric artery (after failure to catheterize the liac trunk) and 2 aortographies led to the diag-sis of 23 cases of hepatoma and confirmation of diagnosed cases. In 32 of the 33 cases a pri-ry malignant tumor was highly probable, and in e case which was investigated by non-selective teriography, the diagnosis was missed (a small mor giving rise to a subcapsular hematoma). The direct arteriographic signs showed the tumor mass isplacement of the celiac trunk) and its hyper-scularity which included an increase in the size the hepatic artery supplying the tumor, poor fill-g of the surrounding tissue, and an extra blood supply from the superior mesenteric artery. The direct arteriographic signs were apparent at the arteriolar and parenchymatous phases where disorganized vessels filled blood lakes in which there was stasis of the contrast medium, giving the tumor a markedly nonhomogenous appearance. Hepatic veins which did not empty due to compression by the tumor were found, as well as hepato-portal shunts suggestive of adenocarcinomas.

7214 TECHNICAL ADVANCES OF PANCREATIC SCANNING WITH A FAST SCANNER(DYNAPIX). *(Ger.)* Schnabel, K. (U. Radiol. Clin. Heidelberg, Germany), P. Schenk and D. Lange. *Nuclearmedizin* 9(2):129-135, 1970.

Pancreatic scanning performed in 101 patients (200-250 µC ^{75}S-methionine, i.v.) with a Dynapix fast scanner allowing picture taking every 12-15 min revealed maximal ^{75}Se accumulation in the organ within 30-75 min. A reliable image of the pancreas contour was obtained in 29% of 37 patients examined in horizontal position, with no preliminary treatment or special diet. The lower end of the table was elevated by 15° for 64 patients kept on their right side which allowed a good visualization of the organ in 36% of the cases. In doubtful cases an additional peroral image of the gastrointestinal tract was taken (100 µC ^{198}Au), keeping the patient in the same position, and, in case no differentiation between the pancreas and liver occurred, a liver scintigram was made (200 µC ^{198}Au i.v.). After appropriate image subtraction, the pancreas was visualized in 77% of cases. The results suggested that 2 out of 4 scintigraphic shapes (the sigmoid and the horse shoe), described in the literature, are artifacts caused by interference of the gastrointestinal tract.

7215 CHOLANGIOTOMOGRAPHY WITH BILIVISTAN: A FURTHER REPORT. *(E.)* Govoni, A. F. (Gen. Hosp., Sault Ste. Marie, Ontario, Canada). *Aust Radiol* 14(1):56-63, 1970.

In 100 unselected cases, Bilivistan was shown to be more advantageous in the degree of radiographic demonstration of the gallbladder and the common and hepatic bile ducts than either Biligrafin or p.o. cholecystographic agents. With Bilivistan (injected i.v. or i.m. 60 min prior to the first cholangiogram), there was satisfactory and simultaneous opacification of the gallbladder and its ducts as well as longer duration of the opacification of the extrabiliary system with no or minimal untoward reactions. Fewer radiographs are required even when tomographic studies are considered, thereby reducing the radiation exposure to the patient.

7216 ECHOGRAPHIC DIAGNOSIS OF PANCREATIC LESIONS: ULTRASOUND SCANNING TECHNIQUES AND DIAGNOSTIC FINDINGS. *(E.)* Filly, R. A. (U. Hosp. Cleveland, O.) and A. K. Freimanis. *Radiology* 96(3):575-582, 1970.

Thirty-seven patients with proven or suspected pancreatic diseases (acute pancreatitis, chronic pancreatitis with acute exacerbation, pancreatic pseudocyst, and carcinoma of the pancreas) were examined by echography. In 9/11 cases of pancreatitis the echogram demonstrated changes characteristic of pancreatic edema. In 6/7 cases, the pseudocyst was demonstrated pre-operatively by echography and echograms of 2/3 patients with suspected pseudocysts showed no evidence of pseudocysts (a finding subsequently verified at surgical exploration); the remaining case was a false positive due to a large accumulation of fat. In diagnosing carcinoma of the pancreas by echography, 3 cm lesions appeared to be the smallest that can be differentiated from surrounding structures. Of the 11 patients with suspected carcinoma of the pancreas examined, 6 had peripancreatic lesions (2 lymphosarcoma, 1 Hodgkin's disease, 1 carcinoma of the common bile duct, 1 carcinoma of the gallbladder, and 1 enlarged, hyperplastic lymph node). A mass could be shown echographically in all tumors except in the carcinoma of the common bile duct. Of the 5 cases without masses, the echogram was normal in 1, and correctly suggested pancreatitis in another. The remaining 3 cases were of advanced cirrhosis, each of which showed bizarre echographic abnormalities in the peripancreatic region, and 1 case strongly suggested a mass. Radioisotope and echo scans were generally in agreement.

7217 HYPOTONIC DUODENOGRAPHY. *(Fr.)* Yvergneaux, J. P. (Ghent, Belgium), W. Depuydt and M. Biot. *Acta Gastroent Belg* 33(2):173-178, 1970.

Hypotonic duodenography performed immediately following standard radiology (i.v. administration of a mixture of visceralgine and 0.5 mg atropine) allowed excellent focusing of duodenal lesions produced by pancreatic disease. However, drawbacks were observed when investigations were made at the duodenal bulb level of the ampulla of Vater, where images were unreliable. Complementary use of pancreas scintography is suggested at this level in cases of obstructive jaundice.

7218 RELATIONSHIP BETWEEN SULFOBROMOPHTHALEIN CLEARANCE AND Au^{198}CLEARANCE: SOME SCINTIGRAPHIC ASPECTS IN LIVER DISEASES. *(It.)* Maduli, S. (Maggiore Hosp. Novara, Italy) and G. L. Castagnetti. *G Clin Med* 51(3):180-253, 1970.

BSP clearance was compared to colloidal radioactive gold clearance (Au^{198}e.v. 1.5 μc/kg), radioisotope liver scanning (60 min after Au^{198} administration) and needle biopsy data in 12 normal subjects and 127 patients with liver disease. BSP clearance followed a simple exponential pattern (single stage) in normal subjects and varied between K=11.5% and 18.2%; colloidal gold clearance, K Au^{198}, varied between 13.9% and 24.4% and the ratio K BSP/K Au^{198} had a mean value of 0.82. BSP clearance occurred in two stages in all pathological conditions: in alcoholic steatosis (9 cases), K_1 BSP = 8.2% and K_2 BSP = 1.9%; in chronic hepatitis (26 cases, alcohol-induced), K_1 BSP = 5.6% and K_2 BSP = 1.4%; in liver cirrhosis (32 cases), K_1 BSP = 3.8% and K_2 BSP = 1.1%; in liver metastatic neoplasms (22 cases), K_1 BSP = 5.5% and K_2 BSP = 0.8%; and in cholelithiasis (17 cases), K_1 BSP = 7.1% and K_2 BSP = 0.7%. In the same order, colloidal gold clearance values were 17.0%, 14.0%, 6.0%, 16.7%, and 14.9% in cholelithiasis. The ratio K BSP/K Au^{198} was 0.48, 0.39, 0.66, 0.39 and close to normal in cholelithiasis in the same order. Liver scanning revealed considerable alterations in contour and dimensions with a decrease in liver surface in cirrhosis. Comparison of BSP clearance (parenchymal function) and colloidal gold clearance (Kupffer cell function and liver circulation), may allow the assessment of liver cell damage and liver circulatory alteration in the differential diagnosis of liver diseases.

7219 ANGIOGRAPHY AND SCANNING IN LIVER DISEASE. *(E.)* Rossi, P. (Cornell U. Med. Sch., New York, N. Y.) and H. R. Gould. *Radiology* 96(3):553-562, 1970.

The comparative accuracy of 1600 liver scans and 450 selective celiac or hepatic arteriograms was determined in 105 cases which had been examined by both diagnostic methods and in which a proved diagnosis had been obtained in 77 cases (26 cases of space occupying lesions, 35 cases of cirrhosis and 16 normals) by needle biopsy, laparotomy, or postmortem examination. Both arteriography and liver scanning were found to be complementary to each othe with the liver scan providing an excellent method of screening and arteriography giving more information and illustrating more and smaller intrahepatic lesio In the presence of cirrhosis, arteriography was neces sary to differentiate pseudotumors from true neoplas Angiography can show the hepatic anatomy prior to the intra-arterial chemotherapeutic perfusion of the live and may also show other areas of metastases when ves adjoining the celiac artery are injected.

7220 CORRELATION OF ANGIOGRAPHY AND ISOTOPE SCANNING IN ABDOMINAL DISEASES OF CHILDREN. *(E.)* Nebesar, R. A. (Harvard Med. Sch., Boston, Mass.), M. Tefft and R. M. Filler. *Amer J Roentgen* 109(2):323-340, 1970.

The advantages of performing and correlating angiography and isotope scanning in abdominal diseases in children (36) was investigated. The scan demonstrated an abnormality in all of the diseases studied (including primary hepatic malignancy 3, benign primary liver tumor 4 and radiation hepatitis 7); the angiogram was abnormal in all but 2 cases (radiation hepatitis and biliary atresia). There were no false positive interpretations by scan or angiogram. Three primary malignant hepatic tumors (2 hepato-cellular carcinomas and 1 hepatoblastoma) had abundant vascular supply, with angiography showing enlargement of the hepatic arteries with large feeding arteries and numerous small vessels within the lesion. Three metastatic lesions affecting the liver (1 Wilm's tumor, 1 paraganglioma, and 1 sarcoma) were less vascular than the primary hepatic tumors; all lesions showed decreased radioisotope uptake as contrasted with normal areas of the liver. Five masses which

ved extrinsic to the liver were inseparable from
ver by physical examination and routine roentgeno-
aphy but were noticed with angiography. Local
elling, opacification of the intrahepatic portal
in branches from the hepatic arteries, areas of
minished uptake, and areas of increased vascu-
rity in the liver were detected. In 1 case of
dominal injury hepatic angiography revealed a
calized arterial irregularity with a small false
eurysm in the same region.

21 DUODENAL EXFOLIATIVE CYTOLOGY: DUODENAL DRAINAGE SMEARS AFTER STIMULATION WITH
CRETIN. *(E.)* Asnaes, S. (Bispebjerg Hosp., Copen-
gen, Denmark) and A. Johansen. *Acta Path Microbiol*
ppl. 212):11-14, 1970.

imple method for aspiration of duodonal contents
an exfoliative cytological examination in cases
carcinoma of the pancreas and bile ducts was
vestigated. One hundred thirty-four cytological
aminations were carried out in 133 patients.
rteen smears showed positive cytology, 6 of which
vealed pancreatic cancer and 63 of which showed
rcinoma of the bile duct; in the remaining cases
carcinoma was found. The rest of the smears
owed a negative cytology (106), only one of which
bsequently was shown to have a carcinoma (pancreas).
e pancreatic tumors were always localized at the
ad of the pancreas, the bile duct carcinomas at the
stal part of the common bile duct. In the duodenal
pirate were seen duodenal cells, cells from the
cretory ducts of the pancreas and cells from the
le ducts. The epithelium of the duodenal cells
re slim, medium sized, cylindrical epithelial
lls with an oval nucleus in the lower half and a
minal striated border. The cells from the pancrea-
c ducts were also cylindric with round or oval
clei and often formed small, unconnected clusters.
striated borders were found here, but an occasional
blet cell was noticed. The cylindrical epithelium
the common bile duct, the gallbladder and the large
le ducts was very high and slender with small, oval
clei placed basally; no striated border or goblet
lls were found. All specimens contained a large
mber of strongly eosinophil, round or oval cells
ch one or more chromatin-like bodies, which had
parently undergone a considerable pyknosis. The
lignant cells have all been of the adenocarcino-
tous type and had no specific characteristics.

2 GASTRIC FLUORESCENCE LAVAGE METHOD FOR CYTODIAGNOSIS OF GASTRIC CANCER. *(E.)*
kenaka, M. (Tottori U. Sch. Med., Japan), S. Tanida,
Munakata, T. Takeuchi, Y. Sasaki and M. Ayabe.
nago Acta Med 14(1):27-32, 1970.

gastric fluorescence lavage method for cytodiag-
sis of gastric cancer employing acridine orange
in, allowed tumor cells to be easily distinguished
m benign cells by dense staining and brilliant
orescence. Morphologically, cancer cells had
ge, irregular nuclei, large nucleoli, and a marked
crease of nucleocytoplasmic ratio. Unfixed or
njured fresh cancer cells of the stomach showed
metachromasia and stained light green; cancer
cells of varying types of injury or fixed cells were diffusely stained and showed a metachromasia. Cytodiagnosis by the gastric fluorescence lavage method revealed 14 cases of benign gastric diseases and 20 cases of gastric cancer with a diagnostic accuracy of 95%.

7223 THE TECHNIQUE OF PERITONEOSCOPY. *(Rus.)* Khokhlov, N. F. (Tselinograd Med. Inst. Tselinograd, USSR) and G. N. Neikov. *Vestn Khir* 104(2):63-64, 1970.

7224 GASTROSCOPY IN THE DIAGNOSIS OF GASTROINTESTINAL HEMORRHAGES. *(Rus.)* Struchkov, V. I. (I. M. Sechenov Med. Inst., Moscow, USSR), L. K. Sokolov, E. V. Lutsevich, I. N. Belov and V. N. Ryzhikov. *Khirurgiia* 46(3):59-64, 1970.

7225 DIAGNOSIS OF CHOLELITHIASIS. *(Rus.)* Nadezhina, I. M. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):85-88, 1970.

7226 GASTRIC SECRETION IN PATIENTS WITH DUODENAL ULCER. *(Rus.)* Abramova, V. G. (Central Inst. Postgrad. Med. Training, Moscow, USSR). *Sovet Med* 33(4):96-98, 1970.

7227 CONTRAST ENEMA IN INVAGINATION OF THE LARGE INTESTINE. *(Rus.)* Mailyan, A. G. (Stepanavan Cty. Med. Unit, Stepanavan, USSR) and A. V. Myagkov. *Khirurgiia* 46(3):91-94, 1970.

7228 INTESTINAL MALABSORPTION: CLINICAL EVALUATION OF DIAGNOSTIC METHODS. *(Rus.)* Frolkis, A. V. (O. V. Kuusinen U. Petrozavodsk, Petrozavodsk, USSR) and T. Yu. Belen'kaya. *Ter Arkh* 42(3):36-40, 1970.

7229 ESOPHAGEAL MANOMETRY IN DIAGNOSIS OF HIATAL HERNIA. *(Rus.)* Chissov, V. I. (Scientific Res. Inst. Clin. and Experimental Surgery, Moscow, USSR) and N. N. Kanshin. *Sovet Med* 33(4):58-65, 1970.

7230 HEPATITIS-ASSOCIATED ANTIGEN: TO TEST OR NOT TO TEST? *(E.)* Alter, H. J. (Clinical Ctr. Blood Bank, Natl. Inst. Hlth, Bethesda, Md.), P. V. Holland and P. J. Schmidt. *Lancet* 2(7664):142-143, 1970.

7231 SCINTIGRAPHIC AND ANGIOGRAPHIC STUDIES OF THE LIVER OF DOGS WITH EXPERIMENTALLY PRODUCED OBSTRUCTIVE JAUNDICE. *(Ger.)* Kampmann, H. (Surg. U. Clin. Heidelberg, Germany) and D. Beduhn. *Nuclearmedizin* 9(2):156-166, 1970.

7232 CURRENT METHODS IN DIAGNOSIS OF CHRONIC GASTRITIS. *(Rus.)* Bondar, Z. A. (I. M. Sechenov Med. Inst., Moscow, USSR), L. Yu. Zhavoronkova and K. S. Mitin. *Sovet Med* 33(4):48-54, 1970.

7233 RADIOISOTOPE INVESTIGATION OF THE ESOPHAGUS. *(Rus.)* Rusanov, A. A. (Med. Inst. Pediatrics, Leningrad, USSR) and T. A. Osipkova. *Vestn Khir* 104(1):29-35, 1970.

7234 DIFFERENTIAL DIAGNOSIS OF ACUTE PANCREATITIS AND PERFORATING GASTRIC ULCER. *(Rus.)* Myshkin, K. I. (no affil), L. A. Frankfurt and M. V. Koltsova. *Klin Med* 48(1):66-70, 1970.

7235 RADIOISOTOPE SCANNING IN THE DIAGNOSIS OF ECHINOCOCCOSIS OF THE LIVER. *(Rus.)* Andrukovich, A. I. (Semipalatinsk Regional Unit Oncology, Semipalatinsk, USSR) and L. T. Aryamkin. *Klin Med* 48(1):79-83, 1970.

7236 DIAGNOSIS OF HIDDEN INJURIES OF ORGANS OF THE ABDOMEN. *(Rus.)* Nikiforov, B. I. (Saratov Med. Inst., Saratov, USSR). *Khirurgiia* 46(3):107-111, 1970.

7237 DIAGNOSIS OF ESOPHAGEAL LESIONS IN PATIENTS WITH RESECTED STOMACH. *(Rus.)* Pomelov, V. S. (I. M. Sechenov Med. Inst., Moscow, USSR), L. K. Sokolov, Yu. V. Vasiliev and N. E. Tsirulnikova. *Sovet Med* 33(4):86-90, 1970.

7238 GASTROSCOPY IN INFILTRATIVE FORMS OF GASTRIC SARCOMA. *(Rus.)* Rokhlin, E. A. (Reg. Clin. Oncol. Dispensary, Balashikha, USSR). *Vop Onkol* 16(2):69-71, 1970.

7239 CHOLECYSTOGRAPHY COMBINED WITH RELAXATION DUODENOGRAPHY IN THE DIAGNOSIS OF DISEASES OF THE HEPATOPANCREATODUODENAL ZONE. *(Rus.)* Gurvich, R. N. (I. M. Sechenov Med. Inst., Moscow, USSR) and M. M. Salman. *Klin Med* 48(1):102-105, 1970.

7240 USE OF ION-EXCHANGE RESINS FOR INVESTIGATION OF THE ACIDITY OF THE GASTRIC JUICE. *(Rus.)* Umansky, S. Sh. (Tallinn, USSR). *Ter Arkh* 42(3):14-18, 1970.

7241 THE DIAGNOSIS OF PANCREATIC TUMORS. *(Rus.)* Rozanov, I. B. (S. P. Botkin Clin. Hosp., Moscow, USSR) and G. I. Sabelnikov. *Khirurgiia* 46(2):76-80, 1970.

7242 DRIP INFUSION CHOLECYSTOGRAPHY. *(Rus.)* Rabkin, I. Kh. (Sci. Res. Inst. Clinical and Experim. Surgery, Moscow, USSR), V. S. Barmin and R. A. Sukhomlina. *Khirurgiia* 46(2):54-60, 1970.

7243 ASPIRATION BIOPSY OF THE ANTRAL REGION OF THE STOMACH. *(Rus.)* Pruchansky, V. S. (Central Sci. Res. Inst. Radiology, Leningrad, USSR). *Klin Med* 48(2):122-126, 1970.

7244 PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY. *(E.)* Carlson, H. C. (Mayo Clin., Rocheste Minn.). *Med Clin N Amer* 54(4):875-879, 1970.

7245 DIAGNOSTIC PROCEDURE IN BLEEDING OF OBSCUR ORIGIN FROM THE ALIMENTARY CANAL. *(E.)* Barany, F. (St. Erik's Hosp., Stockholm, Sweden) and L. H. S. Nilsson. *Gut* 11(4):307-313, 1970.

7246 DIAGNOSTIC VALUE OF LIVER EXCRETORY ENZYMES. *(E.)* Drozdz, H. (Cracow Med. Sch Poland) and A. Jedrychowski. *Pol Arch Med Wewnet* 44(4-5):529-534, 1970.

7247 DIAGNOSTIC ENZYMOLOGY IN DISEASES OF THE LIVER AND BILIARY TRACT. *(E.)* De Ritis, F. (Clin. Infect. Dis., U. Naples, Italy). *Pol Arch Med Wewnet* 44(4-5):509-523, 1970.

7248 FISHER'S DISCRIMINANT ANALYSIS EMPLOYED IN THE DIAGNOSTIC DIFFERENTIATION BETWEEN VIRAL HEPATITIS AND OBSTRUCTIVE JAUNDICE. *(E.)* Giusti, G. (Clin. Infect. Dis., U. Naples), G. G. Balestrieri and F. Piccinino. *Pol Arch Med Wewnet* 44(4-5):475-488, 1970.

7249 USE OF THE INDIRECT HEMAGGLUTINATION TEST IN SOME STUDIES OF SEROEPIDEMOLOGY OF AMEBIASIS IN THE WESTERN HEMISPHERE. *(E.)* Healy, G. R. (Natl. Commun. Dis. Ctr., Atlanta, Ga.), I. G. Kagan and N. N. Gleason. *Hlth Lab Sci* 7(3):109-116, 1970.

7250 THE DETECTION OF *AEROMONAS HYDROPHILA* IN STOOL SPECIMENS. *(E.)* Von Gravenitz, A. (Dept. Med., Yale U., New Haven, Conn.) and L. Zinterhofer. *Hlth Lab Sci* 7(3):124-127, 1970.

7251 RECENT ADVANCES IN DIAGNOSTIC GASTROENTER-OLOGY. *(E.)* Battersby, C. (Dept. Surg., U. Queensland, Australia). *Med J Aust* 57(19):963-968, 1970.

7252 FUNCTIONAL TESTS OF THE LIVER IN OBSTRUCTIVE JAUNDICE. *(Rus.)* Muravieva, N. K. (P. Lumumba University, Moscow, USSR) and G. A. Komogortseva. *Klin Med* 48(1):93-96, 1970.

7253 PER ORAL SMALL BOWEL BIOPSY IN CHILDREN. *(E.)* Mangiwa, J. (Roy. Alexandria Hosp. Child., Sydney, Australia) and J. A. Walker-Smith. *Paediat Indonesia* 10(2):43-51, 1970.

54 SIGNIFICANCE OF ACID GASTROSECRETORY FUNCTION TESTS IN SURGERY. *(It.)* Vincenzi, L. atebenefratelli-Fatebenesorelle Ciceri-Agnesi Hosp., lan, Italy), C. Corsi, G. Ubezio and M. Fincato. *nerva Gastroent* 16(2):57-69, 1970.

55 DIAGNOSIS AND THERAPY OF THE PATIENT WITH ABDOMINAL TRAUMA. *(It.)* Colombo, C. (St. ovanni Battista Hosp., Turin, Italy). *Chir stroent* 4(2):119-130, 1970.

56 QUANTITATIVE DETERMINATION OF GASTRIC EXCRETORY PROCESSES ACCORDING TO FMAN; CLINICAL IMPORTANCE. *(Rus.)* Zimmerman, S. (no affil), and Z. V. Cherinkova. *Lab Delo*):337-340, 1970.

57 ENZYMATIC DIAGNOSIS OF ACUTE PANCREATITIS. *(Rus.)* Levitsky, A. P. (Odessa Med. Inst., essa, USSR), A. S. Synovets, A. L. Dekhtyar and M. Tsvirkun. *Khirurgiia* 46(2):94-98, 1970.

58 ELECTROGRAPHIC EXAMINATION OF THE GASTRIC AND DUODENAL MOTOR FUNCTION. *(Rus.)* iyets, A. P. (Vinnitsa Med. Inst., Vinnitsa, USSR) *ch Delo*(2):8-12, 1970.

9 DETERMINATION OF ALKALINE PHOSPHATASE IN LEUKOCYTES OF PERIPHERAL BLOOD IN VIRAL ATITIS AND OBSTRUCTIVE JAUNDICE. *(Rus.)* darev, L. S. (Donets Med. Inst., Donets, USSR) S. I. Veprinskaya. *Lab Delo* (3):142-144, 1970.

0 EVALUATION OF THE SULFOBROMOPHTHALEIN TEST IN CHRONIC HEPATITIS AND CIRRHOSIS OF THE ER. *(Rus.)* Zherebtsov, L. A. (no affil), Yu. A. rova and A. A. Zamchii. *Klin Med* 48(6):52-58, 0.

1 RADIOTELEMETRICAL ASSESSMENT OF GASTRIC ACIDITY IN DIFFERENT REGIONS OF THE STOMACH. *s.)* Shevchenko, I. A. (S. M. Kirov. Military . Acad., Leningrad, USSR) *Lab Delo* (6):330-333, 0.

2 RADIOTELEMETRY IN THE INVESTIGATION OF GASTRIC ACID SECRETION. *(Rus.)* Shevchenko, A. (S. M. Kirov Military Med. Acad., Leningrad, R) *Lab Delo* (6):328-330, 1970.

7263 LABORATORY DIAGNOSIS IN GASTROENTEROLOGY. *(Rus.)* Belousov, A. S. (Moscow, USSR) *Lab Delo* (6):323-328, 1970.

7264 MORPHOLOGY OF GASTRIC MUCOSA IN THE DIAGNOSIS OF CHRONIC GASTRITIS. *(Rus.)* Tikhonov, K. B. (Central Sci. Res. Inst. Radiology, Leningrad, USSR) and V. S. Pruchansky. *Vestn Rentgen Radiol* 15(2):82-89, 1970.

7265 METHEMALBUMIN: A PATHOLOGICAL HEMIN PIGMENT IN SERUM OF PATIENTS WITH HEMORRHAGIC PANCREATITIS. *(Rus.)* Lashchevker, V. M. (Uzhgorod Med. Inst., Uzhgorod, USSR). *Klin Khir* (4):89-94, 1970.

7266 INDIRECT RADIOISOTOPE LYMPHOGRAPHY IN DETERMINATION OF THE DEGREE OF EXTENSION OF CANCER OF THE RECTUM. *(Rus.)* Dubovyi, E. D. (no affil), S. G. Antipov and O. V. Andreyev. *Klin Khir* (4):52-57, 1970.

7267 X-RAY DIAGNOSIS OF MIXED FORMS OF CANCER OF THE STOMACH. *(Rus.)* Shekter, I. A. (Med. Inst. Stomatol., Moscow, USSR), and N. T. Medvedeva. *Khirurgiia* 46(5):59-63, 1970.

7268 ACID SECRETION IN GASTRIC ULCER. *(Nor.)* Marcussen, H. (Gentofte Hosp., Denmark), H. R. Wulff and M. R. Wulff. *Ugeskr Laeg* 132(24):1149-1152, 1970.

7269 THE DIAGNOSIS OF BENIGN AND MALIGNANT TUMORS OF THE DUODENUM: A SURVEY OF THE LITERATURE AND OF THE CASES OBSERVED IN THE DEPARTMENT FROM 1960 TO 1968. *(Fr.)* Pringot, J. (Wilsele, Belgium) and P. Bodart. *Acta Gastroent Belg* 33(2):137-172, 1970.

7270 THIN-MIXTURE BARIUM OXIDE ENEMA. *(Fr.)* Carcy, J. B. (Hosp. Purpan, Toulouse, France), J. J. Sageaux, F. Joffre and J. L. Causse. *Rev. Med Toulouse* 6(6):481-483, 1970.

7271 DELAYED COMPLICATIONS OF LIVER BIOPSY. *(Ger.)* Wildhirt, E. (St. Hosp. Kassel, Germany). *Munchen Med Wschr* 112(26):1234-1237, 1970.

7272 VASCULAR RADIOLOGY IN LIVER DISEASE. *(E.)* Kreel, L. (Roy. Free Hosp., London, England). *Postgrad Med J* 46(1):19-31, 1970.

7273 THE RADIOLOGY OF SMALL BOWEL LESIONS. *(E.)* Craig, O. (St. Mary's Hosp., London, England). *Postgrad Med J* 46(1):44-51, 1970.

7274 ROUTINE PROCTOSIGMOIDOSCOPY: ITS VALUE AS A SCREENING PROCEDURE. *(E.)* Hart, D. L. (VA Ctr. Hosp., Wichita, Kansas) and F. W. Robinson. *J Kansas Med Soc* 71(7):274-275, 1970.

7275 TOTAL BODY COUNTING IN THE ASSESSMENT OF VITAMIN B_{12} ABSORPTION IN PATIENTS WITH PERNICIOUS ANEMIA, ACHLORHYDRIA WITHOUT PERNICIOUS ANEMIA AND IN ACID SECRETORS. *(E.)* Irvine, W. J. (Roy. Infirm., Edinburgh, Scotland), D. R. Cullen, L. Scarth, J. D. Simpson and S. H. Davies. *Blood* 36(1):20-27, 1970.

7276 FIBREOPTIC COLONOSCOPY. *(E.)* Fox, J. A. (Edgeware Gen. Hosp. Middlesex, England), L. Provenzale and A. Revignas. *Lancet* 2(7663):107, 1970.

7277 ENDOSCOPY IN GASTRIC CANCER. *(E.)* Nelson, R. S. (U. Texas M.D. Anderson Hosp., Houston). *Recent Results Cancer Res* 32:1-85, 1970.

7278 NEW DIAGNOSTIC METHOD FOR THE POSTOPERATIVE DISORDERS OF INTESTINE. *(E.)* Saito, K. (Daiichi Hosp., Japan) and S. Kanauchi. *Bull Soc Int Chir* 29(2):121-124, 1970.

7279 THE USE OF CYST ANTIGEN IN THE SERODIAGNOSIS OF AMEBIASIS. *(E.)* Yap, E. H. (Fac. Med. U. Singapore), V. Zaman and S. E. Aw. *Bull WHO* 42(4):553-561, 1970.

7280 ESOPHAGEAL MOTILITY. *(E.)* Rosenow, E. C., III (Mayo Clin., Rochester, Minn.). *Med Clin N Amer* 54(4):863-873, 1970.

7281 JEJUNAL BIOPSY. *(E.)* McPherson, J. R. (Mayo Clin., Rochester, Minn.). *Med Clin N Amer* 54(4):851-862, 1970.

7282 SEROLOGICAL DIAGNOSIS OF IDIOPATHIC DYSENTERY USING THE BACTERIAL HEMAGGLUTINATION TEST: I. RESULTS OBTAINED ON HEALTHY SUBJECTS. *(Rus.)* Safonova, N. V. (Pasteur Epidemiol. Inst. Leningrad, USSR.). *Tr Leningr Inst Epidem Mikrobiol Paster* 36:167-172, 1970.

7283 CARBOHYDRATE TOLERANCE TESTS AND DETERMINATION OF LACTASE ACTIVITY IN THE SMALL INTESTINAL MUCOSA FOR FUNCTIONAL INVESTIGATION OF THE SMALL INTESTINE. *(Rus.)* Levin, A. A. (Leningrad Med. Inst., Leningrad, USSR) *Lab Delo* (6):354-357, 1970.

7284 CYTOLOGY IN THE DIAGNOSIS OF GASTRIC DISEASES. *(Rus.)* Rapoport, S. I. (All-Union Scientific Research Inst. Gastroenterology, Moscow, USSR). *Lab Delo* (6):347-350, 1970.

7285 PANCREATIC SECRETION IN THE DIAGNOSIS OF CHRONIC PANCREATIC DISEASES: COMPARISON OF VARIOUS SECRETORY STIMULANTS. *(Rus.)* Tuzhilin, S. A. (I. M. Sechenoy Med. Inst., Moscow, USSR). A. I. Saluenya, N. A. Makarova and V. I. Sokolov. *Lab Delo* (6):342-347, 1970.

7286 LAPAROSCOPIC X-RAY-TELEVISION CHOLECYSTOCHOLANGIOGRAPHY. *(Rus.)* Milonov, O. B. (Scient. Research Inst. Clin. and Experim. Surgery, Moscow, USSR), R. Kh. Vasiliev and R. A. Sukhomlina. *Khirurgiia* 46(6):107-114, 1970.

7287 THE FLUORESCENT ANTIBODIES USED FOR THE DIAGNOSIS OF COLIENTERITIS IN INFANTS. *(Rus.)* Kariagina, E. I. (Pasteur Pediatric Hosp. Infectious Diseases, Leningrad, USSR), V. B. Lazurkina and N. P. Davydova. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:259-269, 1970.

7288 X-RAY DIAGNOSIS OF "THORACIC STOMACH" *(Rus.)* Mochulsky, A. S. (no affil), A. K. Sherstnev and E. A. Druzhinin. *Klin Med* 48(6):140-

7289 THE X-RAY DIAGNOSIS OF TUMORS OF THE SMALL INTESTINE. *(Rus.)* Tretyakova, T. A. (Botkin Hosp., Moscow, USSR), N. N. Braitseva and V. I. Yakushin. *Klin Med* 48(6):91-95, 1970.

7290 INFUSION CHOLECYSTOCHOLANGIOGRAPHY: ADVANTAGES AND SHORTCOMINGS. *(Rus.)* Sharov, B. K. (Cheliabinsk Med. Inst., Cheliabinsk, USSR) and I. D. Rostovtseva. *Klin Med* 48(6):143-146, 1970.

7291 DIFFERENTIAL DIAGNOSIS OF GASTROINTESTINAL HEMORRHAGES. *(Rus.)* Pevzner, I. S. (Polotsk, USSR) and G. I. Pevzner. *Klin Med* 48(6):146-149, 1970.

2 PREOPERATIVE DIAGNOSIS OF CHOLEDOCHAL CYST BY HEPATOSCINTOGRAPHY. *(E.)* Darling, D. B. w England Med. Ctr. Hosp., Boston, Mass.), L. E. liams, J. H. Fisher and R. A. Courtney. *New Eng ed* 283(2):85-86, 1970.

3 RADIOISOTOPE SCANNING OF THE PANCREAS. *(E.)* McGill, D. B. (Mayo Clin., Rochester, n.) and W. N. Tauxe. *Med Clin N Amer* 54(4):881- , 1970.

TECHNIQUE OF FLEXIBLE FIBERSIGMOIDOSCOPY. *(E.)* Overholt, B. F. (U. Tennessee Mem. . Ctr. Hosp., Knoxville). *Southern Med J* 7):787-789, 1970.

- D:Stomduo (7321)(7324)(7369)
- D:Stomduo:Peptulc (7406)(7408)(7409)
- D:L.Intest (7462)(7468)(7472)
- D:Pancreas:Pancreat (7520)(7521)
- D:Livbil (7530)(7538)(7567)
- D:Livbil:Cirrh (7635)
- D:Livbil:Gallb (7651)(7662)
- D:Gen:Parasit (7753)

GASTROINTESTINAL DISEASES

ESOPHAGUS

7295 POST-VAGOTOMY DYSPHAGIA. *(E.)* Edwards, D. A. W. (U. Coll. Hosp. Med. Sch., London, England). *Lancet* 2(7663):90-92, 1970.

Eight patients with post-vagotomy dysphagia were examined by radiology, esophagoscopy, and manometry. Symptoms began most commonly 7 to 14 days after operation and tended to come on abruptly. Attempts at eating or drinking commonly provoked pain within seconds of swallowing and pain continued until the bolus had either passed into the stomach or was regurgitated. Spontaneous improvement occurred after 3 weeks to 3 months. The characteristic radiological appearance of the esophagus with the patient standing after drinking barium was superficially similar to that seen in achalasia, that is, as a long stricture. By fluoroscopic monitoring of the course of a bolus swallowed in the 10° head-down position, the peristaltic wave was demonstrated in the body of the esophagus in the 7 patients screened and the maximum bore of the channel correlated with the severity of symptoms. In all patients, the lining of the lumen had a smooth surface without any suggestion of mucosal damage with esophagoscopy even when the lumen was firmly closed and the appearance of the mucosa was not compatible with the changes of post-intubation esophagitis. A manometric examination of the esophagastric junction in 3 patients revealed that innervation mediating both relaxation and contraction was intact and the muscle responded normally.

7296 THE JEJUNAL INTERPOSITION OPERATION: A FOLLOW-UP ON SEVENTEEN PATIENTS FOLLOWED 10 TO 17 YEARS. *(E.)* Moylan, J. P., Jr. (Brook Army Med. Ctr., Fort Sam Houston, Texas), J. W. Bell, J. R. Cantrell and K. A. Merendino. *Ann Surg* 172(2): 205-211, 1970.

A group of 17 patients (13 peptic esophagitis and stricture with or without hiatal hernia, 2 cardiospasm, 1 reflux esophagitis, 1 esophageal varices) who had been followed from 10 to 17 yr since having the jejunal interposition operation were reviewed. Because of dysphagia prior to the jejunal interposition operation, the entire group was limited to a soft or liquid diet, taken at various times during the day or night. Now 13 of the 16 patients had normal swallowing and ate regular diets in a normal pattern of 3 meals a day; the remaining 3 had slow but adequate deglutition. Dyspepsia, a significant pre-operative problem, was rarely experienced by most patients. Four of 6 patients who underwent esophageal fluoroscopy were not experiencing any difficulty, while the remaining 2 had slow but satisfactory swallowing, decreased jejunal peristalsis and poor tone. In all patients the barium bolus was forced in both directions at the esophago-jejunal junction and at the jejunogastric anastomosis when gastric contractions were noted; backward movement of the bolus was at maximum 8 cm. The jejunal interposition operation appears to have value because it represents a direct approach to the primary surgical need and gastro intestinal continuity is restored in a normal sequence.

7297 MUCIN BIOSYNTHESIS BY CHICK AND HUMAN ESOPHAGUS DURING ONTOGENETIC METAPLASIA. *(E.)* Mottet, N. K. (U. Washington Sch. Med., Seattle). *J Anat* 107(1):49-66, 1970.

7298 REPEATED OPERATIONS OF THE ESOPHAGUS. *(Rus.* Filin, V. I. (I. I. Dzhanelidze Sci. Res. Inst. Emergency, Leningrad, USSR). *Khirurgiia* 46(3):30-35, 1970.

7299 REPEATED OPERATIONS IN FUNCTIONAL OBSTRUCTION OF THE CARDIA. *(Rus.)* Kukosh, V. I. (S. M. Kirov Med. Inst., Gorkiy, USSR) and A. A. Chernyavskiy. *Khirurgiia* 46(3):25-30, 1970.

7300 BLOOD SUPPLY OF THE MOBILIZED ESOPHAGUS AND ITS MUCOUS MEMBRANE AFTER DEMUCOSATION *(Rus.)* Reshetov, A. I. (S. M. Kirov Academy Militar Med., USSR) and P. N. Zubarev. *Vestn Khir* 104(1):35 39, 1970.

7301 ULCERATION ASSOCIATED WITH AN ISLET OF COLUMNAR EPITHELIUM IN THE MID-ESOPHAGUS: NEW EVIDENCE FOR AN ACQUIRED ETIOLOGY OF BARRETT'S SYNDROME. *(E.)* Hanson, E. L. (New York U. Med. Ctr. New York), J. F. Daly and D. A. Davis. *J Pediat Surg* 5(3):370-375, 1970.

7302 ESOPHAGO-CARDIAC FISTULA: A FISTULA BETWEE HEART AND ESOPHAGUS AS CAUSATIVE AGENT IN THE DEVELOPMENT OF EMBOLIC MENINGO-ENCEPHALITIS. *(E.* Hojgaard, K. (Bispebjerg Hosp., Copenhagen, Denmark) and T. Raaschou-Nielson. *Acta Path Microbiol Scand* (suppl. 212):114-116, 1970.

7303 SPLENECTOMY AND SPLENORENAL SHUNT FOR HYPE SPLENISM AND BLEEDING ESOPHAGEAL VARICES. *(E.)* Mays, E. T. (U. Louisville Sch. Med., Kentuck and S. D. Weakley. *J Kentucky Med Ass* 68(8):507-51 1970.

7304 RECONSTRUCTION OF THE CERVICAL ESOPHAGUS VIA GASTRIC ANASTOMOSIS. *(E.)* Leonard, J. R. (Jefferson Hosp., Philadelphia, Pa.) and A. G. D. Maran. *Laryngoscope* 80(6):849-862, 1970.

7305 RECONSTRUCTION OF THE CERVICAL ESOPHAGUS. *(E.)* Woods, J. E. (Peter Bent Brigham Hosp., Boston, Mass.) and J. E. Murray. *Plast Reconstr Surg* 46(1):43-49, 1970.

7306 SURGICAL TREATMENT OF REFLUX ESOPHAGITIS AND STRICTURE ASSOCIATED WITH PERMANENT INCOMPETENCE OF THE CARDIA. *(E.)* Payne, W. S. (Mayo Clin., Rochester, Minn.). *Mayo Clin Proc* 45(8):553-562, 1970.

7307 THE LOWER ESOPHAGEAL RING: A SOURCE OF DYSPHAGIA. *(E.)* Rogers, L. R. (U. Texas Med. Sch., San Antonio). *Tex Med* 66(6):72-77, 1970.

7308 TOTAL OBLITERATION OF ESOPHAGUS AND HYPOPHARYNX DUE TO CORROSIVES: A NEW TECHNIQUE OF RECONSTRUCTION. *(E.)* Gupta, S. (Inst. Postgrad. Med. Educ. Res., Calcutta, India). *J Thor Cardiovasc Surg* 60(2):264-268, 1970.

7309 PARENTERAL NUTRITION AND ESOPHAGEAL ANASTOMOTIC LEAK. *(E.)* Leape, L. L. (U. Kansas Med. Ctr., Kansas City), K. W. Ashcraft and T. M. Holder. *Arch Surg* 101(3):436-437, 1970.

7310 GASTROTOMY WITH DOUBLE GASTROSTOMY IN THE PERFORATION OF THE ESOPHAGUS. *(E.)* Shor-Pinsker, E. (Ctr. Med. Natl., IMSS, Mexico City, Mexico), A. Silva-Cuevas, R. Franco-Vazquez, L. Pedroza-Martinez and M. De Lachica Mere. *Arch Surg* 101(3):433-435, 1970.

7311 THE LEFT COLON AS ESOPHAGEAL REPLACEMENT. *(E.)* Ponce, L. C. (VA Hosp. Poplar Bluff, Mo.) and D. E. Tribble. *J Abdom Surg* 12(8):143-145, 1970.

7312 POSTPNEUMONECTOMY ESOPHAGEAL FISTULA: SUCCESSFUL ONE-STAGE REPAIR. *(E.)* Engelman, R. M. (New York U. Med. Ctr., New York), F. C. Spencer and P. Berg. *J Thor Cardiovasc Surg* 59(6):871-876, 1970.

7313 SPONTANEOUS RUPTURE OF THE ESOPHAGUS. *(Nor.)* Blichert-Toft, M. (Copenhagen Hosp., Hellerup, Denmark). *Nord Med* 84(28):881-886, 1970.

7314 BENIGN NEOPLASMS OF THE ESOPHAGUS. *(Nor.)* Ekroll, T. (Telemark Central Hosp., Norway). *T Norsk Laegforen* 90(13):1400-1402, 1970.

7315 ANESTHESIA IN TRANSPLEURAL OPERATIONS FOR CANCER OF THE ESOPHAGUS. *(Rus.)* Makarenko, T. P. (Central Inst. Postgrad. Med., Moscow, USSR) and N. N. Rasstrigin. *Khirurgiia* 46(5):14-20, 1970.

7316 DIAGNOSIS AND CHOICE OF TREATMENT OF HIATAL HERNIA. *(Rus.)* Gilevich, Yu. S., (Stavropol Med. Inst., Stauropol, USSR) and I. S. Budilin. *Klin Khir* (4):76-80, 1970.

7317 CIRCULATORY DISORDERS IN SMALL INTESTINE TRANSPLANTS DURING ESOPHAGOPLASTY. *(Rus.)* Kukharenko, E. I. (Kharkov Sci. Res. Inst. General 8 Emergency Surgery, Kharkov, USSR) *Klin Khir* (4):35-40, 1970.

7318 PEPTIC ULCER OF AUTOPLASTIC ESOPHAGUS. *(Rus.)* Rogacheva, V. S. (Tomsk Med. Inst., Tomsk, USSR) and P. D. Fomin. *Khirurgiia* 46(6):135-136, 1970.

7319 CHRONIC GRANULOMATOUS DISEASE. *(E.)* Sutcliffe, J. (Hosp. Sick Child., London, England). *Ann Radiol* 13(3-4):305-310, 1970.

D:Esoph

- Diagproc (7229)(7232)(7237)(7280)
- D:Stomduo (7360)
- D:Livbil:Cirrh (7639)
- D:Gen (7704)(7727)

STOMACH AND DUODENUM

7320 ULTRASTRUCTURE OF THE GASTRIC MUCOSA IN PATIENTS WITH ATROPHIC GASTRITIS AND PERNICIOUS ANEMIA. *(E.)* Weisberg, H. (New York Med. Coll., Flower-Fifth Avenue Hosp., New York) and S. F. Chiao. *Gastroenterology* 59(1):36-45, 1970.

The ultrastructure of the gastric mucosa in patients with atrophic gastritis (4) and pernicious anemia (3) was studied by electron microscopy. All gastric mucosal cell types in these specimens showed great variation in their ultrastructural appearance; however, no specific changes could be detected in the parietal cells, zymogen cells, mucous, or argentaffin cells of patients with atrophic gastritis and pernicious anemia which were not present in normals. Departures from the frequently described typical appearance of these cells included mitochondrial vacuolization, distribution of dense bodies of varying size, shape and density throughout the cytoplasm, apparent irregularity or absence of membranes, dilated endoplasmic reticulum and clumped nuclear chromatin. While infiltration of the lamina propria by wandering cells was more extensive in atrophic gastritis patients than in normal subjects and patients with gastric atrophy, there was no evidence of structural damage to glandular cells by wandering cells. The number of parietal cells and zymogen cells were decreased in patients with atrophic gastritis and were entirely absent in 2 patients with gastric atrophy. The gradual disappearance of parietal and zymogen cells from the gastric mucosa may be due either to the more rapid destruction of these cells by normal mechanisms, to a delay in their maturation and differentiation, or to a combination of these.

7321 DUODENITIS. *(Fr.)* Cheli, R. (Inst. Clin. Med., U. Genoa, Italy). *Acta Gastroent Belg* 33(2):110-119, 1970.

Duodenal biopsy revealed duodenitis in 66 out of 170 patients with dyspepsia, in 17 out of 52 patients with biliary tract diseases (cholecystitis, cholelithiasis), in 3 out of 11 patients with infectious hepatitis, in 8 out of 14 patients with chronic pancreatitis and in 2 out of 3 patients with lambliasis. Three cases of moderate duodenitis were detected among 52 subjects of the control group while 3 patients with duodenal diverticulosis and 42 with lower intestinal tract diseases (hemorrhagic rectocolitis, regional enteritis, amebic colitis, functional colon disorders, hemorrhoidal anorectitis) had a normal duodenal mucosa. Histologically, 3 varieties of duodenitis were established: superficial duodenitis, which occurred most frequently (54%) and was limited to the villous level; atrophic duodenitis (40%), where the inflammatory process extended to the whole bulk of the mucosa with marked alterations of the crypts of Lieberkühn; and interstitial duodenitis (6%), characterized by isolated infiltrations into the interstitial spaces around the lamina muscularis mucosae. Correlations between duodenitis and ulcers were indefinite since the inflammation of the mucosa was usually limited to the ulcerous region. Histological findings were confirmed by radiology in 83% of the patients.

7322 GROWTH HORMONE RESPONSE TO GASTRECTOMY. *(E.)* Mimura, T. (Sch. Med. Keio U., Tokyo, Japan), T. Akamatsu, S. Kodaira, M. Maruta and M. Uekusa. *Keio J Med* 18(4):229-236, 1969.

Plasma growth hormone levels (quantitation by a modification of the method of Schalch and Parker), blood sugar levels, and nonesterified fatty acid levels were determined in 34 patients with either peptic ulcer or gastric cancer before, during, and after gastrectomy. Plasma human growth hormone levels (ng/ml) averaged 2.82 on the morning of the operation, rose to 30.0 at 60 min after the commencement of surgery, and gradually declined to the preoperative levels after 4 to 6 hr. Peak levels of patients with cancer were higher (33) than those of patients with ulcers (28); peak levels of patients below 40 yr of age reached a maximum (23) 60 min after commencement of surgery and remained high for 2 hr while peak levels of patients over 60 reached a maximum (23) and immediately declined to preoperative levels. The sex of the patient apparently did not produce any significant differences. Obese subjects (10% over the standard weight as defined by Broca) showed a rapid growth hormone response peaking 15 min after the start of surgery while lean subjects exhibited peak levels after 60 min. Magnitude of surgical stress (1 hr vs 3 hr surgery) resulted in no marked differences in peak levels and recovery tendencies in both groups were similar. Intraoperative infusion of either 5% glucose or lactated Ringer's solution produced no significant differences in the growth hormone response curve. However, the plasma non-esterified fatty acid fluctuation which varied with the type of infusion corresponded to the changes in growth hormone levels, suggesting an involvement of the latter in fat metabolism.

7323 ACTION OF PSYCHOTROPIC SUBSTANCES ON CERTAIN EXPERIMENTAL GASTRIC VASOMOTOR REACTIONS: DIENCEPHALIC FUNCTIONS AND GASTRIC PATHOLOGY. *(Fr.)* Bel, A. (Red Cross Hosp., Lyon, France), J. Nesmoz and C. Trepo. *Sem Hop Paris* 46(29):1-6, 1970.

The protective action of sulpiride on gastric mucosa against polymyxin B-induced ulcerations was studied in 120 female rats. Polymyxin B (1.5 mg/kg i.p.) was given 30 min after s.c. administration of saline in control groups, thioproperazine (5 mg/kg) in the reference group, or sulpiride (15, 30 or 60 mg/kg) in the treated groups. The mortality rate in the control animals was 87% and only 30 to 35% in the treated and reference groups with no significant differences in mortality rate between the different dosages of sulpiride. Early gastric lesions appeared in all control animals while 30 to 40% of the 15 and 30 mg/kg treated groups and 70% of the 60 mg/kg treated group were free of lesions. The protective action of sulpiride, which has no antihistaminic or antiserotonin effects, is attributed to a central nervous system process generated by the hypothalamus which may be direct or mediated by metabolic processes of cerebral amines.

7324 EXPERIENCE WITH AUGMENTED HISTALOG GASTRIC ANALYSIS. *(E.)* Burney, S. W. (VA Outpatient Clin., Boston, Mass.), J. R. Ross, O. Kusakcioglu and M. Sultan. *Lahey Clin Found Bull* 19(3):93-102, 1970.

Maximal histalog gastric stimulation was evaluated in 56 patients with known gastrointestinal diseases (17 men and 7 women with active or inactive duodenal ulcer 5 men with active stomal ulcers, 1 man and 1 woman with asymptomatic postgastrectomy, 2 men with stomach carcinoma, 5 men and 3 women with various intestinal complaints without evidence of ulcers, and 3 women with gastric ulcers). The mean maximal acid output values in mEq HCL/hr were as follows: duodenal ulcer, men 36.5, women 23.7; gastric ulcer, men 11.0, women 17.1; stomal ulcer, men 17.1; esophagitis, men 33.8, women 20.6; carcinoma, men 4.8; dyspepsia, men 15.4, women 10.9. Of 58 examinations, 44 (76%) were satisfactory, and 14 (24%) were unsatisfactory due to insufficient volume and/or contamination with bile. When adequate specimens were submitted, correlation between maximal stimulation of parietal cell mass (maximal acid output) and clinical impression was high enough to make the test a valuable supplement to a complete gastric review.

7325 USE OF SULPIRIDE IN ORGANIC AND FUNCTIONAL DIGESTIVE DISEASES. *(Fr.)*

Geoffroy, H. (C. H. U. Reims, France), S. Bajolet, P. Coudoux, J. P. Brunois, P. Chardon, C. Behar, M. Dalle and B. Deroche. *Sem Hop Paris* 46(29):23-29, 1970.

Sulpiride, (a new psychotropic drug), was given i.m. (300 mg daily) to 27 patients with gastroduodenal ulcers, 13 patients with gastritis or duodenitis and to 10 patients with neurovegetative disorders. Pain and vomiting disappeared within 3 to 5 days in all cases, and noncallous ulcers revealed considerable improvement within 20 days according to radiological and endoscopical findings, while certain ameliorations occurred in cases of ulcer complications (peritoneal involvement, perforations, or hemorrhage). Clinical improvement in gastritis and duodenitis with alcoholic, smoking, iatrogenic or bile reflux etiology or due to hiatal hernia were confirmed by gastroscopy. Favorable results were obtained in neurovegetative disorders as well, and good hematologic and renal tolerance of the drug with no side effects was ascertained.

7326 SPONTANEOUS CLOSURE OF TRAUMATIC PANCREATODUODENAL FISTULAS WITH TOTAL INTRAVENOUS NUTRITION. *(E.)*

Dudrick, S. J. (Hosp. U. Pennsylvania, Philadelphia), D. M. Wilmore, E. Steiger, J. A. Mackie and W. T. Fitts, Jr. *J Trauma* 10(7):542-553, 1970.

The use of intravenous hyperalimentation in 3 patients with severe abdominal trauma, complicated by pancreato-duodenal fistula formation was investigated. The base nutrient mixture was a hypertonic solution consisting of approximately 20% glucose, 4% protein hydrolysate, and containing 5.25-6.0 g nitrogen and 900-1000 calories/1. Electrolytes, essential vitamins and micronutrients were added as indicated or desired. Prevention of infection or sepsis and hyperosmolar nonketotic hyperglycemia were maintained during patient management. In each of the 3 patients, the clinical course greatly improved within 1-2 days following the initiation of parenteral hyperalimentation. Secretions were sharply reduced initially, and gradually ceased with spontaneous wound healing and fistula closure. Significant weight gain occurred in all 3 patients despite the hypermetabolism associated with fever.

7327 EFFECT OF GRADED DOSES OF PENTAGASTRIN IN PATIENTS WITH AND WITHOUT GASTRITIS. *(E.)*

Berstad, A. (Ullevaal Hosp., Oslo, Norway) and J. Myren. *Gut* 11(4):299-302, 1970.

The effect of graded doses of pentagastrin on the gastric secretion of acid was studied in patients with and without gastritis. In patients with and without gastritis the maximal output of HCl following 0.3 μg/kg/hr of pentagastrin was 85 and 66%, resp., of the maximal response to 7.5 μg/kg/hr; the difference was significant only in the gastritis patients. In patients with and without a normal gastric mucosa, the maximal HCl response following 1.5 μg/kg/hr of pentagastrin was 102 and 91%, resp., of the response to 7.5 μg/kg/hr. The gastric mucosa with a severely reduced number of scattered parietal cells apparently needs a higher dose of pentagastrin or an infusion for more than 45-75 min to obtain a maximal HCl response.

7328 EFFECT OF ALKYLBENZENESULFONATE AS A VEHICLE FOR 4-NITROQUINOLINE-1-OXIDE ON GASTRIC CARCINOGENESIS IN RATS. *(E.)*

Takahashi, M. (Med. Sch. Nagoya City U., Japan). *Gann* 61(1): 27-33, 1970.

The effect of alkylbenzenesulfonate as a vehicle for 4-nitroquinoline-1-oxide on gastric carcinogenesis was studied in rats. Rats were divided into groups which were given (by esophageal intubation) 1 mg of 4-nitroquinoline-1-oxide in 1 ml of 20% ethanol with 8% alkylbenzenesulfonate 2-3 times a week for 18 weeks, or the same dose in 1 ml of 20% ethanol alone, or 1 ml of 20% ethanol with 8% alkylbenzenesulfonate without 4-nitroquinoline-1-oxide for controls. No neoplasms of the stomach or other organs were seen in the controls. Of 15 treated animals in the first group, 2 adenocarcinoma, 1 hemangiosarcoma, 1 hemangioma, 2 atrophic gastritis, multiple sarcomas of the forestomach, 5 squamous cell carcinomas, and 2 giant squamous cell papillomas were found. In the group with the carcinogen without the surfactant, only benign papillomas of the forestomach were found in 9 rats and 1 case of liver sarcoma was found. The surfactant, alkylbenzene sulfonate appeared to increase the carcinogenicity of 4-nitroquinoline-1-oxide.

7329 GASTRIC MUCOSA IN IRON DEFICIENCY ANEMIA: RESULTS OF FOLLOW-UP EXAMINATION. *(E.)*

Ikkala, E. (2nd Dept. Med., U. Helsinki, Finland), H. J. Salmi and M. Siurala. *Acta Haemat* 43(4): 228-231, 1970.

Gastric mucosa biopsy findings were examined in a 7-year follow-up study in 48 patients with iron deficiency anemia. Thirty of 48 patients had had one or more anemic episodes and one had received iron medication regularly. Normal hemoglobin values were found in only 13 patients; no examination was performed in remaining 5 patients. Anemic episodes had been present in 6 of 14 patients with atrophic gastritis and in 7 of 9 patients with normal gastric mucosa at first examination. The present examination showed 19 patients were non-sideropenic, while 12 had distinct iron deficiency anemia and 17 sideropenia with hemoglobin levels over 12 g/100 ml; occurrence of anemia did not correlate with biopsy findings of the first examinations. During the follow-up period, the state of gastric mucosa had improved in 3 patients, progressed in 12, and remained unchanged in 33. Anemic episodes were more prevalent in patients showing a progression of gastritis than in those who improved. The occurrence of atrophic gastritis at present examination showed a clear correlation with the age of the patients: normal gastric mucosa patients had a median age of 39 years (22-59 years), median age of patients with superficial gastritis was 39 years (25-57 years), and median age for atrophic gastritis patients was 56 years (31-77 years). Iron deficiency seemingly predisposes alterations of gastric mucosa.

7330 CARCINOGENICITY OF FORMIC ACID 2-[4-(5-NITRO-2-FURYL)-2-THIAZOLYL]HYDRAZIDE. *(E.)* Cohen, S. M. (U. Wisconsin Med. Sch., Madison), E. Erturk and G. T. Bryan. *Cancer Res* 30(4):906-912, 1970.

7331 INHIBITION OF GASTRIC SECRETION BY A NEW PARASYMPATHOLYTIC DRUG (KETOSCILIUM) IN MAN. *(It.)* Lodola, E. (Zambon Res. Lab., Milan, Italy). *Minerva Gastroent* 16(2):99-103, 1970.

7332 ACUTE ULCER AND EROSIONS OF THE STOMACH IN A PATIENT WITH ISCHEMIC DISEASE OF THE SPINAL CORD. *(Rus.)* Klyuchikov, V. N. (Yaroslav Med. Inst., Yaroslav, USSR) and A. M. Bulanov. *Klin Med* 48(1):138-139, 1970.

7333 PROPHYLAXIS OF MOTILITY ALTERATIONS FOLLOWING STOMACH RESECTION. *(Rus.)* Masumov, S. A. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):13-16, 1970.

7334 FUNCTIONAL AND MORPHOLOGICAL CHANGES OF THE DUODENAL MUCOSA IN DUODENAL STASIS. *(Rus.)* Mirzaev, A. P. (Leningrad Med. Inst. Hygiene, Leningrad, USSR) and V. N. Levin. *Vestn Khir* 104(2):53-56, 1970.

7335 TREATMENT OF CHEMICAL GASTRIC BURNS IN SURGICAL PRACTICE. *(Rus.)* Volchek, V. M. (Kalinin Med. Inst., Kalinin, USSR) and A. E. Novoseltsev. *Sovet Med* 33(5):85-88, 1970.

7336 ASPIRIN AND GASTRIC HEMORRHAGE. *(Rus.)* Vasilenko, V. Kh. (All-Union Sci. Research Inst. Gastroenterology, Moscow, USSR) and G. V. Tsodikov. *Klin Med* 48(6):18-26, 1970.

7337 POLYPOSIS OF THE STOMACH: CURRENT STATE OF THE PROBLEM. *(Rus.)* Vodolagin, V. D. (First Med. Inst., Moscow, USSR). *Klin Med* 48(6): 26-31, 1970.

7338 THE FUNCTION OF THE INTESTINAL GRAFT AND GASTRIC STUMP AFTER GASTROJEJUNOPLASTY. *(Rus.)* Babuli, R. (A. V. Vishnevski Inst. Surgery, Acad. Med. Sci. USSR). *Klin Med* 48(6):86-91, 1970.

7339 CLOSURE OF THE DUODENAL STUMP DURING GASTRIC RESECTION FOR BLEEDING DUODENAL ULCERS. *(Rus.)* Kholiavko, V. K. (Kirovograd County Hosp., Kirovograd, USSR). *Klin Khir* (5):26-29, 1970.

7340 MORPHOLOGICAL STUDIES OF THE LIVER IN GASTRIC CANCER. *(Rus.)* Burtsev, A. N. (Donets Med. Inst., Donets, USSR). *Klin Khir* (4): 60-63, 1970.

7341 TECHNIQUE OF GASTRECTOMY WITH GASTRODUODENAL ANASTOMOSIS (BILROTH I). *(Por.)* Asseff, J. S. (San Paulo, Brazil). *Hospital* 77(3): 755-764, 1970.

7342 DEVELOPMENT OF CANCER OF THE STOMACH: A RETROSPECTIVE ASSESSMENT OF CLINICAL OBSERVATIONS. *(Fr.)* Kawai, K. (Kyoto, Japan), Y. Kohli, F. Misaki and Y. Murakami. *Ann Gastroent Hepatol* 6(3):217-223, 1970.

7343 TRAUMATIC INTRAMURAL HEMATOMA OF THE DUODENUM. *(Nor.)* Madsen, B. (Commun. Hosp., Aarhus, Denmark) and H. Skjoldborg. *Ugeskr Laeg* 132(25):1188-1190, 1970.

7344 HISTOLOGICAL CLASSIFICATION OF GASTRIC CARCINOMA. *(E.)* Tanaka, N. (Japan Red Cross Central Hosp., Tokyo). *Gann* 61(2):93-103, 1970.

7345 COLLAGENOLYTIC ACTIVITY IN HUMAN GASTRITIS. *(Jap.)* Honya, M. (Inst. Constitutional Med., Kumamoto U., Japan) and G. Usuku. *Med Biol* 80(6):277-280, 1970.

7346 COLLAGENOLYTIC ACTIVITY IN THE NORMAL STOMACH, GASTRIC ULCER AND CANCER IN MAN. *(Jap.)* Honya, M. (Inst. Constitutional Med., Kumamoto U., Japan). *Med Biol* 80(6):273-275, 1970.

7347 PLASMACYTOMA OF THE STOMACH: ANATOMO-CLINICAL CONSIDERATIONS. *(It.)* Rossi, G. N. (Greater Hosp. Bergamo, Italy) and G. Nicolo. *Minerva Chir* 25(13):960-970, 1970.

7348 A CASE OF MENETRIER'S DISEASE. *(It.)* Visintini, E. (Dept. Surg., U. Trieste, Italy), P. A. Fantoni and L. A. Marin. *Chir Gastroent* 4(2):195-201, 1970.

7349 SULPIRIDE IN NEUROSURGICAL RESUSCITATION AND IN INTERNAL MEDICINE: PREVENTION OF CORTICOSTEROID INDUCED ULCERS. *(Fr.)* Dureaux, J. B. (Hosp. Maringer, Nancy, France) and B. Kiffer. *Sem Hop* 46(9):30-33, 1970.

7350 EXPERIMENTAL USE OF METHYLURACIL IN GASTRIC RESECTION. *(Rus.)* Rusakov, V. I. (Rostov Med. Inst., Rostov, USSR) and Kh. K. Vishagurov. *Eksp Khir Anest* 15(1):22-27, 1970.

7351 DISORDERS OF THE PANCREAS IN CHRONIC GASTRITIS IN CHILDREN. *(Rus.)* Shamsiyev, S. Sh. (Tashkent Med. Inst., Tashkent, USSR) and L. V. Klimenskaya. *Pediatriia* 49(2):64-67, 1970.

7352 RADIOLOGICAL AND FUNCTIONAL CONDITION OF THE STOMACH AT REMOTE PERIODS AFTER RESECTION WITH JEJUNAL HOMOGRAFT. *(Rus.)* Kradinov, A. I. (Crimean Med. Inst., Simferopol, USSR). *Vestn Rentgen Radiol* 45(1):7-13, 1970.

7353 1255 HEMIGASTRECTOMIES ASSOCIATED WITH VAGOTOMY. *(Rus.)* Norkunas, P. I. (V. Kapsukas University, Vilnius, USSR.) and E. P. Norkus. *Vestn Khir* 104(1):73-77, 1970.

7354 DUPLICATION OF THE PYLORUS IN THE NEWBORN: A RARE CAUSE OF GASTRIC OUTLET OBSTRUCTION. *(E.)* Grosfeld, J. L. (Child. Hosp., Columbus, O.), E. T. Boles, Jr. and C. Reiner. *J Pediat Surg* 5(3):365-369, 1970.

7355 DUPLICATION OF THE STOMACH. *(E.)* Kremer, R. M. (Case Western Reserve U. Sch. Med., Cleveland, O.), R. B. Lepoff and R. J. Izant, Jr. *J Pediat Surg* 5(3):360-364, 1970.

7356 RECURRENCE OF GASTRIC CANCER IN THE DUODENAL STEMP. *(Rus.)* Sagaidek, V. N. (Inst. Experim & Clin. Oncology, Acad. Med. Sci., USSR). *Klin Med* 48(6):83-85, 1970.

7357 CICATRISING LESIONS OF THE STOMACH FOLLOWING INGESTION OF CORROSIVES. *(E.)* Singh, B. (Med. Coll., Amritsar, India), R. S. Sethi, S. K. Gupta and O. P. Thaman. *Indian J Surg* 32(4):180-185, 1970.

7358 DUODENAL STUMP CLOSURE USING OX FASCIA. *(E.)* Sobel, S. H. (VA Hosp., Togus, Maine), S. E. Schwartz and P. Cooper. *J Maine Med Ass* 61(7):145-148, 1970.

7359 CHRONIC DUODENAL OBSTRUCTION. *(E.)* French, W. E. (U. Tennessee Coll. Med., Memphis). *Amer J Surg* 120(1):23-26, 1970.

7360 PALLIATIVE ESOPHAGOGASTROSTOMY FOR INOPERABLE CARCINOMA OF THE ESOPHAGOGASTRIC JUNCTION. *(E.)* Johnson, C. L. (Mayo Grad. Sch. Surg., Rochester, Minn.) and O. T. Clagett. *J Thor Cardiovasc Surg* 60(2):269-274, 1970.

7361 GASTRIC ANTHRAX WITH MASSIVE ASCITES. *(E.)* Dutz, W. (Dept. Surg., Pahlavi U., Shiraz, Iran), F. Saidi and E. Kohout. *Gut* 11(4):352-354, 1970.

7362 A TECHNIQUE FOR TREATING SIGNIFICANT GASTROSTOMY LEAKAGE IN INFANTS AND CHILDREN. *(E.)* Wallsh, E. (New York U. Med. Ctr., New York), G. E. Sisler, J. Lynfield, D. A. Davis and F. C. Spencer. *J Pediat Surg* 5(3):376-378, 1970.

7363 CONGENITAL ANOMALIES OF THE DUODENUM, INCLUDING DIVERTICULA. *(Fr.)* Frik, W. (Aix-La-Chapelle, Belgium). *Acta Gastroent Belg* 33(2):100-109, 1970.

7364 RUPTURE OF THE DUODENUM IN BLUNT INJURY OF THE STOMACH. *(Rus.)* Rarenko, A. S. (Krasnodon Central Hosp., Krasnodon, USSR). *Khirurgiia* 46(6):139-141, 1970.

7365 PHLEGMON OF THE STOMACH. *(Rus.)* Ivanova, M. A. (Novgorod Regional Hosp., Novgorod, USSR) and O. I. Belyakov. *Khirurgiia* 46(6):137-138, 1970.

7366 PRESERVATION OF THE VAGUS NERVE IN GASTRECTOMY. *(Rus.)* Masyukova, E. M. (Tomsk Med. Inst., Tomsk, USSR), T. I. Tsekhanovich and I. D. Kolomina. *Khirurgiia* 46(6):39-43, 1970.

7367 COMPLICATIONS AFTER OPERATIONS ON THE STOMACH IN AGED PATIENTS. *(Rus.)* Leontieva, N. S. (no affil), I. N. Meshalkin and N. N. Ovchininsky. *Khirurgiia* 46(6):46-50, 1970.

7368 TREATMENT OF GASTRIC HEMORRHAGES WITH ARTIFICIALLY-INDUCED HYPOTENSION BY MASSIVE BLOOD TRANSFUSION. *(Rus.)* Pevtsov, I. L. (Kuybyshev Central Hosp., Kuybyshev, USSR). *Khirurgiia* 46(3):64-69, 1970.

7369 GASTROSCOPY AND GASTRIC BIOPSY IN PATIENTS WITH DUMPING SYNDROME. *(Rus.)* Kuzin, M. I. (I. M. Sechenov Med. Inst., Moscow, USSR), L. I. Aruin, L. K. Sokolov, Yu. V. Vasiliev, V. N. Ponomarenko and V. V. Sergeev. *Khirurgiia* 46(3):53-58, 1970.

7370 THE PROTEIN FRACTIONS OF GASTRIC JUICE IN CHRONIC GASTRITIS AND DUODENAL ULCER. *(Rus.)* Makhmidov, A. B. (Uzbek Sci. Research Inst. Med., Uzbekistan, USSR). *Med Zh Uzbek* (4):19-22, 1970.

7371 REPAIR OF GASTROINTESTINAL ANASTOMOSIS IN SUBTOTAL GASTRIC RESECTION. *(Rus.)* Zufarov, K. A. (Tashkent Med. Inst., Tashkent, USSR) and E. M. Baybekova. *Med Zh Uzbek* (4):39-43, 1970.

7372 REPEATED OPERATIONS FOR MALIGNANT ULCER FOLLOWING CLOSURE, GASTROENTEROSTOMY AND GASTRIC RESECTION. *(Rus.)* Bayev, V. K. (Kiev Med. Inst., Kiev, USSR). *Klin Khir* (4):40-44, 1970.

7373 CHANGES OF KIDNEY FUNCTION FOLLOWING GASTRIC RESECTION. *(Rus.)* Khlopov, N. A. (Karaganda Med. Inst., USSR), V. T. Buzayev and P. S. Sychev. *Klin Khir* (2):43-48, 1970.

7374 MORPHOLOGICAL CHARACTERISTICS OF THE GASTRIC MUCOSA IN PATIENTS WITH CHRONIC GASTRITIS. *(Rus.)* Tikhonov, M. K. (Leningrad, USSR) and L. M. Aryev. *Vrach Delo* (2):21-23, 1970.

7375 PHYSICO-CHEMICAL CHARACTERISTICS OF THE GASTRIC JUICE IN PATIENTS WITH ULCER DISEASE AND CHRONIC GASTRITIS. *(Rus.)* Korshunov, A. P. (Dnepropetrovsk Med. Inst., Dnepropetrovsh, USSR). *Vrach Delo* (2):17-20, 1970.

7376 SECRETORY FUNCTION OF THE JEJUNAL GRAFT IN GASTROJEJUNAL AUTOPLASTY. *(Rus.)* Babuli, R. (A. V. Vishnevski Inst. Surgery, Acad. Sci. USSR, Moscow, USSR) and P. G. Karvonidi. *Lab Delo* (6):340-342, 1970.

7377 AGE OF DEATHS FROM CARCINOMA OF THE STOMACH. *(E.)* Duda, K. (Med. Acad. Cracow, Poland) and J. Kowalczyk. *Acta Med Pol* 11(2):187-191, 1970.

7378 DUMPING SYNDROME. *(Fr.)* Ferrier, J. P. (no affil). *Rev Prat* 20(16):2677-2687, 1970.

7379 CHEMOTHERAPY OF GASTRIC CANCER. *(Rus.)* Androsov, N. S. (Inst. Med. Radiol. Acad. Med. Sci., Moscow, USSR) and O. N. Gapaniuk. *Klin Khir* (4):45-49, 1970.

7380 CANCER OF THE STOMACH IN YUGOSLAV MORTALITY STATISTICS FOR 1961-1966. *(Ser.)* Krajinovic, S. (Sch. Med. U. Beograd, Yugoslavia) and S. Ducic. *Srpski Arh Celok Lek* 97(10):1011-1018, 1969.

7381 SUBTOTAL RESECTION OF THE STOMACH ACCORDING TO SPECIAL CONSIDERATION AND PARTIAL RESECTION FOR CANCER. *(Rus.)* Simenkov, V. M. (S. M. Kirov Med. Inst., Leningrad, USSR), V. I. Samokhvalov and D. A. Kazansky. *Khirurgiia* 46(5):52-55, 1970.

7382 RESULTS OF SURGICAL TREATMENT OF CANCER OF THE UPPER REGIONS OF THE STOMACH. *(Rus.)* Kuzin, M. I. (I. M. Sechenov Med. Inst., Moscow, USSR). *Khirurgiia* 46(5):47-52, 1970.

7383 CANCER OF THE STOMACH IN PATIENTS WITH DIABETES MELLITUS. *(Rus.)* Markov, I. N. (Central Inst. Postgrad. Med., Moscow, USSR). *Khirurgiia* 46(5):55-59, 1970.

- P:Morph (7038)
- P:Motil (7082)
- P:Gen (7203)
- Diagproc (7212)(7217)(7222)(7226)(7232)(7234)(7237)(7238)(7240)(7254)(7255)(7256)(7258)(7261)(7262)(7264)(7267)(7268)(7269)(7275)(7277)(7284)(7288)
- D:S.Intest (7407)
- D.Pancreas (7509)
- D:Livbil:A.V.Hep (7616)
- D:Livbil:Cirrh (7639)
- D:Gen (7717)(7727)(7750)

STOMACH AND DUODENUM

Peptic Ulcers

7384 SERUM GASTRIN LEVELS IN PATIENTS WITH PEPTIC ULCER DISEASE. *(E.)* McGuigan, J. E. (U.
'lorida Coll. Med., Gainesville) and W. L. Trudeau.
astroenterology 59(1):6-12, 1970.

'asting serum gastrin levels from 67 patients with
eptic ulcer disease and 102 hospitalized patients
ithout recognized gastrointestinal disease of simi-
ar age and sex distribution were investigated by
adioimmunoassay. Unlike patients with the Zollinger-
llison syndrome, patients with ordinary peptic ulcer
isease were not found to have elevated serum mean
asting gastrin levels when compared to the control
opulation (98 and 165 pg/ml, resp.). The serum
astrin concentrations for patients with gastric
lcers, pyloral-antral ulcers, and duodenal ulcers
ere 126, 118, and 82 pg/ml, resp. Mean fasting
erum gastrin levels in the control population
ncreased with increasing age (20-39 yr; 40-59 yr;
0-75 yr; greater than 80 yr; 52, 118, 213, 518
g/ml, resp.). These changes in fasting serum
astrin levels with increasing age apparently
eflect the effects of achlorhydria (and less com-
lete forms of reduced acid secretion) in removing
he usual inhibition of gastrin release due to
ntral acidification.

385 GASTRODUODENAL PEPTIC ULCER AND ALTITUDE. *(It.)* Estremadoyro Robles, O. (Eriquipa
osp., Peru), A. Salazar Arce and M. Canevaro Valdez.
inerva Gastroent 16(2):51-56, 1970.

ne incidence of peptic ulcer and the ratio between
astric peptic ulcer and duodenal peptic ulcer as
elated to altitude of residence were studied in a
opulation of 420 patients with radiologically and/or
rgically confirmed diagnosis. Altitude was classi-
ed as low (below 1500 m above sea level), medium
500-3000 m above sea level), and high (more than
00 m above sea level). Peptic ulcers occurred most
equently between 20 and 30 years-of-age in the
gh altitude group while its highest incidence was
tween 30 and 40 years-of-age in the low altitude
oup. Complications such as macroscopic hemorrhage,
rforations and pyloric obstructions occurred in
% of the high altitude group, 45% of the medium
titude group and 42% of the low altitude group.
rgical treatment was applied to 23% of the high
titude population with the highest mortality and
5.2% with no mortality in case of the low altitude
oup. Incidence of the disease was always higher
males, and the gastric/duodenal peptic ulcer
tio increased from 0.25 in the low altitude group
0.45 in the high altitude group. No differences
gastric acidity were found.

86 PRODUCTION BY SECRETAGOGUES OF DUODENAL ULCERS IN THE RAT. *(E.)* Robert, A.
pjohn Co., Kalamazoo, Mich.), T. J. Stout and J.
Dale. *Gastroenterology* 59(1):95-102, 1970.

odenal ulcers were produced in rats by the s.c.
fusion of secretagogues (histamine dihydrochloride,
rbachol, and pentagastrin) alone and in combination
er a 48 hr period. The dose required to produce duodenal ulcers in 50% of the animals (ED_{50}) was 1.5 mg/kg/min for histamine, 2 μg/kg/min for carbachol, and undetermined for pentagastrin. Synergistic effects observed when combinations of the secretagogues were used were reflected by the ED_{50} values determined for the combination of histamine dihydrochloride (0.1 mg/kg/min) and carbachol (0.3 μg/kg/min), of histamine dihydrochloride (0.75 mg/kg/min) and pentagastrin (1 μg/kg/min), and of pentagastrin (1 μg/kg/min) and carbachol (0.25 μg/kg/min). Ulcers were found only in the duodenum except in those cases where the animals had peritonitis as a result of the perforations, and the incidences of gastric ulcers, duodenal perforations, and mortality were parallel and increased with higher doses of secretagogues. The duodenal ulcers were located on the duodenum opposite the mesenteric attachment and all degrees of severity were observed.

7387 XYLAMIDE AS A GASTROTROPHIC AND GASTRIC PROTECTIVE AGENT IN THE TREATMENT OF GASTRODUODENAL ULCER. *(It.)* Galeone, M. (1st Dept. Surg., U. Milan, Italy), S. B. Doldi, G. Fichera and A. Bastagli. *Minerva Gastroent* 16(2):70-93, 1970.

The epithelializing effect of Xylamide (an N-benzoyl derivative of glutamic and aspartic acid) was studied on 18 dogs with surgically-induced gastric lesions and on 100 patients with gastric, duodenal and postgastrectomy ulcers and in patients with gastroduodenitis of various etiologies. Optimal effects were obtained with daily single doses of 800 mg (10 to 40 days) in gastroduodenitis (93%) and of recently developed acute ulcers (72%). No improvement occurred in advanced ulcer patients with atrophic lesions (28%) although the drug was useful in presurgical treatment.

7388 VETERANS ADMINISTRATION COOPERATIVE STUDY OF SURGERY FOR DUODENAL ULCER: I. DESCRIPTION AND EVALUATION OF METHOD OF RANDOMIZATION. *(E.)* Johnson, W. D. (Sch. Publ. Hlth., U. North Carolina, Chapel Hill), J. E. Grizzle and R. W. Postlethwait. *Arch Surg* 101(3):391-395, 1970.

7389 VETERANS ADMINISTRATION COOPERATIVE STUDY OF SURGERY FOR DUODENAL ULCER: II. INCIDENCE OF WOUND DISRUPTION FOLLOWING OPERATION. *(E.)* Mendoza, C. B., Jr. (VA Hosp., Clarksburg, W. Va.), R. W. Postelthwait and W. D. Johnson. *Arch Surg* 101(3):396-398, 1970.

7390 SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS. *(Rus.)* Shalimov, A. A. (Inst. General and Emergency Surgery, Kharkov, USSR), V. F. Saenko, V. T. Zaitsev and V. P. Dalavurak. *Khirurgiia* 46(6):23-28, 1970.

7391 FUNCTIONAL AND MORPHOLOGICAL CHANGES FOLLOWING GASTRIC RESECTION FOR ULCER. *(Rus.)* Zaitsev, G. P. (Pirogov Med. Inst., Moscow, USSR) and I. V. Startsev. *Klin Khir* (2):38-43, 1970.

7392 VAGOTOMY FOR GASTRIC ULCER. *(E.)* Duthie, H. L. (Roy. Infirm., Sheffield, England). *Gut* 11(6):540-545, 1970.

7393 THE NATURE AND TREATMENT OF STRESS ULCERS: A REVIEW. *(E.)* Nagel, C. B. (U. California, Irvine, California Coll. Med.). *California Med* 112(6):19-24, 1970.

7394 CHANGES IN MUCOPOLYSACCHARIDES OF THE DUODENAL MUCOSA IN PATIENTS WITH ULCER DISEASE. *(Rus.)* Uspensky, V. M. (S. M. Kirov Milit. Med. Acad., USSR). *Vrach Delo* (2):23-26, 1970.

7395 SULPIRIDE IN THE TREATMENT OF PEPTIC ULCER. *(Fr.)* Albot, G. (Paris, France) and J. Boisson. *Sem Hop Paris* 46(29):7-14, 1970.

7396 GASTRIC SECRETION AND THE ROLE OF PEPTIC ACID IN PEPTIC ULCER FORMATION. *(Rus.)* Kostyuk, F. F. (Krasnoyarsk Med. Inst., Krasnoyarsk, USSR). *Klin Med* 48(6):32-38, 1970.

7397 ON THE TREATMENT OF GASTRODUODENAL PEPTIC ULCER. *(Rus.)* Batinkov, E. L. (Crimea Regional Hosp., Crimea, USSR) and M. L. Valkin. *Klin Med* 48(1):70-71, 1970.

7398 FATAL DUODENAL ULCER HEMORRHAGE IN CHRONIC RENAL INSUFFICIENCY. *(Bul.)* Kiryakov, Z. (Urology Clin., Sofia, Bulgaria) and H. Kumanov. *Khirurgiia [Sofia]* 23(2):161-166, 1970.

7399 THE GENETIC FACTOR IN THE PATHOGENESIS OF PEPTIC ULCER. *(Rus.)* Artemiev, E. N. (Moscow Med. Inst. Stomatology, Moscow, USSR), M. O. Vildt, N. N. Potyakina and E. N. Musnitskaya. *Sovet Med* 33(4):54-58, 1970.

7400 GASTRIC SECRETION AND THE CHOICE OF SURGERY FOR GASTRIC OR DUODENAL ULCER. *(It.)* Rehner, M. (Marien Hosp., Hamburg, Germany). *Chir Gastroent* 4(2):131-145, 1970.

7401 EVALUATION OF THE METHODS OF SURGICAL TREATMENT OF PEPTIC ULCER. *(Rus.)* Kolomiichenko, M. I. (Kiev Med. Inst., Kiev, USSR) and Ya. P. Boikov. *Khirurgiia* 46(6):16-23, 1970.

7402 THE IMMEDIATE AND DELAYED RESULTS OF VAGOTOMY IN DUODENAL PEPTIC ULCER. *(Rus.)* Uteshev, N. S. (N. V. Sklifosovski Inst. Emergency, Moscow, USSR), G. V. Pakhomova, T. I. Bychkova and V. V. Semenov. *Khirurgiia* 46(6):35-39, 1970.

7403 COAGULOGRAM AND THROMBOELASTOGRAM IN PATIENTS WITH GASTRIC PEPTIC ULCER. *(Rus.)* Alimov, T. U. (Andizhan Med. Inst., Andizhan, USSR) and N. A. Grigoryan. *Khirurgiia* 46(6):54-58, 1970.

7404 VAGOTOMY IN SURGERY OF PEPTIC ULCER. *(Rus.)* Mayat, V. S. (N. I. Pirogov Med. Inst., Moscow, USSR), Yu. M. Pantsyrev and A. A. Grinberg. *Khirurgiia* 46(6):28-35, 1970.

7405 GASTRIC RESECTION FOR PEPTIC ULCER IN A FEMALE PATIENT WITH REVERSED DISPOSITION OF THE INTERNAL ORGANS. *(Rus.)* Veselov, V. S. (First Kalinin County Hosp., Kalinin, USSR) and T. A. Vitkovakaya. *Khirurgiia* 46(6):136-137, 1970.

7406 CLINICAL FEATURES AND DIAGNOSIS OF PEPTIC ULCER IN CHILDREN. *(Rus.)* Netakhata, Zh. N. (A. M. Gor'kiy Med. Inst., Donets, USSR). *Pediatriia* 49(2):67-71, 1970.

7407 PARENTERAL NUTRITION AND THE FUNCTIONAL CONDITION OF LIVER, PANCREAS, AND ADRENAL CORTEX AFTER RADICAL SURGERY FOR GASTRIC ULCER. *(Rus.)* Orlenko, Yu. M. (Kharkov Med. Inst., Khar'kov, USSR), R. M. Glants and F. F. Usikov. *Khirurgiia* 46(2):111-117, 1970.

7408 DIAGNOSIS, DEVELOPMENT AND TREATMENT OF ISOLATED ULCER PERFORATIONS. *(Fr.)* Alexandre, J. H. (Hosp. Paris, France). *Ann Gastroent Hepatol* 6(3):241-252, 1970.

7409 HEMATOPOIETIC FACTORS OF GASTRIC JUICE IN GASTRIC AND DUODENAL ULCER. *(Rus.)* Fuzaylov, Yu. M. (Tashkent Med. Inst., Tashkent, USSR) and U. I. Yuldashev. *Med Zh Uzbek* (4):23-25, 1970.

7410 ULCERS IN PATIENTS WITH CHRONIC PNEUMONIA. *(Rus.)* Geller, L. I. (Khabarovsk Med. Inst., Khabarovsk, USSR) and G. A. Bessonova. *Klin Med* 48(6):119-123, 1970.

7411 MULTIPLE PHYTOBEZOAR CAUSING AN ULCER OF THE ANTERIOR WALL OF THE STOMACH. *(Fr.)* Gurkan, K. I. (Istanbul, Turkey). *Ann Gastroent Hepatol* 6(3):225-230, 1970.

7412 TREATMENT FOR PERFORATED ULCERS IN THE FREE PERITONEUM. *(Fr.)* Germain, A. (no affil). *Ann Gastroent Hepatol* 6(3):231-238, 1970

- P:Secr:Stom (7091)(7099)
- Diagproc (7254)(7268)
- D:Stomduo (7322)(7325)(7331)(7346)(7370)(7375)
- D:Gen 7682)(7735)

7413 THE EFFECT OF DIET ON ILEOSTOMY FUNCTION. *(E.)* Thomson, T. J. (Stobhill Ruchill Hosp., Glasgow, Scotland), J. Runcie and A. Khan. *Gut* 11(6):482-485, 1970.

Data from 952 patients (65% female, 35% male) with ileostomies from 1 to 10 yr was compiled to assess the influence of specific dietary items on ileostomy function. The incidence of general ileostomy difficulties tended to increase with time, especially after 10 yr following the operation, although most of the patients had no trouble choosing a diet. Onions and fish were found to be the most troublesome foods while cellulose-rich foods caused the least disturbance. Watery flow was caused most often by alcohol and rhubarb; flatulence occurred after ingestion of peas, onions or beans, and pain and odor incriminated onions most commonly. A mixed diet is therefore acceptable to ileostomy patients, the exact content of which can be chosen by the individual patient.

7414 THE USE OF SOLVENTS IN THE INTESTINAL MANIFESTATIONS OF MUCOVISCIDOSIS. *(E.)* Bowring, A. C. (Prince of Wales Hosp., New South Wales, Australia), R. F. C. Jones and I. B. Kern. *J Pediat Surg* 5(3):338-343, 1970.

The effect of Tween 80, a surface active and emulsifying agent, on intestinal obstruction in meconium ileus was investigated. Only 3 out of 24 cases treated without using Tween 80 survived more than 1 month following ileostomy, whereas 17 out of 23 cases in a second series survived when all were treated with Tween 80 (1% in Tyrode's solution). Tween 80 has the advantages that it can be used during operation, is suitable for prolonged use p.o. and is nonirritating and economical.

7415 MONITORING THE SURGICAL PATIENT WITH SEPTIC SHOCK. *(E.)* Berliner, S. D. (Long Island Jewish Hosp., N. Y.), L. C. Burson and P. E. Lear. *Amer J Gastroent* 53(6):576-578, 1970.

7416 INFILTRATIVE DISEASES OF THE SMALL BOWEL. *(E.)* Levinson, J. D. (Dept. Med., U. Chicago, Ill.) and J. B. Kirsner. *Amer J Dig Dis* 15(8):741-766, 1970.

7417 PERFORATED MECKEL'S DIVERTICULUM FOLLOWING BLUNT ABDOMINAL TRAUMA. *(E.)* Park, H. (Wayne St. U. Sch. Med., Detroit, Mich.) and C. E. Lucas. *J Trauma* 10(8):706-707, 1970.

7418 LEIOMYOSARCOMA OF MECKEL'S DIVERTICULUM. *(E.)* Kyle, J. (Dept. Surg., U. Aberdeen, Scotland), C. S. Pegg and O. A. Haugen. *Bull Soc Int Chir* 29(2):65-68, 1970.

7419 SMALL BOWEL SUBMUCOSAL HEMATOMA: A CONSERVATIVE ATTITUDE. *(E.)* Sanidad, P. (Coney Island Hosp. Maimonides Med. Ctr., Brooklyn, N. Y.) and H. L. Miller. *S Afr Med J* 44(28):811-814, 1970.

7420 ENDOMETRIOSIS OF THE SMALL BOWEL. *(E.)* Rio, F. W. (Queen of Angels Hosp., Los Angeles, California), D. L. Edwards, J. F. Regan and K. J. Schmutzer. *Arch Surg* 101(3):403-405, 1970.

7421 A CASE OF "CARCINOID OF ILEUM". *(E.)* Shah, N. C. (Sassoon Gen. Hosp., Poona, India). *Indian J Surg* 32(4):223-224, 1970.

7422 BENIGN LYMPHOID HYPERPLASIA OF THE TERMINAL ILEUM. *(E.)* Charlesworth, D. (Dept. Surg. U. Manchester, England), H. Fox and A. R. Mainwaring. *Amer J Gastroent* 53(6):579-584, 1970.

7423 HEMANGIOPERICYTOMA OF ILEUM: A CASE REPORT. *(E.)* Sinha, H. B. (Prince of Wales Med. Coll, Patna, India) and A. K. Mukherji. *Indian J Surg* 32(4):216-219, 1970.

7424 NON-SPECIFIC BENIGN ULCERS OF THE SMALL INTESTINE. *(Nor.)* Naess, P. O. (Gjovik, Norway). *T Norsk Laegeforen* 90(13):1403-1405, 1970.

7425 MYOSARCOMA OF THE JEJUNUM. *(Ser.)* Todorovic, V. (Med. Ctr. Smederevo, Yugoslavia). *Srpski Arh Celok Lek* 97(10):1111-1112, 1969.

7426 GALLSTONE ILEUS: ETIOLOGY AND CLINICAL CONSIDERATIONS. *(It.)* Alagni, G. (Dept. Surg., U. Trieste, Italy), F. Aveni and D. Tondi. *Chir Gastroent* 4(2):153-174, 1970.

7427 PATHOLOGY OF MECKEL'S DIVERTICULUM. *(Rus.)* Murasheva, Z. M. (Kalinin Med. Inst., Kalinin, USSR) and T. N. Lukina. *Sovet Med* 33(4):99-103, 1970.

7428 INTESTINAL OBSTRUCTION CAUSED BY BILIARY CALCULI. *(Rus.)* Savchuk, B. D. (N. I. Pirogov Med. Inst., Moscow, USSR) and A. S. Tarasova. *Khirurgiia* 46(3):85-91, 1970.

7429 SARCOMA OF THE SMALL INTESTINE. *(Rus.)* Kovtun, K. A. (Second City Hosp., Elets Lipetsk, USSR). *Klin Med* 48(1):137-138, 1970.

- P:Morph (7025)
- P:Motil (7081)
- Diagproc (7273)(7289)
- D:S.Intest:Regent (7433)
- D:Livbil (7542)
- D:Gen (7677)(7701)(7733)(7736)(7743)(7744)

SMALL INTESTINE

Regional Enteritis

7430 ACUTE DILATATION OF COLON IN CROHN'S DISEASE. *(E.)* Javett, S. L. (St. George's Hosp., London, England) and B. N. Brooke. *Lancet* 2(7664):126-128, 1970.

Five case reports where acute toxic dilation of the colon occurred as a complication in Crohn's disease are presented. The frequency of the colonic distension with ulcerative colitis is so great that the development of dilation almost inevitably leads to a diagnosis of ulcerative colitis, but these 5 cases suggest that Crohn's disease may produce an acute abdominal emergency (especially when the colon is affected) similar to that in ulcerative colitis.

7431 FREE PERFORATION IN CROHN'S DISEASE OF THE ILEUM. *(E.)* Lahiri, T. K. (Newark Beth Israel Med. Ctr., N. J.) and S. Diener. *J Newark Beth Israel Med Ctr* 20(3):150-157, 1969.

7432 VESICO-INTESTINAL FISTULA IN A BOY WITH CROHN'S DISEASE. *(E.)* Gierup, J. (Karolinska Hosp., Stockholm, Sweden) and A. Livaditis. *Z Kinderchir* 8(3):264-268, 1970.

7433 ENTEROPATHIA CHOLERETICA. *(Sw.)* Eriksson, S. (Central Hosp., Vasteras, Sweden). *Lakartidningen* 67(25):2907-2914, 1970.

7434 THE PATHOLOGY OF THE APPENDIX IN MORBUS CROHN AND ULCERATIVE COLITIS. *(E.)* Larsen, E. (Bispebjerg Hosp., Copenhagen, Denmark), C. Axelsson and Aa. Johansen. *Acta Path Microbiol Scand* (suppl. 212):161-165, 1970.

7435 CROHN'S DISEASE OF THE RECTUM. *(E.)* Kyle, J. (Royal Infirm., Aberdeen, Scotland) and S. W. R. Ewen. *Bull Soc Int Chir* 29(2):76-84, 1970.

- D:S.Intest:Malabs (7438)(7441)
- D:L.Intest:Ulccol (7498)(7500)
- D:L.Intest:Grancol (7503)(7505)
- D:Gen (7680)

SMALL INTESTINE

Malabsorption

7436 PARATHORMONE-INDUCED RENAL BICARBONATE WASTAGE IN INTESTINAL MALABSORPTION AND IN CHRONIC RENAL FAILURE. *(E.)* Muldowney, F. P. (St. Vincent's Hosp., Dublin, Ireland), J. F. Donohoe, R. Freaney, C. Kampff and M. Swan. *Irish J Med Sci* 3(5):221-231, 1970.

Studies were performed on 3 patients with systemic acidosis due to intestinal malabsorption secondary to jejunal lymphoma (62-yr-old woman) or to uremia secondary to polycystic renal disease (44-yr-old man and 47-yr-old woman), in order to determine the effect of large doses of vitamin D on renal bicarbonate loss in both of these conditions. The patient with malabsorption exhibited hypocalcemia with a stable systemic acidosis and high urine pH during the control period. NH_4Cl stimulation produced a normal urine pH and total acid output while bicarbonate infusion produced a reduced renal bicarbonate threshold (1.8 to 1.9 mEq/l plasma) and a reduced bicarbonate transport maximum (1.90 mEq/min/ 100 ml). Oral vitamin D_2 (2.5 to 15 mg/day) restored serum calcium and serum bicarbonate to their normal levels, and also increased the renal bicarbonate threshold and transport maximum. Similar results were obtained in the two patients with renal disease after the oral administration of vitamin D.

7437 SMALL INTESTINAL MUCOSAL ABNORMALITIES IN RELATIVES OF PATIENTS WITH DERMATITIS HERPETIFORMIS. *(E.)* Marks, J. (Dept. Derm., U. Newcastle, England), D. Birkett, S. Shuster and D. F. Roberts. *Gut* 11(6):493-497, 1970.

Biopsies of the small intestine were taken in 29 patients with dermatitis herpetiformis and in 18 of their relatives to assess the degree of familial occurrence of the disease with gluten sensitivity. The biopsies were taken from either the first 20 cm of small bowel or from the third of fourth part. A predominantly convoluted mucosa in 32% of the patients' relatives proved significantly higher than values for the general population (8%). The relatives generally suffered no bowel problems and only one was found with small bowel abnormality whose propositus did not have the celiac syndrome. The mechanism of inheritance of the dermatitis and the percentage of the population also suffering from the celiac syndrome remain to be studied, although a genetic factor is believed to be involved in production of the dermatitis herpetiformis as in other forms of the celiac disease.

7438 A PSYCHIATRIC STUDY OF PATIENTS WITH DISEASES OF THE SMALL INTESTINE. *(E.)* Goldberg, D. (Dept. Psychiat., U. Manchester, England). *Gut* 11(6):459-465, 1970.

Forty-six patients with idiopathic steatorrhea, 23 with Crohn's disease and 11 patients with alactasia were given standard psychiatric interviews to assess the relation of psychiatric disturbance with the organic disease. Psychiatric symptoms (fatigue, irritability, depression, phobias, anxiety) were rated by frequency and intensity, and blood tests for hemoglobin, plasma proteins, serum iron, vitamin B_{12}, folate, calcium and phosphate were also performed. Idiopathic steatorrhea, the only disease related to malabsorption, was not particularly associated with psychiatric disturbance, suggesting that dietary deficiencies are not the cause of the psychiatric illness. Severity of psychiatric illness and bowel movements were related in that 9.8% of normal subjects described their stools as offensive, as compared to 41% of the psychiatrically ill. Distress associated with the diarrhea was not found to be a causal factor in psychiatric disturbances. Previous history of psychiatric illness was found to be more common in subjects with idiopathic steatorrhea, as were depressive traits. Psychiatric illness does not seem to be related to general malabsorption or to dietary deficiencies, although a correlation was found between emotional disturbance and bowel activity.

7439 DERMATOGENIC ENTEROPATHY. *(E.)* Marks, J. (Roy. Victoria Infirm., Newcastle, England) and S. Shuster. *Gut* 11(4):292-298, 1970.

One hundred inpatients with various skin diseases (including eczema, psoriasis, Darier's disease and licken planus) were evaluated clinically and by laboratory tests for the presence of dermatogenic enteropathy. Five of the 100 patients (41 erythroderma, 47 moderately extensive skin disease, 12 limited skin disease) complained of diarrhea, another had pale, bulky stools and 5 had lost weight. Steatorrhea was very common in patients with erythroderma (100% skin involvement), with a significant difference between the above group and those with less extensive skin disease. The steatorrhea improved significantly with response of the rash to topical treatment in 17 of 18 patients. Three of 4 patients studied in more than one attack developed steatorrhea in each attack, although their fecal fat excretion returned to normal when the rash remitted. The urinary indican was not increased in 4 of 6 patients, suggesting that coliforms were not present in excessive numbers in the small bowel. The volume, bicarbonate concentration, and amylase content of the duodenal juice were normal in the patient with dermatogenic enteropathy, suggesting that the steatorrhea was not due to failure of exocrine pancreatic secretion. None of the patients had a flat mucosa suggesting that the steatorrhea was not due to celiac disease.

7440 SMALL-INTESTINAL MUCOSAL ABNORMALITIES IN VARIOUS SKIN DISEASES -- FACT OR FANCY? *(E.)* Marks, J. (Roy. Victoria Infirm., Newcastle, England) and S. Shuster. *Gut* 11(4):281-291, 1970.

Patients (228) with various dermatoses (including dermatitis herpetiformis 28, psoriasis 55, eczema 53, rosacea 35 and pemphigoid 15) were investigated for the presence of small intestinal mucosal abnormalities by stereomicroscopy. A flat mucosa was found in 36% of patients with dermatitis herpetiformis but in none of the controls; a predominantly convoluted mucosa was found in 30% of the patients with dermatitis herpetiformis and in 8% of the controls. However, no special association with structural alterations in the small bowel mucosa was found in the other dermatoses studied; the frequency distribution of the predominant and individual small intestinal mucosal features was the same in patients with eczema, psoriasis and rosacea as in the local control population. There was no significant relation between mucosal appearance and sex, convolutions being found as the predominant feature in 10% and 6% of the female and male subjects, resp. Steatorrhea was found in all patients with all types of mucosal appearance; its incidence was greatest in the convoluted group. The increased incidence of a convoluted mucosa in the northeast of England requires further study to determine whether it is indicative of an increased incidence of the celiac syndrome in the region, or whether it results from a minor population difference or a local peculiarity of diet.

7441 INCIDENCE AND CLINICAL SIGNIFICANCE OF LACTOSE MALABSORPTION IN ULCERATIVE COLITIS AND CROHN'S DISEASE. *(E.)* Gudmand-Hoyer, E. (U. Hosp. Copenhagen, Denmark) and S. Jarnum. *Gut* 11(4):338-343, 1970.

The incidence of lactose malabsorption was investigated in 85 patients with ulcerative colitis and 71 patients with Crohn's disease by means of lactose tolerance tests and disaccharidase determinations in small intestinal mucosa. Lactose malabsorption was present in 8 patients with ulcerative colitis (9%) and in 4 with Crohn's disease (6%), and a control group displayed a similar incidence. Eleven of the patients with lactose malabsorption had a flat blood sugar curve during lactose tolerance testing; a glucose-galactose test was normal in all patients and was unassociated with abdominal distress. Mucosal lactase activity was depressed in all 9 patients examined. In 7 milk drinkers lactose malabsorption caused or contributed to chronic diarrhea; a lactose-free diet resulted in a considerable reduction, and in 4 patients, even total cessation of diarrhea. Lactose malabsorption is not particularly common in ulcerative colitis or Crohn's disease and its etiology appears to be unrelated to the intestinal disease.

7442 MALABSORPTION SYNDROME. *(Por.)* San Juan, F. (Govt. Hosp. Rio De Janeiro, Guanabara, Brazil). *Hospital* 77(3):765-780, 1970.

7443 STRUCTURAL AND FUNCTIONAL MODIFICATIONS INDUCED BY DIET AND GEFARNATE ON THE INTESTINAL MUCOSA IN MALABSORPTION OF INFANCY. *(It.)* Mastella, G. (Alessandri Infant's Hosp., Verona, Italy), V. Marcer, G. A. Buffatti and M. Mariotti. *Minerva Pediat* 22(23):1157-1174, 1970.

7444 MALABSORPTION OF VITAMIN B_{12} DURING TREATMENT WITH SLOW-RELEASE POTASSIUM CHLORIDE: PRELIMINARY REPORT. *(E.)* Salokannel, S. J. (Dept. Med., U. Oulu, Finland), I. P. Palva and J. T. Takkunen. *Acta Med Scand* 187(5):431-432, 1970.

7445 HIGH INCIDENCE OF LACTASE ACTIVITY DEFICIENCY IN SMALL BOWEL OF ADULTS IN THE NAPLES AREA. *(E.)* De Ritis, F. (Clin. Infect. Dis., U. Naples, Italy), G. G. Balestrieri, G. Ruggiero, E. Filosa and S. Auricchio. *Pol Arch Med Wewnet* 44(4-5):539-542, 1970.

7446 PRIMARY ADULT LACTOSE INTOLERANCE AND THE MILKING HABIT: A PROBLEM IN BIOLOGIC AND CULTURAL INTERRELATIONS: II. A CULTURE HISTORICAL HYPOTHESIS. *(E.)* Simoons, F. J. (Dept. Geography, U. California, Davis). *Amer J Dig Dis* 15(8):695-710, 1970.

7447 MALIGNANT CELIAC SYNDROME: REPORT OF TWO CASES WITH MALABSORPTION AND MICROSCOPIC FOCI OF INTESTINAL LYMPHOMA. *(E.)* Hourihane, D. O'B. (Dept. Path., Trinity Coll. U. Dublin, Ireland) and D. G. Weir. *Gastroenterology* 59(1):130-139, 1970.

7448 LACTOSE INTOLERANCE IN SINGAPORE. *(E.)* Bolin, T. D. (Prince Henry Hosp., New South Wales, Australia), A. E. Davis, C. S. Seah, K. L. Chua, V. Yong, K. M. Kho, C. L. Siak and E. Jacob. *Gastroenterology* 59(1):76-84, 1970.

7449 STUDIES ON IDIOPATHIC NON-TROPICAL SPRUE: THE FAMILIAL OCCURRENCE OF SPRUE, RELATIONSHIP BETWEEN SPRUE AND MEGALOBLASTIC ANEMIA OF PREGNANCY AND PUERPERIUM, AND THE SIGNIFICANCE OF PARTIAL GASTRECTOMY FOR MANIFESTATION OF SYMPTOMS. *(E.)* Ek, B. (Dept. Med. U. Umea, Sweden). *Acta Med Scand* (supp. 508):1-72, 1970.

7450 EXOCRINE PANCREAS INSUFFICIENCY SECONDARY TO GLUTENENTEROPATHY. *(E.)* Bustos Fernandez, L. (Hosp. Rawson, Buenos Aires, Argentina), A. De Paula, R. Prizont, O. M. Tiscornoa, J. Braguinsky, A. Carreras and D. Hojman. *Amer J Gastroent* 53(6):564-569, 1970.

7451 CHOLECYSTOCOLONIC FISTULA ASSOCIATED WITH MALABSORPTION. *(E.)* Augur, N. A. (U. Michigan Med. Ctr., Ann Arbor) and W. A. Gracie, Jr. *Amer J Gastroent* 53(6):558-563, 1970.

- P:Absorp (7055)
- P:Secr:Int (7193)
- Diagproc (7228)(7253)(7281)(7283)
- D:L.Intest:Entcol (7496)
- D:Gen (7678)(7736)

LARGE INTESTINE

7452 SKELETAL DEFORMITIES IN CASES OF ANAL AND RECTAL ATRESIA. *(Ger.)* Schonenberg, H. (Med. Fac. Rhein-Westphalia Tech. Coll., Aachen, Germany). *Monatsschr Kinderheilk* 118(5):149-151, 1970.

Eighteen infants with anal and rectal atresia were investigated for simultaneously occurring skeletal deformities. The following deformities were found: congenital clefts in the thoracic and cervical area of the vertebral column (3); deformation of the cervical, thoracic and lumbar regions (1); hypoplasia and bifurcation of the ribs without demonstrable changes of the spinal column (2); duplication of the radial (1) and tibial (1) ossification centers. Another infant showed bilateral aplasia of radius and thumb and, in addition, kidney aplasia (right), hydronephrosis and mega-ureter (left) and uterus bipartus. This last observation vividly recalled the thalidomide embryopathy. Multiple skeletal deformations in combination with anal and rectal atresia seem to constitute a specific syndrome of unknown etiology.

7453 ULTRASTRUCTURE OF THE RECTAL WALL IN HUNTER'S SYNDROME. *(E.)* Elsner, B. (Washington U. Sch. Med., St. Louis, Mo.). *Gastroenterology* 58(6):856-862, 1970.

The ultrastructure of the rectal wall was studied in a 3-year-old male with Hunter's syndrome (mucopolysaccharidosis, type II). Membranous cytoplasmic bodies were found in the ganglion and satellite cells of the intramural plexi and the connective tissue cells showed an abundance of cytoplasmic vacuoles. These findings, similar to one described in the brain, can be of diagnostic significance in mucopolysaccharidosis when found in rectal biopsy. The patient was found to have extensive involvement of the neurons of myenteric and submucosal plexi of the bowel by these inclusions which may result in disturbance of autonomic innervation and be the cause of diarrhea.

7454 OBSERVATIONS ON AN UNUSUAL ENZYME DISTRIBUTION PATTERN IN THE COLON OF A CASE OF FAMILIAL POLYPOSIS WITH MALIGNANT CHANGES. *(E.)* Maggi, V. (Mem. Hosp., London, England) and A. P. Wyatt. *Gut* 11(4):319-322, 1970.

The distribution pattern of acid and alkaline phosphatases, esterases and β-glucuronidase in a case of familial polyposis of the colon with malignant changes was investigated histochemically. In the normal mucosa acid phosphatase activity was present in the cells of the lamina propria and around the mucin droplets of the numerous goblet cells; in the polyp, activity was present at the base of these cells and in the cancer tissue, activity was present also in the invading and proliferating cells. β-Glucuronidase activity was very low and had a distribution and behavior similar to that described for acid phosphatase in the normal mucosa, but activity was increased in the polyps and decreased in the cancer. The behavior of esterases was similar to that of β-glucuronidase. In the normal mucosa and in the polyps alkaline phosphatase was present only in the capillaries and little or no activity was observed in the epithelium, connective tissue, or muscle cells in either of these structures, while in the cancer, invading and proliferating cells contained high enzyme activity, predominantly in the form of granules. Alkaline phosphatase was also present at the junction between the epithelium of the mucosa and the lamina propria. Acid hydrolases may be enzymes involved in the breaking down of the connective tissue surrounding the polyps, thus facilitating its invasion by cancer cells.

7455 RADIOPOTENTIATING ACTION OF 1-β-D-ARABINOFURANOSYLCYTOSINE IN A XENOGRAFTED HUMAN COLONIC CARCINOMA. *(E.)* Goldenberg, D. M. (U. Pittsburgh Sch. Med., Pa.). *Proc Soc Exp Biol Med* 134(2):510-512, 1970.

The radiopotentiating action of 1-β-D-arabinofuranosylcytosine in a xenografted human colonic carcinoma was investigated in unconditioned hamsters. Radiopotentiation was defined as any significant improvement above the expected arithmetic sum of each modality's own range of tumor growth-inhibition without a concomitant increase in host toxicity. At the maximally tolerated single daily dose of 1-β-D-arabinofuranosylcytosine in the hamster (24 mg/kg i.p.) no uniequivocal radiopotentiating effects could be ascertained. Reducing this dose by one half, however, did result in a synergistic antitumor effect for the combination of this agent and 300 r x-rays, a particularly striking effect since each parameter alone was at its minimally effective dose. The maximum tumor growth inhibition obtained for this combination was 40%, but this could be increased to 70% by merely altering the 1-β-D-arabinofuranosylcytosine dosage schedule to 4 mg/kg three times daily. The improved efficacy of a divided dose schedule was again reflected in the tumor-inhibitory effects of the drug alone, yielding a growth inhibition equivalent to that of the combination therapy of the preceding experiment (40%).

7456 POSITION OF THE CARCINOEMBRYONIC ANTIGEN OF THE HUMAN DIGESTIVE SYSTEM IN ULTRASTRUCTURE OF TUMOR CELL SURFACE. *(E.)* Gold, P. (Montreal Gen. Hosp., Quebec, Canada), J. Krupey and H. Ansari. *J Natl Cancer Inst* 45(2):219-225, 1970.

Cancerous colonic tissue blocks or cell suspensions incubated with the ferritin-anti-carcinoembryonic antigen conjugate for 1 hr at 37°C were processed in order to investigate the ultrastructural localization of carcinoembryonic antigen. Normal colonic tissue samples incubated with the ferritin-anti-carcinoembryonic antigen preparation revealed no significant ferritin labeling at any time, but sections of tumor cells exposed to the conjugate showed marked accumulations of ferritin. In every case, the ferritin was localized primarily in the "fuzz" or glycocalyx coating the surface membrane of the colonic tumor cell. Where a portion of the ferritin particles was immediately adjacent to the plasma membrane, it was occasionally difficult to distinguish whether some label had localized within, or just beyond, the trilamellar structure. The carcinoembryonic antigen of the human digestive system is apparently primarily in the glycocalyx of the colonic cancer cell.

7457 FORCED LACERATIONS OF THE RECTUM. *(Bul.)* Altankov, P. (Varna Med. Inst., Varna, Bulgaria), M. Genova and A. Stoyanov. *Khirurgiia [Sofia]* 23(2):167-169, 1970.

7458 COMPLICATIONS FOLLOWING RADICAL SURGERY FOR CANCER OF RECTUM AND COLON. *(Rus.)* Militarev, Yu. M. (Min. Publ. Hlth., Moscow, USSR) and V. B. Alexandrov. *Vop Onkol* 16(2):73-76, 1970.

7459 SURGERY FOR MALIGNANT TUMORS OF THE LARGE INTESTINE: A FOLLOW UP STUDY. *(Rus.)* Narychev, A. A. (Central Sci. Research Inst. Investigation Work Ability, Moscow, USSR), D. N. Efremov and B. N. Malaev. *Khirurgiia* 46(3):94-98, 1970.

7460 SURGERY IN COLON AND RECTAL POLYPOSIS. *(Bul.)* Velcev, V. (P. Kolarov City Hosp., Sofia, Bulgaria). *Khirurgiia [Sofia]* 23(2):133-138, 1970.

7461 INTRAOPERATIVE RADIOTHERAPY OF ABDOMINAL TUMORS: III. INTRAOPERATIVE IRRADIATION OF CARCINOMA OF THE COLON AND RETROPERITONEAL TUMORS. *(Jap.)* Abe, M. (Fac. Med. Kyoto U., Japan), K. Yamano and S. Matsuda. *Nippon Acta Radiol* 29(12):1488-1493, 1970.

7462 DIAGNOSIS AND SURGICAL TREATMENT OF COMPLEX RECTAL HERNIA. *(Rus.)* Mandziuk, V. D. (Lvov County Hosp., Dept. Proctology, Lvov, USSR) *Klin Khir* (5):29-34, 1970.

7463 COMBINED TREATMENT OF CANCER OF THE RECTUM. *(Rus.)* Pavlov, A. S. (P. A. Gertsen Sci. Res. Inst. Oncology, Moscow, USSR), E. P. Simankina, M. M. Kruschov and E. S. Smirnova. *Khirurgiia* 46(5):67-74, 1970.

7464 SYNCHRONOUS EXTIRPATION OF THE RECTUM FOR CANCER. *(Rus.)* Aleksandrov, V. B. (Scientific Research Lab. Proctology, Moscow, USSR), S. N. Fain and I. M. Inoyatov. *Khirurgiia* 46(5):63-67, 1970.

7465 BENIGN MESENCHYMOMA OF THE CECUM. *(Por.)* De Garcia, V. C. M. (IPASE, Porto Alegre, Brazil). *Hospital* 77(3):1041-1049, 1970.

7466 AMPICILLIN IN THE PROPHYLAXIS OF WOUND INFECTION IN ELECTIVE OPERATION FOR CANCER OF THE COLON. *(Nor.)* Andersen, B. (Bispebjerg Hosp., Copenhagen, Denmark) and A. H. Ostergaard. *Ugeskr Laeg* 132(24):1133-1135, 1970.

7467 CHRONIC OBSTRUCTION OF THE LARGE INTESTINE CAUSED BY RARE PATHOLOGICAL PROCESSES. *(Rus.)* Altshul, A. S. (Orenburg Clin. Hosp., USSR) *Klin Khir* (3):14-17, 1970.

7468 THE RADIOLOGY OF ISCHEMIC COLITIS. *(E.)* Sherbon, K. J. (Roy. Prince Alfred Hosp., Sydney, Australia). *Aust Radiol* 14(1):46-55, 1970.

7469 ANORECTAL ANOMALIES: A SUGGESTED INTERNATIONAL CLASSIFICATION. *(E.)* Santulli, T. V. (Babies Hosp., New York, N.Y.), W. B. Kiesewetter and A. H. Bill, Jr. *J Pediat Surg* 5(3):281-287, 1970.

7470 THE TREATMENT OF RECTAL PROLAPSE IN CHILDREN WITH INJECTIONS OF 30 PER CENT SALINE SOLUTIONS. *(E.)* Kay, N. R. M. (Child. Hosp., Sheffield, England) and R. B. Zachary. *J Pediat Surg* 5(3):334-337, 1970.

7471 COLONIC STENOSIS IN THE NEWBORN: THE POSSIBLE THROMBOEMBOLIC ETIOLOGY OF INTESTINAL STENOSIS AND ATRESIA. *(E.)* Erskine, J. M. (U. California Med. Sch., San Francisco). *J Pediat Surg* 5(3):321-333, 1970.

7472 SYMPTOMATOLOGY AND X-RAY DIAGNOSIS OF COMPLICATED DIVERTICULOSIS OF THE LARGE INTESTINE. *(Rus.)* Khaspekov, G. E. (Central Inst. Postgrad. Med., USSR), M. D. Braitseva, B. M. Gazetov and G. M. Khazhinskaya. *Klin Med* 48(6):103-107, 1970.

7473 ENZYME ACTIVITY OF THE SMALL INTESTINE FOLLOWING COLECTOMY. *(Rus.)* Brusilovsky, M. N. (Sci. Research Lab. Proctology, Moscow, USSR), A. V. Konsistorum and O. P. Marko. *Klin Med* 48(6):95-99, 1970.

7474 RECTAL PROLAPSE: CAUSATION AND SURGICAL TREATMENT. *(E.)* Theuerkauf, F. J., Jr. (Mayo Clin., Rochester, Minn.), O. H. Beahrs and J. R. Hill. *Ann Surg* 171(6):819-835, 1970.

7475 CARCINOMA OF THE COLON, RECTUM AND ANUS. *(E.)* Franklin, R. (Vanderbilt U. Sch. Med., Nashville, Tenn.) and B. McSwain. *Ann Surg* 171(6):811-818, 1970.

7476 CLINICAL FEATURES OF CARCINOMA OF THE RECTUM. *(E.)* Menda, R. K. (no affil). *Indian J Cancer* 7(1):52-59, 1970.

7477 NONSUTURE REPAIR OF PELVIC FISTULAE. *(E.)* Sheena, K. S. (M. D. Anderson Hosp. Tumor Inst., Houston, Texas), J. E. Healey, Jr., H. S. Gallager and C. M. McBride. *Tex Med* 66(6):62-67, 1970.

7478 LATERAL SUBCUTANEOUS INTERNAL SPHINCTEROTOMY FOR FISSURE-IN-ANO: TECHNIQUE AND EXPERIENCE WITH FORTY-ONE CASES. *(E.)* Clery, A. P. (St.

Laurence's Hosp., Dublin, Ireland) and J. B. O'Riordan. *J Roy Coll Surg Ireland* 6(1):10-14, 1970.

7479 AN UNUSUAL CASE OF CARCINOID TUMOR OF APPENDIX. *(E.)* Paliwal, Y. D. (S. N. Med. Coll., Agra, India), V. K. Srivastava and U. D. Galviya. *Indian J Cancer* 7(1):67-70, 1970.

7480 ADENOCARCINOMA OF THE COLON AND RECTUM RESULTS OF THERAPY IN A COMMUNITY HOSPITAL. *(E.)* Gazzaniga, A. B. (Peter Bent Brigham Hosp., Boston, Mass.), A. M. Munster and F. P. Ross. *Amer J Surg* 120(1):62-65, 1970.

7481 RESECTION OF RECTAL MUCOSA WITHOUT PROCTECTOMY AS AN ADJUNCT TO ABDOMINOPERINEAL RESECTION FOR NONMALIGNANT CONDITIONS. *(E.)* Dinbar, A. (UCLA Sch. Med., Los Angeles, Calif.), D. M. Rangel and E. W. Fonkalsrud. *Amer J Surg* 120(1):59-61, 1970.

7482 MEGACOLON IN HIRSCHSPRUNG'S DISEASE. *(Fr.)* Nezelof, C. (Necker Hosp. Child. Dis., Paris, France), D. Guy-Grand and E. Thomine. *Presse Med* 78(34):1501-1506, 1970.

7483 PSEUDOMEMBRANEOUS COLITIS AS A SEQUEL TO ORAL LINCOMYCIN THERAPY. *(E.)* Benner, E. J. (Sch. Med. U. California, Davis) and W. H. Tellman. *Amer J Gastroent* 54(1):55-61, 1970.

7484 DIVERTICULITIS: REVIEW OF 116 PROVED CASES. *(E.)* Zezulin, W. (Lahey Clin., Boston, Mass.). *Lahey Clin Found Bull* 19(3):112-120, 1970.

7485 TYPHLITIS: A COMPLICATION OF LEUKEMIA IN CHILDHOOD. *(E.)* Wagner, M. L. (Baylor Coll. Med., Houston, Texas), H. S. Rosenberg, D. J. Fernbach and E. B. Singleton. *Amer J Roentgen* 109(2):341-350, 1970.

7486 THE ROOMS TREATMENT OF INTERNAL HEMORRHOIDS BY RINGING. *(E.)* Dick, E. T. (Waikato Hosp., Hamilton, New Zealand). *New Zeal Med J* 71(453):83-85, 1970.

7487 FAMILIAL POLYPOSIS COLI ASSOCIATED WITH EXTRACOLONIC ABNORMALITIES. *(E.)* Parks, T. G. (St. Mark's Hosp., London, England), H. J. R. Bussey and H. E. Lockheart-Mummery. *Gut* 11(4): 323-329, 1970.

7488 THE ROENTGENOLOGIC APPEARANCE OF POSTOPERATIVE CONGENITAL MEGACOLON (HIRSCHPRUNG'S DISEASE). *(E.)* James, A. E., Jr. (Johns Hopkins Med. Sch., Baltimore, Md.), J. B. Greenfield, R. C. Pfister, A. L. Weber, W. H. Hendren and E. B. D. Neuhauser. *Amer J Roentgen* 109(2):351-367, 1970.

7489 PRESACRAL MASSES IN CHILDHOOD. *(E.)* Werner, J. L. (U. California Med. Ctr., San Francisco) and H. Taybi. *Amer J Roentgen* 109(2):403-410, 1970.

7490 THE FREQUENCY OF APPENDECTOMY IN COLONIC CANCER PATIENTS IN A RETROSPECTIVE CLINICAL MATERIAL. *(E.)* Hornbak, H. (Central Hosp., Holbaek, Denmark) and F. Amtrup. *Acta Path Microbiol Scand* (suppl. 212):158-160, 1970.

7491 INTRAPERITONEAL COLONIC PERFORATIONS: CLINICAL, ANATOMIC AND RADIOLOGIC FORMS. *(Fr.)* Edelmann, G. (no affil). *Ann Gastroent Hepatol* 6(3):255-267, 1970.

7492 FECAL LOSS OF ELECTROLYTES, LIQUID AND NITROGEN FOLLOWING TOTAL COLON RESECTION. *(Rus.)* Brussilovski, M. I. (Scientific Research Lab. Proctology, Moscow, USSR), A. M. Brandina and A. V. Konsistorum. *Lab Delo* (6):357-360, 1970.

7493 TREATMENT OF PERITONITIS DUE TO COLONIC PERFORATION INTO THE FREE PERITONEUM. *(Fr.)* Houdard, C. (Hosp. Paris, France) and D. Accary. *Ann Gastroent Hepatol* 6(3):269-278, 1970.

7494 LONG TERM RESULTS OF RECTAL CANCER SURGERY. *(Rus.)* Ryzhykh, A. N. (Clin. Health Minist. RSFSR, Moscow, USSR), S. N. Fain, I. M. Inoyatov and L. S. Boguslavsky. *Vestn Khir* 104(1):82-86, 1970.

7495 TRUE AND APPARENT "PARADOXES OF ACUTE APPENDICITIS". *(Rus.)* Korabellnikov, I. D. (Chelyabinsk, USSR) *Vestn Khir* 104(3):46-48, 1970.

7496 HYDROELECTOLYTIC DISORDERS REVEALING A DEGENERATED VILLOUS RECTO-SIGMOID TUMOR. *(Fr.)* Claude, R. (Limoges, France), G. Lehmann, B. Pillegand and J. Hirtz. *Concours Med* 92(22):5005-5008, 1970.

7497 INTESTINAL MICROFLORA AND AUTOIMMUNE REACTIONS IN CHRONIC COLITIS. *(Rus.)* Alserova, I. S. (Vladimirskiy Sci. Res. Inst. Clin. Med., Moscow, USSR), S. E. Makievskaya and A. A. Misautova. *Ter Arkh* 42(5):36-38, 1970.

- P:Morph (7047)
- Diagproc (7227)(7266)(7270)(7274)(7276)
- D:S.Intest:Regent (7430)(7433)(7434)(7435)
- D:S.Intest:Malabs (7451)
- D:Livbil:Cirrh (7644)
- D:Gen (7701)(7704)(7733)(7743)
- D:Gen:Parasit (7763)

LARGE INTESTINE

Ulcerative Colitis

7498 INFLAMMATORY BOWEL DISEASE IN ANKYLOSING SPONDYLITIS. *(E.)* Jayson, M. I. V. (Roy. Natl. Hosp. Rheum. Dis., Bath, England), P. R. Salmon and W. J. Harrison. *Gut* 11(6):506-511, 1970.

The presence of ulcerative colitis and inflammatory bowel disease was determined in 48 patients with ankylosing spondylitis who were subjected to complete abdominal examinations, sigmoidoscopy and biopsies of the large bowel. A diagnosis of proctocolitis was made in 8 patients (17%), 7 of whom were believed to have ulcerative colitis and the other Crohn's disease. A history of diarrhea was obtained in 5 subjects, but no symptom of bowel disease was present in the other 3 patients. The prevalence of chronic inflammatory bowel disease in patients with ankylosing spondylitis suggests an association between the 2 conditions.

7499 URINARY CRYSTALLOID EXCRETION IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE. *(E.)* Breuer, R. I. (Evanston Hosp., Ill.), E. A. Gelzayd and J. K. Kirsner. *Gut* 11(4):314-318, 1970.

Because of the potential relation of increased urinary crystalloid excretion and concentration to stone formation, urinary calcium and uric acid excretion patterns were studied prospectively in 65 patients with inflammatory bowel disease (ulcerative colitis, granulomatous bowel disease) and compared with excretion patterns in patients with functional bowel disease (controls) receiving similar dietary prescriptions. Mean 24-hr urinary calcium excretion was higher in both ulcerative colitis (212 mg) and granulomatous bowel disease (168 mg) than in controls (118 mg). Urinary calcium excretion exceeded 250 mg/24 hr in 11 of 34 inflammatory bowel disease patients; none of the controls exhibited this magnitude of calciuria. Eight of these 34 patients compared with one of 10 controls excreted urine with calcium concentration greater than 20 mg/100 ml. Mean 24-hr urine volumes were 1,525 ml for ulcerative colitis and 1,046 ml for functional bowel disease. Mean urinary sodium excretion (mg/24 hr) was 103 for ulcerative colitis, 130 in regional enteritis, and 70 in controls. Mean 24-hr uric acid excretion was slightly higher in granulomatous bowel disease (520 mg) than in ulcerative colitis (450 mg) or functional bowel disease (451 mg). Eight inflammatory bowel disease patients excreted more than 700 mg uric acid in 24 hr; none of the controls reached this level. The mean urinary uric acid concentration was significantly higher in ulcerative colitis (538 µg/ml) and in granulomatous bowel disease (558 µg/ml) than in controls (338 µg/ml). The mean morning urine pH was lower (5.5) in ulcerative colitis than in the other groups. There was apparently increased excretion and higher concentration of calcium and uric acid in some patients with inflammatory bowel disease on the usual treatment programs.

7500 ULCERATIVE COLITIS, REGIONAL ILEITIS AND SULPIRIDE. *(Fr.)* Toulet, J. (Int. Hosp., U. Paris, France) and J. Rousselet. *Sem Hop Paris* 46(29):41-53, 1970.

Sulpiride (100 mg i.m. twice daily for 10 - 15 days followed by a maintenance dosage of 150 to 300 mg daily p.o.) was administered to 13 patients (9 women and 4 men, middle-aged) with ulcerative colitis. Four patients with Crohn's disease (2 women and 2 men, 20-55 yr) received the drug for 18 days (100 mg 4 times daily i.v. and i.m.); the maintenance treatment consisted of 450 mg p.o. for 3 months. Clinical improvement occurred in 10 out of 13 cases of ulcerative colitis within 3-7 days, while endoscopic findings improved within 3 to 4 weeks and remarkable improvement was noted in 2 out of 4 cases of Crohn's disease. Side effects consisted of amenorrhea with galactorrhea in 4 cases, chest discomfort in 2 cases (out of 8) and male impotency in 1 out of 6 cases.

7501 CONSERVATIVE THERAPY OF NONSPECIFIC ULCERATIVE COLITIS. *(Rus.)* Krichevsky, Yu. A. (Twenty Second Hosp. Kharkov, Kharkov, USSR). *Klin*
1ed 48(6):99-102, 1970.

502 SEVERE ULCERATIVE COLITIS AND HYPNOTHERAPY. *(E.)* Riddell, W. G. (no affil). *J Amer*
nst Hypnosis 11(3):113-116, 1970.

- D:S.Intest:Regent (7434)
- D:S.Intest:Malabs (7441)
- D:Gen (7685)

LARGE INTESTINE

Granulomatous Colitis

503 GRANULOMATOUS COLITIS. *(E.)* Schlicke, C. P. (Spokane, Wash.), A. Logan and J. E.
ill. *Bull Soc Int Chir* 29(2):69-75, 1970.

504 CROHN'S DISEASE OF THE COLON. *(Ger.)* Widmer, A. (Canton Hosp. Aarau, Switzer-
and), R. Dippon and F. Deucher. *Helvetia Chir*
ta 37(1-2):185-189, 1970.

7505 TOXIC MEGACOLON COMPLICATING CROHN'S DISEASE OF THE COLON. *(E.)* Leoutsakos, B. (Evangelismos Med. Ctr., Athens, Greece) and G. Pedridis. *Amer J Proctol* 21(4):258-262, 1970.

- D:L.Intest:Ulccol (7499)

PANCREAS

06 PANCREATIC MALIGNANCY IN CHILDREN. *(E.)* Clatworthy, H. W., Jr. (Child. Hosp.,
lumbus, Ohio), J. L. Grosfeld and A. B. Hamoudi.
ch Surg 101(3):370-375, 1970.

07 PANCREATIC DISEASE SIMULATING RENAL ABNORMALITY. *(E.)* Guerrier, K. (Case Western
serve U. Sch. Med., Cleveland, Ohio) and L. Persky.
er J Surg 120(1):46-49, 1970.

08 PANCREATIC PSEUDOCYST CAUSING HEMOBILIA AND MASSIVE GASTROINTESTINAL HEMORRHAGE.
.) Dalton, W. E. (Johns Hopkins Hosp., Baltimore,
.), H. M. Lee, G. M. Williams and D. M. Hume.
er J Surg 120(1):106-107, 1970.

09 PANCREATODUODENECTOMY FOR BLUNT PANCREATODUODENAL INJURY. *(E.)* Gibbs, B. F. (Nav.
sp., Portsmouth, Va.), J. L. Crow and E. J. Rupnik.
Trauma 10(8):702-705, 1970.

7510 PALLIATIVE SURGERY IN CANCER OF THE BILE DUCTS AND PANCREAS. *(Ser.)* Ciric, S. S. (Med. Ctr., Vrsac, Yugoslavia). *Srpski Arh Celok Lek* 97(10):1085-1091, 1969.

7511 SUBCUTANEOUS RUPTURE OF THE PANCREAS. *(Rus.)* Fomin, L. A. (Novosibirsk, USSR). *Khirurgiia* 46(6):138-139, 1970.

- Diagproc (7214)(7216)(7221)(7241)(7259)(7285)(7293)
- D:Stomduo (7326)(7351)
- D:S.Intest (7414)
- D:S.Intest:Malabs (7450)
- D:Livbil (7567)
- D:Livbil:Gallb (7654)

PANCREAS

Pancreatitis

7512 THE ROLE OF LYSOSOMAL PROTEASES IN THE PATHOGENESIS OF PANCREATITIS. *(E.)* Berndt, W. (1st Med. U. Clin., Hamburg, Germany) and K. Muller-Wieland. *Pol Arch Med Wewnet* 44(4-5):535-537, 1970.

7513 CELLULAR AND SUBCELLULAR MECHANISMS IN ACUTE PANCREATITIS. *(E.)* Haig, T. H. B. (Roy. Coll. Physician Surgion Canada, Montreal, Quebec). *Ann Roy Coll Phys Surg Canada* 3(3):195-202, 1970.

7514 PATHOGENESIS OF ACUTE PANCREATITIS. *(Rus.)* Aruin, L. I. (1st Moscow Sechenov Med. Inst., USSR), T. Ya Vainshtein and E. A. Zhuk. *Biull Eksp Biol Med* 69(5):42-46, 1970.

7515 HEMODYNAMIC DISTURBANCES IN ACUTE PANCREATITIS. *(Rus.)* Laschevker, V. M. (Uzhgorod State University, Uzhgorod, USSR). *Klin Med* 48(6):38-42, 1970.

7516 DISTAL PANCREATIC DUCT INFLAMMATION. *(E.)* Acosta, J. M. (Harvard Med. Sch., Boston, Mass.), G. L. Nardi and F. Civantos. *Ann Surg* 172(2):256-263, 1970.

7517 CHRONIC PANCREATITIS AND HYPERLIPIDEMIA. *(Fr.)* Fraisse, H. (no affil), A. Beetschen, J. Duverne, J. Racouchot, A. Giraud and J. P. Etaix. *J Med Lyon* (1186):1099-1116, 1970.

7518 FUNCTIONAL INTERRELATIONSHIP OF PANCREAS AND ADRENAL CORTEX IN PATIENTS WITH CHRONIC PANCREATITIS AND ADDISON'S DISEASE. *(Rus.)* Tuzhilin, S. A. (First Moscow Med. Inst., Moscow, USSR), Z. Z. Tslaf and N. D. Belousova. *Sovet Med* 33(5):74-77, 1970.

7519 THE EFFECT OF PARENTERAL HIGH-PROTEIN NUTRITION ON THE EXTERNAL SECRETORY FUNCTION OF THE PANCREAS IN PATIENTS WITH CHRONIC PANCREATITIS. *(Rus.)* Yakhontovam, O. I. (Leningrad Med. Inst. Hyg., Leningrad, USSR) and L. N. Valenkevich. *Vop Pitan* 29(3):67-70, 1970.

7520 ELECTRIC STIMULATION OF THE DUODENUM IN THE DIAGNOSIS AND TREATMENT OF CHRONIC PANCREATITIS. *(Rus.)* Sokolov, V. I. (Sci. Res. Inst. Clinical and Experimental Surgery, Moscow, USSR), V. F. Smirnov and M. M. Oreshenkov. *Khirurgiia* 46(2):104-111, 1970.

7521 SERUM METHEMALBUMIN IN ACUTE PANCREATITIS. *(Rus.)* Laschevker, V. M. (Uzhgorod University, Uzhgorod, USSR). *Vestn Khir* 104(2):51-53, 1970.

7522 ORIGIN AND COURSE OF CHRONIC PANCREATITIS. *(Rus.)* Smagin, V. G. (Leningrad Med. Inst. Hygiene, Leningrad, USSR), O. I. Yakhontova and L. N. Valenkevich. *Klin Med* 48(2):126-129, 1970.

7523 SURGERY ON THE VEGETATIVE NERVOUS SYSTEM IN THE TREATMENT OF CHRONIC PANCREATITIS. *(Rus.)* Trunin, M. A. (Leningrad Med. Inst. Hygiene, Leningrad, USSR). *Sovet Med* 33(4):122-127, 1970.

- P:Gen (7206)
- Diagproc (7234)(7257)(7265)
- D:Gen (7679)

LIVER AND BILIARY TRACT

7524 PRIMARY CARCINOMA OF THE LIVER: I. PATHOLOGICAL ANATOMY, PRIMARY CANCER OF THE LIVER AND HEPATIC CIRRHOSIS. *(Ger.)* Ortmans, H. (St. Hosp. Kassel, Germany), H. Selmair and E. Wildhirt. *Munchen Med Wschr* 112(26):1245-1251, 1970.

The incidence, pathologic-anatomic characteristics, and correlations between cancer and cirrhosis of the liver were studied in 100 cases of primary hepatic carcinoma (89 male, 11 female), selected from a large number of patients with cirrhosis of the liver (2563) and from unselected autopsy material (5923). Cirrhosis was associated with 96 of 100 cases of primary hepatic carcinoma, and the frequency of primary carcinoma in alcoholic forms of cirrhosis was 2.8% and in cirrhosis associated with hemochromatosis, 14.3%. The incidence of carcinoma was highest in advanced age (50-70 yr), and an increase in absolute and relative occurrence was found in the last decade. Previously described pathologic-anatomic characteristics of primary hepatic carcinoma and a pronounced tendency to necrosis and hemorrhage were confirmed. The average weight of the carcinomatous liver was 2800 g although atrophic livers weighing below the norm (1000 g) were found in 4 cases. Extensive central necroses

: tumor nodes were found in half of the autopsied
ases and invasion of the tumor into the branches of
ie portal vein was observed in 18 out of 100 cases
.8%); the subsequent occurrence of ascites was noted
1 14 of 21 autopsied cases. The histologic differen-
.ation of 68 cases of primary hepatic carcinoma
owed the following distribution: hepato-cellular
56); cholangio-cellular (11); mixed form (1). The
creased occurrence of primary hepatic carcinoma
iring the last decade is explained by improved
eatment of the complications of hepatic cirrhosis
d the increasing chances of survival of the patients.

25 EFFECTS OF 3-METHYLCHOLANTHRENE PRE- TREATMENT ON MICROSOMAL HYDROXYLATION OF ACETAMIDOFLUORENE BY VARIOUS RAT HEPATOMAS. *(E.)*

tlikar, P. D. (Temple U. Sch. Med., Philadelphia,
.). *Biochem J* 118(3):513-518, 1970.

male Buffalo rats were used to determine the N-
d ring hydroxylation of 2-acetamidofluorene by
crosomal preparations of various transplantable
d primary hepatomas and their host livers and
dneys with and without 3-methylcholanthrene pre-
eatment of tumor-bearing animals. The liver of
treated control animals had much greater hydroxy-
ting activity than did kidney (25 vs 9 nmole/20
n/g wet tissue for N-hydroxy-2-acetamidofluorene);
etreatment with 3-methylcholanthrene increased
th N- and ring hydroxylating activity of liver
veral-fold. Well-differentiated Morris hepatomas
23C, 5123D, 5123CTC and 7800 and their host livers
l low hydroxylating activity, and 3-methylcholan-
rene produced a several-fold increase of both N-
d ring hydroxylation in the host livers but increa-
l only the ring hydroxylation in the tumors, except
hepatoma 5123CTC where both activities were
creased. Hydroxylating activities of poorly
fferentiated Morris hepatoma 7288CTC and Novikoff
atoma were low and unaltered by 3-methylcholan-
ene pretreatment. Primary hepatomas produced by
inistration of 4-dimethylamino-3'-methylazobenzene
ild be stimulated to some extent with 3-methylcho-
threne pretreatment. Like host livers, N- and
g hydroxylation activities in kidneys of tumor-
ring animals could also be stimulated to some
ent by 3-methylcholanthrene pretreatment.

6 RELATIONSHIP OF SERUM TOCOPHEROL TO β- LIPOPROTEIN CONCENTRATIONS IN LIVER EASES. *(E.)*

Kater, R. M. H. (Boston City Hosp.,
s.), W. J. Unterecker, C. Y. Kim and C. S.
idson. *Amer J Clin Nutr* 23(7):913-918, 1970.

tocopherol and β-lipoprotein concentrations in
a of patients with various liver diseases (36
te infectious hepatitis, 27 acute alcoholic
atitis, 55 alcoholic cirrhosis, 34 fulminant
atic failure), hospitalized patients with other
eases, and healthy controls were compared. Sig-
icant depression of mean tocopherol concentration
found in patients with severe cirrhosis (0.49 mg/
ml) and patients with fulminant hepatic failure
42 mg/100 ml) compared with any of the other 5 groups including hospitalized controls (0.92 mg/100 ml). Mean serum tocopherol concentrations in patients with acute viral hepatitis (0.98 mg/100 ml) and acute alcoholic hepatitis (1.10 mg/100 ml) did not differ significantly from those of healthy controls. No significant difference was found between the mean serum tocopherol concentration in patients whose diet was considered to be adequate (0.84 mg/100 ml) and those whose diets were grossly deficient (0.89 mg/100 ml). A direct correlation between the serum tocopherol and β-lipoprotein concentrations was found (r = 0.894), indicating that the tocopherol concentration was proportional to the β-lipoprotein level in the sera of these patients. In severe liver disease a critical degree of malfunction may be reached when β-lipoprotein production is impaired sufficiently to cause a decrease in serum tocopherol.

7527 FASTING HYPOGLYCEMIA AND METABOLIC ACIDOSIS ASSOCIATED WITH DEFICIENCY OF HEPATIC FRUCTOSE-1,6-DIPHOSPHATASE ACTIVITY. *(E.)*

Baker, L. (Sch. Med. U. Pennsylvania, Philadelphia) and A. I. Winegrad. *Lancet* 2(7662):13-16, 1970.

A child with fasting hypoglycemia and metabolic acidosis associated with deficiency of hepatic fructose-1,6-diphosphatase activity was described. After a 12 hr overnight fast (following an extended normal diet) her blood glucose was 56 mg% with no accompanying abnormality in pH, plasma free fatty acids, blood ketones or blood lactate; after 21 hr of fasting the blood glucose was under 10 mg%, and 1 mg of glucagon, i.v., resulted in no rise in blood glucose. Plasma free fatty acids and blood ketone levels rose progressively during the fast, reaching levels found in patients with moderate diabetic acidosis. The blood lactate reached 5.5 mEq/l and contributed significantly to the metabolic acidosis. At the end of the investigation, the arterial pH was 7.17, the CO_2 was 9.3 mEq/l, and the uric acid content was 12.3 mg% (control 5.3 mg%). The child had a normal glucose tolerance and a normal rise of blood glucose after p.o. galactose; plasma insulin levels were normal during both studies (fasting level was 14μU/ml, peak value was 109μU/ml ½ hr after glucose ingestion, and levels 3 hr after glucose ingestion were 25 μU/ml. Both fructose and glycerol given p.o. after an overnight fast produced hypoglycemia along with a significant rise in the blood uric acid concentration and a fall in the inorganic phosphate. No evidence of hyperinsulinemia was observed, and hereditary fructose intolerance was excluded by the demonstration of normal levels of hepatic fructose-1-phosphate aldolase and of fructose-1,6-diphosphate aldolase activities in the liver biopsy specimens. No fructose-1,6-diphosphatase could be demonstrated in the supernatant fraction of the patient's liver homogenate when assayed at neutral or alkaline pH by either spectrophotometric or fluorimetric techniques. An inherited deficiency of hepatic fructose-1,6-diphosphatase activity was probably the basis for a previously unrecognized disease, characterized by episodes of fasting hypoglycemia and metabolic acidosis.

7528 HEPATIC GLUCURONYL-TRANSFERASE ACTIVITY IN CONGENITAL AND ACQUIRED LIVER DISEASE. *(E.)* Frezza, M. (Clin. Gen. Med., U. Padua, Italy), G. De Sandre and G. Persona. *Acta Hepatosplen* 17(3):165-174, 1970.

The pathogenic and diagnostic significance of glucuronyl-transferase activity was investigated in liver biopsies from 7 normal subjects, 9 cirrhotics, 1 case of chronic obstructive jaundice, 3 cases of subacute hepatitis, 5 cases of simple post-hepatitis cholemia, 13 cases of Gilbert's disease, 4 cases of Dubin-Johnson syndrome, 2 cases of Rotor cholemia and 4 cases of hyperhemolytic jaundice. Glucuronyl-transferase activity was expressed as nmoles of substrate (4-methyl-umbellipherone) glucuro-conjugated by 1 mg of hepatic proteins in 30 min. The enzyme activity in normal patients, patients with Dubin-Johnson syndrome and Rotor cholemia, patients with Gilbert's disease, and in patients with post-hepatitis cholemia averaged 172, 141, 80, and 98, resp., with normal values ranging from 78 to 266. In subacute hepatitis and hepatic cirrhosis the glucuronyl-transferase activity appeared to be lowered, while in hemolytic jaundice, the activity seemed normal.

7529 NONKETOTIC HYPERGLYCINEMIA: AN *IN VITRO* STUDY OF THE GLYCINE-SERINE CONVERSION IN LIVER OF THREE PATIENTS AND THE EFFECT OF DIETARY METHIONINE. *(E.)* Hommes, F. A. (Dept. Pediat., St. U. Groningen, Netherlands), C. J. De Groot and J. A. Troelstra. *Pediat Res* 4(3):238-243, 1970.

Liver biopsies were performed on 3 patients suffering from nonketotic form of hyperglycinemia, and the liver homogenates were incubated under anaerobic conditions with ^{14}C-1-glycine and ^{14}C-2-glycine. The rates of incorporation into serine were similar, while under normal conditions the ratio of incorporation of ^{14}C-2-glycine/^{14}C-1-glycine is higher than 1 with a maximum of 2, indicating that the enzymic defect underlying this disease is due to the absence or nonfunction of the glycine cleavage system. In patients with hyperglycinemia, serine to glycine conversion was normal and since glycine formed in this reaction could not participate as a C_1-unit donor, accumulation occurred. The addition of methionine to a diet devoid of serine and glycine caused levels of glycine in plasma to fall to normal values in 10 days.

7530 SERUM α-FETOPROTEIN AND PRIMARY CANCER OF THE LIVER IN MAN. *(E.)* Purves, L. R. (South African Inst. Med. Res., Johannesburg), I. Bersohn and E. W. Geddes. *Cancer* 25(6):1261-1270, 1970.

Cases with abnormal liver function tests, Bantu blood donors, neonates, Caucasian patients with primary cancer of the liver, and male Bantu mine workers with primary cancer of the liver were investigated by immunodiffusion assay and radioimmunoassay for the presence of α-fetoprotein in the serum. In a series of 93 post mortem proven cases of liver pathology and in a larger series of 130 post mortem and biopsy proven patients with liver disorders, α-fetoprotein was positive in 82% and 78% of the cases, resp. No α-fetoprotein positive case coming to post mortem (more than 200 cases) was found lacking a primary liver cancer (no cases of embryonal tumor were encountered). The response to cancer chemotherapy (including mitomycin C, actinomycin D, alanine mustard and 6-mercaptopurine) was poor except in 3 cases which responded clinically and which were α-fetoprotein positive and clinical improvement was closely matched by a fall in the α-fetoprotein level. There was no correlation between α-fetoprotein and clinical data (age, tribe, weight, survival time) or histologic and morbid anatomical data (weight of the tumor or the liver or degree of differentiation of the tumor). The positivity rate was lower in noncirrhotics on admission (53%) than in cirrhotics (81%). α-Fetoprotei was detected in 98% of random neonatal serum cord blood samples, but none was detected in a single case out of 1384 blood samples obtained from healthy Bantu mine workers.

7531 MALIGNANT HEPATOMA IN THE BANTU. *(E.)* Geddes, E. W. (Dept. Cancer Chemother., U. Pretoria, Union of South Africa) and G. Falkson. *Cancer* 25(6):1271-1278, 1970.

Various cytostatic agents and/or radiotherapy were used to treat 129 of 189 male Bantu patients with histologically proven primary carcinoma of the liver, while 56 patients served as controls. The average survival time from the onset of symptoms was 4 months, and from the time of histologic diagnosis survival time was only 2 months. Tests for alpha-fetoprotein were positive in 78% of the confirmed cases with no false-positive results. No clinically detectable metastases at the time of diagnosis were observed in 78% of the 189 cases and at autopsy, 32% of the 167 patients examined had cancer confined to the liver, but lung metastases were found in 51%. Chemotherapy and radiotherapy extended the mean survival time 4 to 7 months, and intra-arterial methotrexate was the most efficacious agent, producing partial remission; no complete remissions were observed.

7532 A CLINICAL AND HISTOCHEMICAL STUDY OF CHOLESTASIS. *(E.)* Desmet, V. J. (Acad. Hosp., St. Rafael, Louvain, Belgium), A. M. Bullens and J. DeGroote. *Gut* 11(6):516-523, 1970.

Four types of cholestasis were defined in a histochemical study of conjugated and total bilirubin made on liver biopsies of 150 patients (29 cases of acute hepatitis, 17 cases of chronic persistent hepatitis, 10 cases of chronic aggressive hepatitis A, 18 cases of cirrhosis, 24 cases of extralobular obstruction, 11 cases of steatosis, 29 cases of various other disorders, and 12 normal livers). Type 0 comprised those cases without visible bile pigment, i.e., no cholestasis, while type I was characterized by the presence of intracellular pigment granules in the hepatocytes. Type II was characterized by intracellular granules and extracellular thrombi (this group was subdivided according to the eventual presence of coarse pigment deposits in the parenchymal cells). Type III was characterized by intracellular granules, extracellular thrombi, and also bile pigment in the

Kupffer cells. The fine liver cell granules and extracellular thrombi contained mainly conjugated bilirubin, whereas the coarse liver granules and Kupffer cell pigment usually contained unconjugated pigment. In Types II and III a diffuse and directly reacting pigment was also observed. Mean serum bilirubin levels were significantly different between Types I and II and between Types II and III (0.93, 3.93 and 14.05 mg/100 ml, resp.), while nearly identical levels were found in Types 0 and I (0.89 and 0.93 mg/100 ml, resp.). A correlation between the different types of cholestasis, the level of bilirubinemia, and its dynamic evolution suggested that these 4 types of cholestasis may represent successive stages of increasing cholestasis, but no type of cholestasis was typical.

7533 SPECIFICITY OF CERTAIN BIOCHEMICAL DERANGEMENTS IN HEPATOCARCINOGENESIS.

(E.) Reid, E. (Roy. Cancer Hosp., London, England). *Brit J Cancer* 24(1):128-137, 1970.

Biochemical studies were performed on livers obtained from rats placed on diets containing either ethionine or α-naphthylisothiocyanate; ethionine-induced hepatomas were also studied. Proliferation of bile duct cells was the only histologic abnormality noted with α-naphthylisothiocyanate; fat deposition was the only change noted with ethionine. Nucleotide levels in α-naphthylisothiocyanate-treated rats did not decrease but there were slight increases in AMP and GDP. There was a decrease in the nucleotide triphosphate levels of ethionine-treated rats as determined by the values for the mixed peak containing UTP and GTP and for the mixed peak rich in ATP. ADP and GDP were significantly although not sharply decreased. NAD and NADPH were also decreased in the ethionine-treated rats and NADP and NADPH were sharply decreased in ethionine-induced hepatomas. The mitochondrial fraction of liver homogenates from both groups of rats showed a decrease in the content of acid-soluble nucleotides particularly after 3 weeks of feeding; AMP, ATP and $NADPH_2$ were also lowered following 3-7 weeks of ethionine feeding. The protein of the mitochondrial and microsomal fractions was unaffected by ethionine while the protein of the mitochondrial fraction was diminished by α-naphthylisothiocyanate. In livers from ethionine-fed rats and ethionine-induced hepatomas, enzyme activity in the synthesis of UMP was increased.

7534 ACCELERATED INDUCTION OF HEPATOMA IN RATS FED N,N'-2,7-FLUORENYLENEBISACETAMIDE BY X-IRRADIATION TO THE TARGET AREA.

(E.) Nagayo, T. (Aichi Cancer Ctr. Res. Inst., Nagoya, Japan), M. to and S. Yamada. *Gann* 61(1):81-83, 1970.

The effects of N,N'-2,7-fluorenylenebisactamide eeding and X-irradiation on hepatoma growth were tudied in Buffalo rats. In macroscopical and microcopical examinations, hepatoma nodules were found ithin the area exposed to irradiation. Livers of nimals fed continuously with N,N'-2,7-fluorenyleneisacetamide were the same as livers of animals with he same diet and in addition were irradiated; observations revealed an unstable state of liver parenchyma such as bile ductule proliferation along Glisson's sheath, nodular hyperplasia, cholangiofibrosis, and foci composed of basophilic small hepatic cells, but no malignant changes were observed. The group receiving only X-irradiation alone was found normal, histologically. The duration of the carcinogen feeding was 27 weeks and at this time, no hepatoma was observed in either sex. X-Irradiation appears to accelerate neoplastic changes of liver due to N,N'-2,7-fluorenylenebisacetamide, and may lead to induction of hepatomas in a relatively short time.

7535 ANAEROBIC GLYCOLYSIS AND PATTERNS OF GLYCOLYTIC INTERMEDIATES DURING LIVER CARCINOGENESIS AND IN HEPATOMA.

(E.) Gaja, G. (Inst. Gen. Path., U. Milan, Italy), F. Gajone, M. E. Ferrero and A. Bernelli-Zazzera. *J Natl Cancer Inst* 44(6):1269-1280, 1970.

Anaerobic glycolysis and patterns of glycolytic intermediates during liver carcinogenesis and in Morris hepatoma 5123 were investigated in rats. During treatment with p-dimethylaminoazobenzene, which was accompanied by an increase in the basal glycolytic rate and in glycogen breakdown (control 65.0; treatment (3 days) 18.9 mg/g), glycolytic stimulation was always detectable in liver slices from treated animals, but it occurred at a reduced extent, not correlated with the duration of the treatment. Glycolytic stimulation disappeared suddenly in well developed p-dimethylaminoazobenzene induced hepatomas. Changes in the concentration pattern of glycolytic intermediates, particularly fructose diphosphate, triose phosphate, α-glycerolphosphate, and 3-phosphoglycerate (control 29.3, 31.3, 1571, 57.2; hepatoma treated 91.9, 31.8, 341, 70.1 nmoles/g fresh tissue, resp.), supported the view that hepatoma glycolysis was not controlled at steps which, in the normal homologous tissue, limit the metabolic flow after the level of triose phosphates or by oxygen. The pattern of glycolytic intermediates in p-dimethylaminoazobenzene fed rats was consistant with the fact that glycolytic stimulation, though reduced, was still present.

7536 RETENTION OF METABOLIC REGULATION IN THE HYPERPLASTIC HEPATIC NODULE INDUCED BY *N*-2-FLUORENYLACETAMIDE.

(E.) Teebor, G. W. (New York U. Med. Ctr., New York) and I. Seidman. *Cancer Res* 30 (4):1095-1101, 1970.

The pattern of induction of several corticosteroid-mediated enzyme responses during a period of *N*-2-fluorenylacetamide carcinogenesis which yielded a high percentage of hyperplastic hepatic nodules in rats was investigated. At 12 weeks, over 90% of the male rats contained hepatic nodules (75% of which ranged from 0.5-1.0 cm in diameter). The nodules were pale-tan and fleshy, and protruded from the external and sliced surface of the liver. The cells of the hyperplastic areas were larger than the adjacent parenchyma, the cytoplasm was granular, and the nuclei were vesicular with prominent nucleoli. At 4 weeks, carcinogen fed male and female rats both demonstrated a 30-50% decrease in basal glucose-6-phosphatase activity in both untreated and detergent-treated (0.2% deoxycholate) microsomal preparations. Subjecting the rats to a 24 hr starvation period resulted in an increase to control levels of glucose-6-phosphatase activity in male rats which was apparent only in the detergent-treated preparation. Basal activity of hepatic tyrosine transaminase in carcinogen-fed rats was 50-60% of controls at 4 weeks and remained at this level throughout the 12 week period in both males and females, and basal tryptophan pyrrolase activity was half that of controls in both males and females at 8 weeks but was near normal at 12 weeks. Induction of both tyrosine transaminase and tryptophan pyrrolase by hydrocortisone was the same in control and carcinogen-fed rats at 12 weeks, and induction of glucose-6-phosphatase by triamcinolone was normal in both groups also.

7537 EFFECTS OF EXOGENOUS HISTONES UPON THE INDUCTION OF TRYPTOPHAN PYRROLASE AND TYROSINE TRANSAMINASE IN LIVER AND MORRIS HEPATOMAS.

(E.) Strobel, H. W., Jr. (Sch. Med. U. North Carolina, Chapel Hill), J. L. Irvin and H. P. Morris. *Cancer Res* 30(4):1075-1080, 1970.

The effects of injected histones and poly-L-lysine upon the induction of tryptophan pyrrolase and tyrosine transaminase of Morris hepatomas (5123tc, 5123A, 5123C, 7793, and 7795) were compared with effects upon induction of these enzymes in the livers of the tumor-bearing rats. Hepatoma 5123tc in intact or adrenalectomized Buffalo rats had a low basal level of tryptophan pyrrolase activity and a high basal level of tyrosine transaminase activity compared to normal liver. Both enzymes were induced by hydrocortisone, but the induced level of tryptophan pyrrolase in the hepatoma was less than in the liver. Injections of histones or poly-L-lysine induced only tryptophan pyrrolase in the hepatoma in adrenalectomized rats. The rate of decline of induced tryptophan pyrrolase activity in the 5123tc hepatoma in the presence of puromycin was identical to the rate of decline in normal liver, indicating that the low basal levels and weak inducibility of this enzyme is probably due to a defect in its synthesis, rather than to an accelerated rate of degradation. However, no decline of hydrocortisone-induced tyrosine transaminase activity in the hepatoma was seen during an 8 hr period after induction compared to normal liver, in which the $t_{1/2}$ of the enzymes was 2.9 hr. Consequently, the high basal level of tyrosine transaminase in this hepatoma is probably due to a low rate of degradation rather than a high rate of synthesis; the rate of degradation of tyrosine transaminase in the liver of rats bearing this hepatoma was also decreased compared to normal liver, suggesting that the tumor may produce a circulating inhibitor of the degradative system for tyrosine transaminase.

7538 PRIMARY CARCINOMA OF THE LIVER: II. CLINICAL ASPECTS, LAPAROSCOPY, FUNCTIONAL DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF HEPATIC CIRRHOSIS.

(Ger.) Ortmans, H. (St. Hosp. Kassel, Germany), H. Selmair and E. Wildhirt. *Munchen Med Wschr* 112(26):1251-1257, 1970.

Clinical course, laparoscopic examination and chemical laboratory tests were used as criteria for the differential diagnosis of primary carcinoma and cirrhosis of the liver. One hundred and three cases of primary hepatic carcinoma were diagnosed by laparoscopy (32), by laparoscopy and histological investigation of biopsy material (6), at autopsy (64), and by post mortem liver biopsy (1); hepatic cirrhosis was present in 99 of the 103 cases. In order to facilitate the differential diagnosis between primary carcinoma associated with regenerative cirrhosis and active cirrhosis, significance calculations of laboratory tests were performed in 2 comparable groups of 30 cases of primary carcinoma and of 30 cases of cirrhosis of the liver. The values of alkaline serum phosphatase showed a significant difference between hepatic carcinoma (134.38 ± 79.76 mU/ml) and hepatic cirrhosis (47.24 ± 20.83 mU/ml). The serum bilirubin level showed a significant difference (mean value difference 3.17 ± 1.2094 mg%) indicating that either the tumor itself or its effects cause an occlusion syndrome of the draining bile ducts. Serum transaminase and lactate dehydrogenase did not show statistically significant differences; the serum iron level was distinctly lower in the carcinoma group, while some fractions of serum electrophoresis were increased.

7539 EXPERIMENTAL HISTOLOGICAL AND ELECTRON MICROSCOPIC STUDY OF THE LIVER IN SHOCK.

(Fr.) Feroldi, J. (Hosp. Eduoard Herriot, Lyon, France), Y. Mallet-Guy, P. Braconnot, R. Guillet and P. Mallet-Guy. *Lyon Med* 65(5):720-734, 1969.

Conditions of hemorrhagic shock were produced in 27 heparinized (2 mg/kg) dogs by bleeding. Arterial pressure stabilizing between 50 and 90 mm Hg was considered to simulate moderate shock and below 50 mm, severe shock. Congestion, edema of the hepatic parenchyma, accompanying lesions of the sinusoidal wall, dilatation of the space of Disse, changes in the endothelial border observed as early as 2 hr after bleeding were probably related to the hemodynamic changes in shock, in particular, to the increase of hepatic resistance to portal circulation. Cytological lesions characterized by disapperance of glycogen and structural alterations of mitochondria and rough endothelium which correlate with hyperglycemia and increased blood levels of lactic acid may indicate altered citric acid cycle activity.

7540 MORPHOLOGICAL DIFFERENCES BETWEEN ESOPHAGEAL AND PORTAL VEINS IN PORTAL HYPERTENSION.

(Rus.) Patsiora, M. D. (Fity Second Hosp., Moscow, USSR), K. M. Odina and A. K. Eramishantsev. *Sovet Med* 33(4):138-140, 1970.

7541 COAGULOGRAM AND THROMBOELASTOGRAM IN LIVER RESECTION.

(Rus.) Sosnina, T. P. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):34-36, 1970.

7542 CANALIZATION OF HEPATIC DUCTS IN THEIR CANCEROUS OBSTRUCTION. *(Rus.)* Bel'skiy, A. V. (Saratov Med. Inst., Saratov, USSR). *Khirurgiia* 46(2):61-65, 1970.

7543 FUNCTIONAL HEPATIC INSUFFICIENCY AFTER RESECTION OF THE SMALL INTESTINE. *(Rus.)* Siparov, I. N. (Vitebsk Med. Inst., Vitebsk, USSR). *Khirurgiia* 46(2):117-120, 1970.

7544 THE CONCENTRATIONS OF Mn, Cu AND Zn AT VARIOUS TIMES IN THE LIVER, SPLEEN AND THYMUS OF RATS BEARING YOSHIDA ASCITES SARCOMAS. *(Ger.)* Zimmerer, J. (German Cancer Ctr., Heidelberg), H. Wesch and E. B. Dogan. *Z Krebsforsch* 74(1):15-19, 1970.

7545 INFECTIOUS MONONUCLEOSIS WITH HEPATIC AND RENAL INVOLVEMENT. *(E.)* Brun, C. (Commun. Hosp., Copenhagen, Denmark), S. Madsen and S. Olsen. *Scand J Gastroent* 5(supp. 7):89-95, 1970.

7546 HYPERSPLENISM AND PORTAL HYPERTENSION. *(E.)* Tumen, H. J. (Grad. Hosp. U. Pennsylvania, Philadelphia). *Ann NY Acad Sci* 170(1):332-344, 1970.

7547 ACTIVITIES OF HEXOKINASES AND DEHYDROGENASES OF THE PENTOSE-PHOSPHATE CYCLE IN TRANSPLANTED HEPATOMAS OF MICE. *(Rus.)* Ilyin, V. S. (Inst. Exp. Clin. Med. Estonian SSR Min. Hlth., Tallinn, USSR), L. E. Teras, L. A. Kildema, R. V. Birk and E. I. Pyldvere. *Vop Med Khim* 16(1):51-58, 1970.

7548 FUNCTION OF THE LIVER IN PATIENTS WITH SYRINGOMYELIA. *(Rus.)* Tsvetkova, V. V. (Inst. Postgrad. Med. Training, Kiev, USSR) *Vrach Delo* (2):92-94, 1970.

7549 BLOOD SERUM AND URINARY AMINE NITROGEN AND THE FUNCTIONAL CONDITION OF THE LIVER IN KIDNEY DISEASES. *(Rus.)* Nikula, T. D. (Kiev ed. Inst., Kiev, USSR) *Vrach Delo* (2):54-57, 1970.

7550 ENZYME RELEASE AND ENZYME ELIMINATION: A CONTRIBUTION TO PATHOPHYSIOLOGY AND IAGNOSIS OF LIVER DISEASES. *(E.)* Bar, U. (Hannover ed. Sch., Germany). *Pol Arch Med Wewnet* 4(4-5):543-547, 1970.

551 SERUM PROTEOLYTIC ACTIVITY BOUND WITH α_2-MACROGLOBULIN IN HEPATO-BILIARY ISEASES. *(E.)* Szczeklik, A. (Wroclaw Sch. Med., oland). *Pol Arch Med Wewnet* 44(4-5):331-336, 1970.

7552 CAUSE OF ABNORMAL BLEEDING AFTER TRANSPLANTATION OF PIG LIVER STORED BY A PERFUSION TECHNIQUE. *(E.)* Perkins, H. A. (U. California Sch. Med., San Francisco), R. E. May and F. O. Belzer. *Arch Surg* 101(1):62-68, 1970.

7553 RECURRENT CHOLESTASIS OF PREGNANCY: TREATMENT WITH CHOLESTYRAMINE OF ONE CASE WITH AN UNUSUALLY EARLY ONSET. *(E.)* Engstrom, J. (Serafimer Hosp., Stockholm, Sweden), K. Hellstrom, N. Posse and J. Sjovall. *Acta Obstet Gynec Scand* 49(1):29-34, 1970.

7554 HYPOPLASIA OF TERMINAL BILE DUCTS: OCCURRENCE IN TWO JAUNDICED MALE SIBLINGS. *(E.)* MacMahon, H. E. (Tufts U. Sch. Med., Boston, Mass.) and G. J. Gherardi. *Amer J Dis Child* 120(2):151-153, 1970.

7555 TOTAL RIGHT HEPATIC LOBECTOMY FOR BLUNT MASSIVE LIVER INJURY. *(E.)* Komorn, H. J. (Sinai Hosp. Detroit, Michigan). *Bull Sinai Hosp Detroit* 18(3):76-80, 1970.

7556 HEPATOBLASTOMA AND HEPATOCARCINOMA IN INFANCY AND CHILDHOOD: REPORT ON THE PATHOLOGY OF EIGHT CASES FROM THE UNIVERSITY HOSPITAL, COPENHAGEN. *(E.)* Schiodt, T. (U. Hosp., Copenhagen, Denmark). *Acta Path Microbiol Scand* (suppl. 212):181-192, 1970

7557 PORTAL HYPERTENSION UNDER VARIOUS EXPERIMENTAL CONDITIONS OF THE LIVER. *(Rus.)* Galperin, E. I. (N. V. Sklifosovski Sci. Res. Inst., Moscow, USSR), M. V. Rudenskaya and K. S. Kovalskaya. *Eksp Khir Anest* 15(1):19-22, 1970.

7558 LIVER TRANSPLANT IN MAN: IMMUNE THERAPY. *(Ger.)* Lie, T. S. (Surg. U. Clin. Polyclin., Bonn, Germany) and J. Breuer. *Bruns Beitr Klin Chir* 218(2):109-118, 1970.

7559 GLYCOGEN STORAGE DISEASE IN INDIANS. *(E.)* Wadia, R. S. (Sassoon Gen. Hosp., Poona, India), R. N. Ichaporia, K. B. Grant, D. P. Karmarkar and N. V. Khalap. *J Ass Physicians India* 18(6):551-555, 1970.

7560 METASTASES OCCURRING AFTER EXCISION OF A TRANSPLANTABLE SUBCUTANEOUS HEPATOMA. *(E.)* Reuber, M. D. (Natl. Cancer Inst., Natl. Inst. Hlth., Bethesda, Md.) and B. P. Wagner. *Gann* 61(2):191-192, 1970.

7561 EPITHELIAL HEPATOBLASTOMA ASSOCIATED WITH CONGENITAL HEMIHYPERTROPHY AND CYSTATHIONINURIA: PRESENTATION OF A CASE. *(E.)* Geiser, C. F.

(Harvard Med. Sch., Boston, Mass.), A. Baez, A. M. Schindler and V. E. Shih. *Pediatrics* 46(1):66-73, 1970.

7562 ALKAPTONURIA AND GILBERT'S SYNDROME. *(E.)* Brown, N. K. (U. Washington Sch. Med., Seattle) and E. A. Smuckler. *Amer J Med* 48(6):759-765, 1970.

7563 BINDING OF 7,12-DIMETHYLBENZ(A)ANTHRACENE AND BENZO(A)PYRENE TO NUCLEIC ACIDS AND PROTEINS OF ORGANS IN RATS. *(E.)* Prodi, G. (Inst. Gen. Path., U. Bologna, Italy), P. Rocchi and S. Grilli. *Cancer Res* 30(4):1020-1023, 1970.

7564 SUCCESSFUL DESENSITIZATION WITH PENICILLIN G (BENZYLPENICILLIN) OF PENICILLAMINE SENSITIVE PATIENTS SUFFERING FROM WILSON'S DISEASE. *(Ger.)* Metz, G. (Derm. Clin., Polyclin., U. Wurzburg, Germany), I. Pevny and J. Metz. *Munchen Med Wschr* 112(29):1341-1348, 1970.

7565 EFFECTS OF COMBINED ARGININE AND ORNITHINE ADMINISTRATION ON ARTERIAL AMMONIA LEVELS IN CHRONIC LIVER DISEASES AND HEPATIC COMA. *(Por.)* Miszputen, S. J. (Hosp. Sao Paulo, Brazil), A. J. Ganc, A. A. Costa, S. Reibscheid and M. P. Vilela. *Rev Ass Med Brasil* 14(7):117-122, 1970.

7566 THE CEREBRO-HEPATO-RENAL SYNDROME (CHRS): ZELLWEGER'S SYNDROME. *(E.)* Poznanski, A. K. (Dept. Radiol., U. Michigan, Ann Arbor), J. S. Nosanchuk, J. Baublis and J. F. Holt. *Amer J Roentgen* 109(2):313-322, 1970.

7567 BILE ACID CONCENTRATIONS IN SERUM DURING INFANCY AND CHILDHOOD. *(E.)* Sandberg, D. H. (U. Miami Sch. Med., Fla.) *Pediat Res* 4(3)262-267, 1970.

7568 PRIMARY SCLEROSING CHOLANGITIS: COMPLETE GROSS AND HISTOLOGIC REVERSAL AFTER LONG-TERM STEROID THERAPY. *(E.)* Myers, R. N. (Jefferson Med. Coll., Philadelphia, Pa.), J. H. Cooper and N. Padis. *Amer J Gastroent* 53(6):527-538, 1970.

7569 GIANT HEMANGIOMAS OF THE LIVER. *(E.)* Adam, Y. G. (Albert Einstein Coll. Med., Bronx, N.Y.), A. G. Huvos and J. G. Fortner. *Ann Surg* 172(2):239-245, 1970.

7570 LIGATION OF THE HEPATIC ARTERY IN THE TREATMENT OF HEART FAILURE DUE TO HEPATIC HEMANGIOMATOSIS. *(E.)* Rake, M. O. (King's Coll. Hosp., London, England), M. M. Lieberman, J. L. Dawson, R. Evans, E. B. Raftery, J. Laws and R. Williams. *Gut* 11(6):512-515, 1970.

7571 HEPATIC ARTERY LIGATION FOR METASTATIC TUMOR IN THE LIVER. *(E.)* Madding, G. F. (Burlingame, Calif.), P. A. Kennedy and E. Sogemeier. *Amer J Surg* 120(1):95-96, 1970.

7572 LOSS OF CYCLIC 3'5'-AMP DEPENDENT KINASE AND REDUCTION OF PHOSPHORYLASE KINASE IN SKELETAL MUSCLE OF A GIRL WITH DEACTIVATED PHOSPHORYLASE AND GLYCOGENOSIS OF LIVER AND MUSCLE. *(E.)* Hug, G. (U. Cincinnati Coll. Med., O.), W. K. Schubert and G. Chuck. *Biochem Biophys Res Commun* 40(4):982-988, 1970.

7573 AN EXPERIMENTAL HEPATORENAL SYNDROME. *(E.)* Gliedman, M. L. (Montefiore Hosp., Bronx, New York), H. J. Carroll, L. Popowitz and J. F. Mullane. *Bull Soc Int Chir* 29(2):99-103, 1970.

7574 LIVER FUNCTION IN TICK-BORN ENCEPHALITIS WITH A TWO-WAVE COURSE. *(Rus.)* Chukavina, A. I. (no affil). *Klin Med* 48(2):90-93, 1970.

- P:Morph (7033)(7041)
- P:Secr:Hepatobil (7116)(7117)(7148)(7150)
- Diagproc (7213)(7218)(7219)(7220)(7231)(7235) (7246)(7247)(7271)(7272)
- D:Stomduo (7340)
- D:Pancreas (7510)
- D:Livbil:A.Nonv.Hep (7589)(7596)(7598)
- D:Livbil:C.Hep (7630)
- D:Livbil:Cirrh (7634)(7645)(7646)
- D:Livbil:Gallb (7656)(7674)(7675)
- D:Gen (7681)(7694)(7727)(7728)(7750)
- D:Gen:Parasit (7753)(7754)(7758)(7760)(7762) (7764)(7769)(7770)

LIVER AND BILIARY TRACT

Acute Nonviral Hepatitis and Hepatic Injury

7575 STUDIES ON DAMAGE TO THE LIVER BY ALCOHOL. *(E.)* Trethewie, E. R. (Dept. Physiol., U. Melbourne, Australia). *Med J Aust* 57(19):932-935, 1970.

The effect of alcohol on the release of histamine from the perfused canine and feline livers was investigated. Histamine was released by the dog liver injected intraportally with ethyl alcohol (1 ml/70 g of liver), but not by the cat liver. Histological changes, with an increased number of cells in the portal tracts were normally found in both cats and dogs, the changes being more significant and appearing sooner in the latter. Cloudy swelling of the liver parenchyma, and in some areas, small round cells which largely replace diffusely degenerating liver cells, may be produced by alcohol. Antihistamines may be useful in treating patients suffering from alcoholic intoxication, as it may inhibit cirrhosis.

7576 HISTOCHEMICAL LOCALIZATION OF VARIOUS ENZYMES IN HUMAN FATTY LIVER CAUSED BY MODERATE ALCOHOL CONSUMPTION. *(E.)* Petersen, P. (U. Hosp. Copenhagen, Denmark). *Acta Path Microbiol Scand* 78(2):161-168, 1970.

Biopsy specimens from 24 patients (20 men, 4 women, 20 to 76 yr) with fatty liver due to moderate alcohol consumption were used for histochemical determinations of acid phosphatase, alkaline phosphatase, ATPase, non-specific esterase and various oxidative enzymes. Control specimens were obtained from 5 patients with lymphadenopathy, 4 of whom had sarcoidosis Boeck with only a single granuloma found in the liver biopsy. Demonstration of lysosomal changes by the acid phosphatase reaction indicated degenerative changes in the fatty livers, and non-specific esterase and oxidative enzyme reactions demonstrated both degenerating and regenerating cells. Mitochondrial damage was indicated by a lack of enzyme activity in the cells and morphological changes in the reaction product of NADH-diaphorase. Changes in ATPase and alkaline phosphatase activities were localized in areas in which biliary capillaries were displaced in some of the fatty livers.

7577 PYRAZOLE AND INDUCTION OF FATTY LIVER BY A SINGLE DOSE OF ETHANOL. *(E.)* Bustos, G. O. (Dept. Pharmacol., U. Toronto, Ontario, Canada), H. Kalant, J. M. Khanna and J. Loth. *Science* 168(3939):1598-1599, 1970.

The administration of pyrazole (272 mg/kg i.p.) 10 min before ethanol administration (4 g/kg by stomach tube) to female rats prevented ethanol disappearance from the blood up to 16 hr (593 mg/100 ml for pyrazole-treated and 160 mg/100 ml for control animals at 16 hr). Pyrazole also prevented the reduction in the ratio of hepatic NAD to $NADH_2$ produced by ethanol alone (2.98, 1.32, resp.). However, pyrazole did not prevent the accumulation of hepatic triglycerides caused by ethanol (control, 29.17; pyrazole-treated, 32.13 mg/g liver).

7578 PREVENTION OF THE ETHANOL-INDUCED FATTY LIVER IN THE RAT BY PHENOBARBITAL. *(E.)* Isselbacher, K. J. (Massachusetts Gen. Hosp., Boston), R. S. Koff, E. A. Carter and S. Lui.

The effect of phenobarbital (80 mg/kg, daily for 4 days) on the prevention of the ethanol-induced (4.8 g/kg, single dose) fatty liver in the female rat was investigated by liquid scintillation counting, enzyme assay, and electron microscopy. Although hepatic triglyceride levels were similar in saline- and phenobarbital-pretreated control animals given intragastric saline (4.8 and 4.7 mg/g, resp.), in the group pretreated with phenobarbital there was only a mild increase (6.2 mg/g) in triglycerides after ethanol administration as compared to the 3-fold increase (15 mg/g) noted in the ethanol only group. There was a progressive diminution in hepatic triglyceride accumulation with increased duration of phenobarbital pretreatment. The inhibition of fatty liver was associated with a striking elevation of blood ethanol levels and no increase in blood lactate, and the enhanced incorporation of fatty acid into triglyceride by microsomal preparations after *in vivo* ethanol administration (3-fold) did not occur in phenobarbital-pretreated animals. Oxidation of 1-^{14}C-ethanol in liver slices from pretreated rats at 3 different ethanol concentrations (5.6, 56.0, 28.0 μmoles/ml) revealed a lower rate of $^{14}CO_2$ production in the phenobarbital-pretreated group (% inhibition: 53, 35, 47, resp.). However, ethanol oxidation by hepatic microsomes was similar in phenobarbital-and saline-pretreated rats and was not affected by addition of phenobarbital *in vitro*. The inhibitory effect of phenobarbital pretreatment on the ethanol-induced fatty liver is apparently due to inhibition of the alcohol dehydrogenase-mediated oxidation of ethanol.

7579 INHIBITION OF THE ACUTE ETHANOL-INDUCED FATTY LIVER BY PYRAZOLE. *(E.)* Morgan, J. C. (Tulane U. Sch. Med., New Orleans, La.) and N. R. Di Luzio. *Proc Soc Exp Biol Med* 134(2):462-466, 1970.

The effects of pyrazole administration (36 mg/100 g) on the induction of the acute ethanol-induced (6 g/kg in a 40% solution) fatty liver and the CCl_4 -induced fatty liver were studied to determine the specificity of the pyrazole-induced inhibition of ethanol-induced hepatic injury. The administration of ethanol to pyrazole-treated rats was associated with a profound inhibition of ethanol metabolism as reflected by the sustained levels of ethanol (pyrazole-ethanol group, 192 mg/100 ml; saline-ethanol group, 28 mg/100 ml). Following ethanol administration, there was a 5-fold increase in liver triglyceride concentration at the end of 20 hr (control, 4.3 mg/g; treatment, 20.7 mg/g). The pyrazole-treated group which received ethanol, however, manifested unaltered liver triglyceride concentrations and plasma triglyceride concentrations were not significantly altered in any of the experimental groups. Forty-four hr after ethanol administration, the saline-ethanol group had normal liver triglyceride values as did the pyrazole-treated group, indicating that pyrazole did not merely delay the onset of liver triglyceride alterations, but effectively prevented the development of acute fatty liver. The administration of CCl_4 to pyrazole-treated rats resulted in liver triglyceride elevations which were (24.7 mg/g) comparable to the saline-treated CCl_4 group (26.6 mg/g). The pronounced plasma hypotriglyceridemia manifested in CCl_4-treated animals (13.2 /100 ml) was also not significantly altered in the pyrazole group (10.5 mg/100 ml), showing that the toxic effects of CCl_4 were not modified by pyrazole administration.

7580 STUDIES OF MYOINOSITOL: VI. EFFECT OF MYOINOSITOL ON PLASMA LIPOPROTEIN METABOLISM OF RATS SUFFERING FROM FATTY LIVER. *(E.)*

Hasan, S. H. (Fac. Med. U. Nagoya, Japan), A. Kotaki and K. Yagi. *J Vitamin* 16(2):144-148, 1970.

The effect of myoinositol on the plasma lipoprotein metabolism of rats suffering from Handler's fatty liver was investigated. Myoinositol administered in addition to the B vitamin complex which was given to fatty liver controls obviously lowered the extent of fat accumulated in the liver (control 205.5 mg/g; treatment 97.2 mg/g). After the injection of 1-^{14}C-acetate and 2-^{14}C-acetate, there was a significant difference in the rate of cholesterol labeling, and higher label incorporation was found in rats treated with myoinositol (control 220, 2,794 cpm/mg; treatment 504, 4,376 cpm/mg, resp.). The specific radioactivities of microsomal protein in myoinositol groups 1 hr after injection of ^{14}C-L-leucine were higher than those of fatty liver controls (control 7,074 cpm/mg N; treatment 13,515 cpm/mg N). Four hr after injection, however, the specific radioactivity of serum lipoprotein in myoinositol-treated groups began to fall compared to fatty acid controls (control 14,097; treatment 11,000), indicating that by curing the fatty liver with myoinositol, the rate of turnover of hepatogenic lipoprotein increased. The specific radioactivity of microsomal trichloroacetic acid-insoluble protein following C^{14}-leucine injection was greater in rats treated with myoinositol (5,802 cpm/mg N) than in untreated rats (3,448 cpm/mg N). Apparently the transport of hepatogenic cholesterol into the blood stream was considerably enhanced when fatty liver was cured by the action of injected myoinositol.

7581 CHOLESTASIS IN HUMAN LEPTOSPIROSIS: A CLINICAL, HISTOCHEMICAL, BIOCHEMICAL AND ELECTRON MICROSCOPY STUDY BASED ON LIVER BIOPSIES. *(E.)*

De Brito, T. (Inst. Trop. Med., Sao Paulo, Brazil), D. O. Penna, S. Hoshino, V. G. Pereira, A. C. P. G. Caldas and W. Rothstein. *Beitr Path Anat* 140(3):345-361, 1970.

Liver biopsies from 9 patients with leptospirosis were studied by clinical, morphological, histochemical and biochemical methods. Four patients with reduced succinic dehydrogenase activity also presented severe hepatocellular injury as seen by electron microscopy but the remainder, corresponding to less marked hepatocellular injury, showed normal enzymatic activity. The severity of the disease depended more on the degree of renal dysfunction than on the intensity of the hepatocellular injury; no correlation was demonstrated between the clinical severity and morphological and/or functional hepatic impairment. The pathological process was extemely diffuse, although the more severe changes, particularly regarding the endoplasmic reticulum, were located at the centrolobular areas. Portal spaces with damaged ductules and mild chronic inflammatory infiltrate were less frequently seen than normal ones or portal spaces showing only edema. The ductules usually showed lesions characterized by partial lack and/or distortion of microvilli, with or without lumen dilation and/or bleb formation. Capillaries and small vessels at the portal spaces exhibited swollen endothelial cells with many pinocytotic vesicles. Biliary capillaries were usually dilated containing bile thrombi and showing cytoplasmatic diverticula and a lumen partially or totally devoid of microvilli. Golgi complexes, when abnormal exhibited dilated vesicles with an electron dense material inside. Kupffer cells were hyperplastic and hypertrophic with many autophagic vacuoles, sometimes containing bile. The more prominent and frequent pathological finding was the predominance of smooth reticulum which was proliferated and with dilated cisternae A partial or total glycogen depletion was observed in the more severely injured hepatic cells and mitochondri were enlarged with a few cristae and a light matrix, and microbodies were markedly increased in number. Cholestasis in leptospirosis is apparently the result of an injury to the hepatocyte and its bile secretory apparatus, mediated by an unknown factor, such as a toxin and/or faulty oxygen supply to the cell due to widespread capillary damage.

7582 HEPATIC COMA ASSOCIATED WITH METHOXYFLURANE ANESTHESIA: REPORT OF A CASE. *(E.)*

Katz, S. (Cornell U. Med. Coll., Mem. Hosp., New York Hosp., N. Y.). *Amer J Dig Dis* 15(8):733-739, 1970.

7583 ANTIBIOTIC THERAPY OF BACTERIAL INFECTIONS OF THE LIVER AND BILE DUCTS. *(Rus.)*

Chernomordik, A. B. (Kiev Inst. Epidemiology, Kiev, USSR). *Klin Med* 48(2):143-146, 1970.

7584 TOXICITY AND THERAPEUTIC UTILITY OF DDT AND ITS METABOLITES. *(Ger.)*

Greim, H. (Inst. Toxicol. U. Tubingen, Germany). *Aertzl Forsch* 24(7):197-201, 1970.

7585 THE EFFECT OF VITAMIN B_6 (PYRIDOXINE) ON THE CONTENT OF GLYCOGEN IN THE LIVER IN ACUTE EXPERIMENTAL HEPATITIS. *(Rus.)*

Pasechnik, I. Kh. (Ternopol' Med. Inst., Ternopol', USSR). *Pat Fiziol Eksp Ter* 14(1):81-82, 1970.

7586 THE CHARACTERISTICS OF JAUNDICE CAUSED BY AMINAZINE (CHLORPROMAZINE). *(Rus.)*

Sinaiko, G. A. (D. I. Ivanovski Inst. Virology, Moscow, USSR), E. A. Paktoris, S. N. Kutchak and O. B. Shumkina. *Klin Med* 48(6):42-52, 1970.

587 THE LIVER IN LUPUS ERYTHEMATOSUS DISSEMINATUS: HEPATITIS AND CIRRHOSIS WITH AUTO-
NTIBODIES -- WITH REFERENCE TO 5 CASE REPORTS. *(Fr.)*
raisse, H. (no affil), A. Beetschen, J. Duverne, A.
aril, C. P. Brizard and J. P. Etaix. *J Med Lyon*
1186):1067-1096, 1970.

588 PULMONARY COMPLICATIONS FOLLOWING LIVER TRAUMA. *(E.)* McCurdy, W. C., III (U. Okla-
oma Med. Ctr., Oklahoma City), W. D. Hawley, J. J.
oalson and L. J. Greenfield. *J Trauma*
0(8):690-698, 1970.

589 EXTRAPLEURAL TRANSDIAPHRAGMATIC REMOVAL OF INTRAHEPATIC FOREIGN BODIES. *(E.)*
nanna, M. N. (Coll. Med. Sci., Banaras Hindu U.,
aranasi, India) and B. K. Kaul. *Indian Pract*
3(3):233-236, 1970.

590 POSTANESTHETIC HEPATIC DYSFUNCTION. *(E.)* Wilkinson, C. J. (Northwestern U. Med.
ch., Chicago, Ill.). *Arch Surg* 101(3):359-362,
970.

91 LIVER TRAUMA: ROYAL MELBOURNE HOSPITAL EXPERIENCE 1956 to 1969. *(E.)* Hardy, K.
(Roy. Melbourne Hosp., Australia). *Med J Aust*
'(19):929-932, 1970.

92 EFFECT OF LIVER INJURY AND OF INDUCED INFLAMMATION ON THE SERUM GLYCOPROTEIN
VEL. *(E.)* Feher, J. (U. Med. Sch., Budapest,
ngary), L. Jakab and L. Takacs. *Acta Med Acad*
i Hung 27(1):57-63, 1970.

93 HEPATIC INVOLVEMENT IN PULMONARY TUBERCULOSIS: HISTOLOGIC AND FUNCTIONAL CHARACTERISTICS.
.) Zimmerman, H. J. (VA Hosp., Boston, Mass.), S.
wry, C. H. Chan, H. Weiss and S. Katz. *Amer Rev*
sp Dis 101(6):941-948, 1970.

7594 HEPATIC FUNCTION IN PATIENTS WITH PULMONARY CANCER. *(Rus.)* Zubovsky, G. A. (Min. Publ. Hlth., Moscow, USSR), I. B. Fridlyand, E. N. Syromyatnikova and G. V. Ryazanskaya. *Vop Onkol* 16(5):25-29, 1970.

7595 NICOTINAMIDE COENZYMES (NAD AND NADP) DISTRIBUTION IN CELLULAR STRUCTURES OF THE LIVER AND BRAIN IN CHEMICALLY INDUCED ALTERATIONS. *(Rus.)* Pavlova, I. I. (Inst. Hyg. Toxic., Kiev, USSR) and B. I. Khalkina. *Biull Eksp Biol Med* 69(1):47-50, 1970.

7596 SURGERY IN SEVERE HEPATIC INJURY. *(Jap.)* Sakagami, K. (Iwakuni Natl. Hosp., Yamaguchi, Japan), Y. Ide, H. Mimura, K. Asai, K. Takahashi, M. Inoue, M. Gohara and T. Okada. *Iryo* 24(1):48-55, 1970.

7597 CLINICAL AND EXPERIMENTAL STUDIES OF LIVER INJURY IN DIABETES MELLITUS: I. CLINICAL STUDIES. *(E.)* Takeuchi, J. (Sch. Med. Kanazawa U., Japan), A. Takada, Y. Nakada and K. Ebata. *Acta Hepatosplen* 17(3):137-151, 1970.

7598 COMPLETELY SEVERED LEFT LOBE OF LIVER BY TRAUMA. *(E.)* French, W. E. (Memphis, Tenn.). *Amer Surg* 36(7):459, 1970.

- P:Absorp (7061)
- P:Secr:Hepatobil (7112)(7125)(7127)
- Diagproc (7218)
- D:Livbil (7555)
- D:Livbil:Cirrh (7634)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

99 AUSTRALIA ANTIGEN IN SOME ACUTE AND CHRONIC LIVER DISEASES. *(It.)* Naccarato, R. (Dept.
l. U. Padua, Italy), U. Fagiolo, R. Farini and M.
laramonte. *G Clin Med* 51(3):170-179, 1970.

The presence of serum hepatitis antigen in sera of 264 patients with various liver diseases was tested in order to determine its incidence in acute viral hepatitis and its relation to other liver diseases of unknown etiology. A positive test was obtained in 41% of 65 acute viral hepatitis patients in the first week of the onset of the disease and decreased to 18% during the 8th week when all biochemical tests became normal. Positive tests were found in 75% of transfusion hepatitis (3 cases), and in 73% of viral hepatitis (17 cases) of prolonged course. Chronic hepatitis revealed a positive test in 34% of the cases, while alcoholic liver cirrhotics (68 cases), liver tumor patients (8 cases) and other liver patients had negative tests. The close relation between serum hepatitis antigen and viral hepatitis was confirmed, while no relation could be established between the prolonged biochemical alterations and the antigen persistence.

7600 HEPATITIS-ASSOCIATED (AU/SH) ANTIGEN DETERMINATION IN 10,000 PATIENTS IN A COPENHAGEN GENERAL HOSPITAL. *(E.)* Lous, P. (Bispebjerg Hosp., Copenhagen, Denmark), H. Olesen and P. Skinhoj. *Lancet* 2(7664):119-121, 1970.

Blood from 10,000 consecutively admitted patients at Bispebjerg Hospital, Denmark was investigated for hepatitis-associated antigen by the Ouchterlony double-diffusion method of Prince or by the precipitin reaction in gel electrophoresis. The antigen was detected in 35 of the patients (22 men and 13 women) whose average age was younger than the average age of patients admitted to the hospital (15 patients were 15 to 44 yr old, 16 were 45 to 64, and only 4 were over 65), and occurred predominantly (60%) in patients admitted to surgical departments. Of the 35 patients with positive tests, 6 had acute hepatitis, 7 had chronic hepatitis or hepatic cirrhosis, and 22 had no indications of liver disease, but 5 of the 35 were on corticosteroid treatment (compared to 1% for all admitted patients) and 3 of the highest figures (67, 88, and 154 units) in the hepatitis-associated antigen quantitation were among these 5 patients.

7601 EPIDEMIOLOGY OF VIRAL HEPATITIS: I. DYNAMICS OF VIRAL HEPATITIS INCIDENCE. *(Rus.)* Aleinik, M. D. (Gor'kiy Inst. Epidemiology, Gor'kiy, USSR). *Zh Mikrobiol* 47(1):63-66, 1970.

7602 INFECTIOUS HEPATITIS IN PATIENTS WITH PULMONARY TUBERCULOSIS. *(Rus.)* Kolotovkin, P. S. (Orenburg Antitubercul. Ctr., Orenburg, USSR). *Ter Arkh* 42(2):30-33, 1970.

7603 THE CLASSIFICATION OF REMOTE SEQUELAE OF INFECTIOUS HEPATITIS. *(Rus.)* Farber, N. A. (D. I. Ivanovski Inst. Virology, Moscow, USSR), V. M. Afinyan and S. N. Kutchak. *Klin Med* 48(6):63-70, 1970.

7604 HEPATITIS AND DRUG ABUSE. *(Nor.)* Mark, I. (Hyg. Inst., Aarhus U., Denmark). *Ugeskr Laeg* 132(23):1109-1116, 1970.

7605 FATAL APLASTIC ANEMIA AFTER VIRAL HEPATITIS IN A TEN-YEAR-OLD CHILD. *(E.)* Line, F. G. (East Tennessee Child. Hosp., Knoxville) and B. B. Bellomy. *Clin Pediat* 9(6):371-373, 1970.

7606 AUSTRALIA ANTIGEN AND VIRAL HEPATITIS. *(E.)* Anonymous. *Med J Aust* 57(20):979-982, 1970.

7607 SPECIFICITIES OF HUMAN ANTIBODIES TO AUSTRALIA ANTIGEN. *(E.)* Raunio, V. K. (Inst. Cancer Res., Philadelphia, Pa.), W. T. London, A. I. Sutnick, I. Millman and B. S. Blumberg. *Proc Soc Exp Biol Med* 134(2):548-557, 1970.

7608 VIRAL HEPATITIS: EVOLUTIONAL, CLINICAL ASPECTS, THERAPY AND PROPHYLAXIS. *(Fr.)* Laverdant, C. (Paris, France), J. Mermet, J. Halpert and P. Jodelet. *Ann Gastroent Hepatol* 6(3):193-216, 1970.

7609 ENZYMOLOGIC EVALUATION OF EXPERIMENTAL MARMOSET HEPATITIS. *(E.)* Mohr, J. R. (Dept. Med., U. Illinois, Chicago), A. W. Holmes, H. Mattenheimer, F. Deinhardt and F. W. Schmidt. *Pol Arch Med Wewnet* 44(4-5):549-554, 1970.

7610 FATAL HEPATITIS IN SIBLINGS: ISOLATION OF COXSACKIEVIRUS B5 AND HERPES SIMPLEX VIRUS. *(E.)* Marks, M. I. (U. Colorado Med. Ctr., Denver), J. H. Joncas and S. M. Mauer. *Canad Med Ass J* 102(13):1391-1401, 1970.

7611 AUSTRALIA ANTIGEN SEROLOGY IN THE HOLY CROSS FOOTBALL TEAM HEPATITIS OUTBREAK. *(E.)* Chang, L. W. (Harvard Med. Sch., Boston, Mass.) and T. F. O'Brien. *Lancet* 2(7663):59-61, 1970.

7612 AU-SH ANTIGEN IN VIRAL HEPATITIS IN WEST OF SCOTLAND. *(E.)* Ross, C. A. C. (Ruchill Hosp., Glasgow, Scotland) and S. McMichael. *Lancet* 2(7663):61-62, 1970.

7613 NEUROLOGICAL SEQUELAE IN PATIENTS WHO BECAME LONG-TERM SURVIVORS AFTER RECOVERING FROM HEPATIC COMA DUE TO VIRUS HEPATITIS FOLLOWING EXCHANGE TRANSFUSIONS. *(E.)* Thomas, E. (Stanley Med. Coll., Madras, India) and K. Natarajan. *Indian Pract* 23(4):259-261, 1970.

7614 STATISTICAL EVALUATION OF CLINICAL AND LABORATORY DATA RECORDED IN HOSPITALIZED PATIENTS WITH ACUTE VIRAL HEPATITIS. *(E.)* De Ritis, F. (Clin. Infect. Dis., U. Naples, Italy), G. Giusti, F. Piccinino, B. Galanti and G. Ruggiero. *Pol Arch Med Wewnet* 44(4-5):443-453, 1970.

7615 ALKALINE PHOSPHATASE AND PHOSPHORYLASE IN SERUM, URINE AND FECES OF PATIENTS WITH INFECTIOUS HEPATITIS. *(Rus.)* Khamidov, G. K. (Andizhan Med. Inst., Andizhan, USSR). *Ter Arkh* 42(3):31-33, 1970.

7616 CHANGES IN THE GASTRIC MUCOSA FOLLOWING INFECTIOUS HEPATITIS, AND THE EFFECT OF HEALTH-RESORT TREATMENT. *(Rus.)* Kozharsky, V. V. (Inst. Postgrad. Med. Training, Leningrad, USSR) and N. I. Romanov. *Ter Arkh* 42(3):28-31, 1970.

7617 THE IMPORTANCE OF GLUCOCORTICOID METABOLISM IN THE TREATMENT OF VIRAL HEPATITIS. *(Rus.)* Rudnev, G. P. (Central Inst. Postgrad, Med. Training, Moscow, USSR), M. B. Sheikman and G. E. Latsinik. *Klin Med* 48(1):72-79, 1970.

7618 MANAGEMENT OF INFECTIOUS HEPATITIS (BOTKIN'S DISEASE) IN PREGNANT WOMEN. *(Rus.)* Farber, N. A. (Eighty Second Hosp. Infectious Diseases, Moscow, USSR). *Klin Med* 48(2):93-98, 1970.

7619 REMOTE RESULTS OF CORTICOSTEROID THERAPY OF PATIENTS WITH INFECTIOUS HEPATITIS. *(Rus.)* Kortev, A. I. (Sverdlovsk Med. Inst., Sverklovsk, USSR), A. P. Lyasheva and V. V. Taran. *Klin Med* 48(2):98-102, 1970.

620 STUDY ON THE AU/SH/-ANTIGEN. *(E.)* Koza, J. (Inst. Epidem. Microbiol., Prague, zechoslovakia), J. Rampas, V. Janout and J. Helcl. *Hyg Epidem* 14(2):214-220, 1970.

7621 INCIDENCE AND SIGNIFICANCE OF AUTOANTIBODIES IN SUBJECTS RECOVERING FROM INFECTIOUS HEPATITIS. *(E.)* Horejsi, J. (Inst. Hemat., Prague, Czechoslovakia), Z. Jeskova and J. Pencev. *T Gastroent* 13(1):26-33, 1970.

7622 AUSTRALIA ANTIGEN (A HEPATITIS-ASSOCIATED ANTIGEN) IN LEUKEMIA. *(E.)* Sutnick, A. I. (Inst. Cancer Res., Philadelphia, Pa.), W. T. London, B. S. Blumberg, R. A. Yankee, B. J. S. Gerstley and I. Millman. *J Natl Cancer Inst* 44(6):1241-1249, 1970.

7623 AUSTRALIA ANTIGEN IN WEST OF SCOTLAND AND NORTH OF ENGLAND. *(E.)* Yeung Laiwah, A. C. (Western Infirm., Glasgow, Scotland), R. B. Goudie, D. M. Goldberg, J. F. Davidson and T. S. Murray. *Lancet* 2(7664):121-123, 1970.

- Diagproc (7211)(7230)(7246)(7248)(7252)(7259)
- D:Livbil (7526)
- D:Livbil:A.Nonv.Hep (7586)
- D:Gen (7627)(7630)

LIVER AND BILIARY TRACT

Chronic Hepatitis

524 STUDY ON AUTOIMMUNE PHENOMENON IN LIVER DISEASES: BLASTOID CELL TRANSFORMATION OF MPHOCYTES CULTURED WITH AUTOLOGOUS LIVER HOMOGENATE. .) Shishido, H. (Tokyo Med. Dent. U., Japan), H. omoto and M. Okuda. *Bull Tokyo Med Dent Univ* (1):9-18, 1970.

astoid cell transformation was studied by culturing mphocytes taken from 55 patients with chronic liver sease (27 with chronic hepatitis, 28 with liver rrhosis) in a medium containing autologous liver mogenate obtained by needle biopsy. Control subcts included 10 patients without liver disease and healthy individuals. Addition of saline to the lture medium produced 0.2% blastoid cell transrmation in only 1 of the 27 chronic hepatitis patients. Addition of autologous liver homogenate to the culture produced blastoid cell transformation in 9 of the 27 chronic hepatitis patients (0.2% to 5.8%, average 2.4%) and in 10 of the 29 cirrhotic patients (0.2% to 7.4%, average 2.5%); addition of phytohemagglutinin produced a 35-54% blastoid transformation in every instance. The SGOT, SGPT and BSP values were significantly higher in patients with a positive response; marked infiltration of small lymphocytes and liver cell necrosis was also demonstrated. Patients with a positive blastoid cell response had a tendency toward a poor prognosis and also demonstrated a positive rheumatoid serum reaction, indicating a close correlation between the 2. It was suggested that the lymphocytes, sensitized by the patient's own liver, play a role in the mechanism of self-perpetuation of hepatitis.

7625 THE FUNCTIONAL CONDITION OF THE ADRENAL CORTEX IN PATIENTS WITH CIRRHOSIS AND CHRONIC HEPATITIS. *(Rus.)* Agienko, V. D. (no affil). *Ter Arkh* 42(3):24-27, 1970.

7626 CLINICAL VARIETIES OF IMMUNOGENOUS HEPATITIS. *(Rus.)* Suchkov, A. V. (I. M. Sechenov Med. Inst., Moscow, USSR), N. V. Privalova and M. L. Zaslavsky. *Klin Med* 48(2):85-90, 1970.

7627 CHANGES IN THE BILIRUBIN FRACTIONS IN ACUTE HEPATITIS, CHRONIC HEPATITIS AND LIVER CIRRHOSIS (EBERLAINE'S TECHNIQUE). *(Rus.)* Sokolova, G. M. (Central Inst. Postgrad. Med. Training, Moscow, USSR). *Klin Med* 48(1):96-102, 1970.

7628 MORPHOLOGICAL INVESTIGATION OF THE DUODENAL MUCOSA IN CHRONIC HEPATITIS AND CIRRHOSIS OF THE LIVER. *(Rus.)* Shulman, V. Sh. (Leningrad Med. Inst. Hygiene, Leningrad, USSR). *Klin Med* 48(6):77-82, 1970.

7629 LIVER SCANNING FOR THE EVALUATION OF CHRONIC HEPATITIS AND LIVER CIRRHOSIS TREATMENT. *(Rus.)* Baramidze, T. G. (Sci. Res. Inst. Oncol., Georgia, USSR), A. G. Samadashvilli and L. T. Rostomova. *Med Radiol* 15(6):49-54, 1970.

7630 HEPATITIS-ASSOCIATED ANTIGEN IN CHRONIC LIVER DISEASE. *(E.)* Hadziyannis, S. J. (Evangelismos Hosp., Athens, Greece), G. E. Merikas and A. P. Afroudakis. *Lancet* 2(7663):100, 1970.

- Diagproc (7218)(7246)(7260)
- D:Livbil (7532)
- D:Livbil:A.V.Hep (7599)
- D:Gen (7739)

LIVER AND BILIARY TRACT

Cirrhosis

7631 LACTULOSE TREATMENT OF CHRONIC HEPATOPORTAL ENCEPHALOPATHY: A CLINICAL AND ELECTROENCEPHALOGRAPHIC STUDY. *(E.)* Rorsman, G. (U. Hosp., Lund, Sweden) and I. Sulg. *Acta Med Scand* 187(5):337-346, 1970.

The effect of lactulose treatment on 3 patients with chronic hepatoportal encephalopathy was investigated clinically and electroencephalographically. No demonstrable signs (clinically or electroencephalographically) of encephalopathy were present in any of the three patients (portal cirrhosis, hepatic cirrhosis, and combined lupoid hepatitis and early cirrhosis) prior to portocaval anastomosis; however, at various times following the operation the patients suffered from impaired memory function, tiredness, dizziness, episodic confusion and presented an abnormal (decreased frequency index) electroencephalogram. In all 3 patients the lactulose treatment was preceded by a period of dietary protein restriction, during which time all patients improved clinically and their EEG abnormalities diminished. Daily protein was then increased from 60 to 80 g/day before the trial with lactulose was started, which resulted in a definite exacerbation of the neuropsychiatric symptoms and in a slowing of the EEG (5.6 c/sec). While maintaining the high protein intake, lactulose treatment (range: 40-150 ml/day, Duphalac) was begun and a regression of the clinical symptoms and an improved EEG (8.8 to 10.1 c/sec.) resulted. The neuropsychiatric symptoms in all cases correlated well with the electroencephalographic index.

7632 ZINC CONCENTRATION IN NORMAL AND CIRRHOTIC LIVERS. *(Ger.)* Essing, H. G. (Inst. Occupational Med., U. Erlangen-Nuremberg, Germany), P. Skilandat, K. H. Schaller and D. Szadkowski. *Aertzl Forsch* 24(7):193-196, 1970.

Zinc concentrations were determined in 28 normal and 15 cirrhotic liver tissue samples in order to study the relation between Zn metabolism and chronic liver parenchymal damage. In 24 cases zinc levels were related to DNA levels in order to avoid errors due to variable blood content of the tissue samples. Normal liver samples had mean values of 31.3 mg zinc/100 g (dry weight) and 0.26 mg zinc/mg DNA, while cirrhotic samples had mean values of 19.8 mg zinc/100 g (dry weight) and 0.14 mg zinc/mg DNA. Zinc levels seem to be considerably lower in liver tissue with parenchymal damage.

7633 LIFE-EXPECTANCY OF DECOMPENSATED HEPATIC CIRRHOSIS PATIENTS. *(Ger.)* Selmair, H. (St. Hosp. Kassel, Germany), V. Ilic and K. Raddatz. *Munchen Med Wschr* 112(26):1241-1244, 1970.

A 5 yr study of 212 patients with decompensated liver cirrhosis, revealed a male/female ratio of 3/1. The survival rate 1 yr following decompensation was 57%, 32% after 3 yr and 27% after 5 yr. No differences in life expectancy following decompensation were noticed between alcoholic and "hepatic" (posthepatic or cryptogenic) cirrhotic patients.

The most frequent cause of death was hepatic coma (59%); hemorrhage of esophageal varices produced death in 24% of cases and coma following hemorrhage was fatal in 10% of the cases. These results appear more favorable when compared to any other published data, suggesting that careful medical management may increase the life expectancy of the decompensated cirrhotic patient.

7634 SERUM LIPIDS AND TOTAL FATTY ACIDS IN CHRONIC ALCOHOLIC LIVER DISEASE AT DIFFER-
ENT STAGES OF CELL DAMAGE. *(E.)* Marzo, A. (Simes
ab. Biochem., Milan, Italy), P. Ghirardi and D.
ardini. *Klin Wschr* 48(15):949-950, 1970.

ipid classes and per cent composition of total fatty acids were determined in the serum of normal ubjects (20) and patients (90) with chronic alco-
olic liver disease. The disease was classified in stages according to histological findings: cloudy welling, fatty metamorphosis, steatosis, interstitial hronic hepatitis, and cirrhosis. Total free fatty cids increased 30% to 50% in the last 4 stages, nd in all 5 stages of liver disease a marked increase n percentages of mono-unsaturated fatty acids was oted. The increase of free fatty acids in the erum occurred earlier than increases in the other ipid classes; triglycerides increased by 26% in he second stage and to a lesser extent in the other tages. Total cholesterol, phospholipids and total ipids ranged within normal values in the first 4 tages, decreasing by 20% to 30% in cirrhosis possi-
ly because of a decrease in liver activity.

535 A NEW TECHNIQUE FOR THE ASSESSMENT OF HYPERKINETIC PORTAL HYPERTENSION. *(E.)*
iamonte, M. Jr. (U. Miami Sch. Med., Fla.), P.
anner, W. D. Warren and J. Fomon. *Radiology*
6(3):539-542, 1970.

536 RENAL FUNCTION AND FECAL FLORA AFTER COLON BYPASS. *(E.)* Resnick, R. H.
emuel Shattuck Hosp., Boston, Mass.), T. C.
almer, G. P. Chatterjee and M. M. Madiff.
ch Surg 101(3):353-358, 1970.

37 A STUDY OF HEPATIC CIRRHOSIS. *(E.)* Kabrawala, V. N. (M. P. Shah Med. Coll.,
mnagar, India), R. M. Shah and G. G. Oza. *In-
an Pract* 23(4):278-282, 1970.

38 ABDOMINAL VENA CAVAL PRESSURE AND PORTAL HYPERTENSION. *(E.)* Mullane,
F. (Montefiore Hosp. Med. Ctr., Bronx, N. Y.)
d M. L. Gliedman. *Arch Surg* 101(3):363-365,
70.

7639 BLEEDING OF ESOPHAGEAL AND GASTRIC VARICES: MANAGEMENT. *(Rus.)* Sheshaberidze, M. S. (Central Inst. Postgrad. Med. Training, Moscow, USSR). *Sovet Med* 33(4):91-95, 1970.

7640 REACTIVE AND SYSTEMIC CHANGES IN THE RETICULAR TISSUE IN CIRRHOSIS OF THE LIVER. *(Rus.)* Bondar, Z. A. (I. M. Sechenov Med. Inst., Moscow, USSR) and R. P. Zolotnitskaya. *Probl Gemat* 15(5):27-31, 1970.

7641 BONE MARROW RETICULO-PLASMOCYTIC REACTION AND BLOOD PROTEINS IN CIRRHOSIS OF THE LIVER. *(Rus.)* Alperin, P. M. (Central Inst. Hematology, Moscow, USSR), T. K. Bumagina, L. A. Zherebtsov, A. A. Zamchy and R. I. Rodina. *Probl Gemat* 15(5):20-27, 1970.

7642 HEPATIC CIRRHOSIS WITH SMOOTH SURFACE. *(Nor.)* Andersen, J. (Commun. Hosp., Copenhagen, Denmark), J. Olsen and J. Rygaard. *Nord Med* 84(28):887-888, 1970.

7643 SURGICAL TREATMENT OF ASCITES FOLLOWING LIVER CIRRHOSIS. *(Ger.)* Meier, A. L. (St. Clara Hosp., Basel, Switzerland). *Deutsch Med Wschr* 94(1):12-14, 1970.

7644 RECURRENT HEPATIC COMA FOLLOWING URETEROSIGMOIDOSTOMY. *(E.)* Egense, J. (Bispebjerg Hosp., Copenhagen, Denmark) and M. Schwartz. *Scand J Gastroent* 5(supp. 7):149-152, 1970.

7645 SERUM SODIUM AND POTASSIUM LEVELS IN PORTAL HYPERTENSION BEFORE AND AFTER SURGERY. *(Rus.)* Isayev, O. S. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):25-27, 1970.

7646 WATER AND ELECTROLYTE METABOLISM IN LIVER CIRRHOSIS BEFORE AND AFTER SURGERY. *(Rus.)* Kuz'mina, Yu. I. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):30-34, 1970.

7647 MORPHOLOGY AND HISTOCHEMISTRY OF THE ADRENALS IN LIVER CIRRHOSIS. *(Rus.)* Alimov, V. A. (Tashkent Med. Inst., Tashkent, USSR). *Med Zh Uzbek* (4):37-39, 1970.

7648 PATHOGENESIS OF HEMORRHAGE FROM ESOPHAGEAL AND GASTRIC VEINS IN PORTAL HYPERTENSION. *(Rus.)* Patsiora, M. D. (Scientific Research Inst. Clin. and Experimental Surg., Moscow, USSR), L. I. Aruin, L. M. Karpman and A. K. Eramishantsev. *Vestn Khir* 104(1):39-44, 1970.

7649 A CASE OF CARDIAC INSUFFICIENCY IN A PATIENT WITH JUVENILE CIRRHOSIS OF THE LIVER. *(Rus.)* Loginov, A. S. (All-Union Sci. Res. Inst. Gastroenterology, Moscow, USSR) and I. S. Klemashev. *Klin Med* 48(2):136-137, 1970.

7650 THE USE OF ALBUMIN IN CIRRHOSIS OF THE LIVER AND PROTEIN DEFICIENCY CAUSED BY OTHER DISEASES. *(Rus.)* Alperin, P. M. (Central Inst. Hematology, Moscow, USSR), L. A. Zherebtsov and A. A. Zamchiy. *Klin Med* 48(2):79-84, 1970.

- Diagproc (7218)(7246)(7260)
- D:Livbil (7524)(7526)(7528)(7530)(7538)(7551)(7565)
- D:Livbil:A.Nonv.Hep (7587)(7597)
- D:Livbil:C.Hep (7624)(7625)(7627)(7628)(7629)
- D:Gen (7727)(7735)
- D:Gen:Parasit (7764)

LIVER AND BILIARY TRACT

Gallbladder and Biliary Tract Diseases

7651 ACUTE CHOLECYSTITIS AND SERUM TRANSAMINASE ACTIVITY. *(E.)* Adams, J. T. (U. Rochester Med. Ctr., N. Y.), G. H. Clermont and S. I. Schwartz. *Arch Surg* 101(3):366-369, 1970.

The increment and time course of SGOT in 108 patients with acute cholecystitis (26 were jaundiced) were evaluated for usefulness in the differential diagnosis of acute cholecystitis from acute myocardial infarction or hepatitis. An elevated SGOT (188 Karmen U/ml) was seen in 83 of the 108 patients. All of the 26 jaundiced patients had elevated SGOT as did 19 of the 22 patients with common duct stones. SGOT elevations above 300 U/ml were seen in 18 patients (10 were jaundiced and 5 had common duct stones) and in 5 of these patients, the value was more than 600 U. In 57 of the 82 anicteric patients there was an increase in SGOT activity with a peak value of 644 U and a mean of 159 U whereas in the jaundiced patients, the value was 251 U. In 8 jaundiced patients with common duct stones, the average SGOT value was 264 U, while in the 18 jaundiced patients without stones it averaged 245 U. Serial enzyme determinations were obtained over a period of 5 days in 38 anicteric patients and 22 jaundiced patients whose SGOT was elevated and invariably, the initial SGOT value was the maximal level obtained. When compared to the increment and the time course of the SGOT of patients with acute myocardial infarction or hepatocellular disease, the elevated SGOT activity which characterizes patients with acute cholecystitis can be of value in the differential diagnosis of these diseases.

7652 HISTOLOGICAL CHANGES IN HUMAN LIVER BIOPSIES FOLLOWING EXTRAHEPATIC BILIARY OBSTRUCTION. *(E.)* Christoffersen, P. (Commun. Hosp., Copenhagen, Denmark) and H. Poulsen. *Acta Path Microbiol Scand* (Suppl. 212):150-157, 1970.

Liver biopsies from 39 patients with cholestasis due to obstruction of extrahepatic bile ducts and with jaundice of known duration were examined histologically and the findings were correlated with the degree and duration of the jaundice. Marginal bile duct proliferation was found in all biopsies and in 82% of the portal areas; lymphocyte and histiocyte infiltration was also seen. Neutrophilic granulocytes were present in 26 of the 39 biopsies and in 40% of the portal areas; edema was also present in 21 of 39 biopsies and in 37% of the portal areas and cholestasis, focal Kupffer cell proliferation, slight variations in the size of the liver cells in the parenchyma, fine focal liver cell necroses and acidophilic bodies were also encountered. While a correlation between the histologic findings and the duration of the jaundice (1 to 2 months) did not reveal any positive differences, coarser bile thrombi, more Kupffer cells with bile, and more portal areas with edema and neutrophilic granulocytes were seen in cases with severe rather than with slight jaundice.

7653 EPITHELIAL GLYCOPROTEINS OF HUMAN GALLBLADDER: IMMUNOLOGICAL CHARACTERIZATION. *(E.)* Hakkinen, I. (Surg. Clin. U. Turku, Finland) and M. Laitio. *Arch Path* 90(2):137-142, 1970.

Specific rabbit antisera were induced for the immunological characterization of glycoproteins isolated from mucosal extracts of 38 surgically-removed human gallbladders and from 20 bile samples. The unfractionated saline extract from the gallbladder mucosa as antigen resulted in antiserum directed against connective tissue components only, which contained apparently the most powerful antigens of the extract, and cross-reacting antibodies against human serum proteins were also present. Aceytlpyridinium chloride extract of the gallbladder mucosa contained acid glycoproteins which induced an antiserum specific for gallbladder epithelium. Of the 3 gastrointestinal antigens found in gallbladder mucosa, normal gastric sulfoglycoprotein antigen and an intestinal antigen was also always present in the normal epithelial cells and could be found readily in bile and mucosal extracts in varying amounts while a third antigen was found only in pseudopyloric glands and cells resembling gastric superficial cells. This latter antigen was normally found in neutral glycoproteins of the gastric glands but not in the gallbladder, suggesting a relation between the presence of neutral glycoproteins and pathological conditions in the gallbladder.

7654 ROUX-EN-Y JEJUNAL LOOP IN BILIARY AND PANCREATIC SURGERY.

(Fr.) Hollender, L. F. (C. H. U. Strasbourg, France), H. Gillet and J. J. Kohler. *Chir Gastroent* 4(2):175-194, 1970.

The Roux-En-Y (excluded jejunal loop) procedure was performed in 54 cases of cholelithiasis with complications, 15 cases of cancer of the common bile duct and in 11 cases of cicatrix stenosis; the technique was also applied in 43 pancreatic surgery cases with chronic pancreatitis. The procedure presents considerable advantages compared to choledochoduodenostomy in preventing intestinal biliary reflux in the first group and formation of pancreatic fistulae in the second group.

7655 SIGNIFICANCE OF THE LIVER IN THE PRODUCTION OF LITHOGENIC BILE IN MAN.

(E.) Vlahcevic, Z. R. (VA Hosp., Richmond, Va.), C. C. Bell, Jr. and L. Swell. *Gastroenterology* 59(1):62-69, 1970.

The bile acid, cholesterol, and phospholipid composition of gallbladder and hepatic bile and the cholesterol composition of gallstones were determined in 20 patients at the time of elective biliary surgery. Gallstone analysis verified 3 distinct groups: 14 patients with cholesterol gallstones (10.1 to 92.7% cholesterol) and with approximately the same percentages of cholesterol in both the gallbladder (12.5%) and hepatic (14.5%) bile; 4 patients with pigmented gallstones (less than 0.3% cholesterol) and with gallbladder (4.7%) and hepatic (6.1%) bile cholesterol considerably lower than that of the first group; and 2 patients without demonstrable gallstones but with gallbladder (11.0%) and hepatic (12.1%) bile cholesterol levels similar to that of the first group. An evaluation of the interaction of cholesterol, bile salts, and phospholipid in the micellar solubilization of biliary cholesterol (triangular phase coordinates) revealed that the gallbladder and hepatic bile of group 1 patients were either out of the micellar one or near the line of cholesterol saturation (with he hepatic bile further out of the micellar zone han the gallbladder bile), while both hepatic and gallbladder bile of the patients with pigmented galltones fell within the micellar zone and both hepatic nd gallbladder bile of the patients with no gallstones were outside the micellar zone. Biliary bile acid composition isolated from gallbladder and hepatic bile was not significantly different by the paired t-test lthough patient to patient variation was considerable. he liver appears to be the principal site for abnormal ile formation associated with cholesterol gallstones.

7656 SOURCE OF ABNORMAL BILE IN PATIENTS WITH CHOLESTEROL GALLSTONES.

(E.) Small, D. M. (Boston U. Med. Ctr., Mass.) and S. Rapo. *New Eng J Med* 283(2):53-57, 1970.

The source (gallbladder or liver) of abnormal bile in 30 patients (American Indians of the Southwest) with cholesterol gallstones was investigated. The hepatic bile had much less bile salt, more cholesterol (in a zone where cholesterol would be expected to precipitate) and a lower phospholipid to cholesterol ratio (58.15, 16.58 mole%, 1.61, resp.) than gallbladder bile (71.58, 8.63 mole%, 2.43, resp.). The fact that each hepatic bile sample on inspection immediately after removal at operation (cholecystectomy) appeared as an optically clear solution strongly suggests that the liver of these patients formed a supersaturated bile that at time of collection at surgery had not yet precipitated its excess cholesterol. The liver apparently makes a supersaturated bile that, at some time after reaching the gallbladder, gives up its excess cholesterol in the form of cholesterol crystals and the liver producing this abnormal bile appears normal surgically and has normal function as judged by routine tests.

7657 ACUTE RENAL FAILURE, JAUNDICE, AND BILIARY TRACT SURGERY: ANALYSIS OF 47 PATIENTS.

(Sp.) Duncan, C. R. (Fac. Med. U. Buenos Aires, Argentina), J. Firmat, R. A. Paz and M. L. Arce. *Medicina* 30(2):129-136, 1970.

7658 HEPATORENAL INSUFFICIENCY IN OBSTRUCTIVE JAUNDICE CAUSED BY CHOLEDOCHOLITHIASIS.

(Rus.) Sergienko, V. S. (S. P. Botrin Hospital, Moscow, USSR) *Klin Med* 48(6):58-63, 1970.

7659 THE TECHNIQUE OF ODDI'S SPINCTEROTOMY USING A SPECIAL CATHETER.

(Fr.) Gavriliu, D. (Hosp. Carol Davilla, Bucarest, Rumania), C. Florea and I. Anghel. *Chir Gastroent* 4(2):202-206, 1970.

7660 BILIARY INTESTINAL FISTULA.

(E.) Thomford, N. R. (Ohio St. U. Coll. Med, Columbus) and J. R. Stull. *Amer J Surg* 120(1):27-31, 1970.

7661 MORPHOGENESIS OF CHOLECYSTITIS.

(Rus.) Vinogradov, V. V. (P. Lumumba University, Moscow, USSR) and S. I. Levina. *Khirurgiia* 46(2):7-12, 1970.

7662 THE DIAGNOSIS AND TREATMENT OF PAPILLA OF VATER STENOSIS.

(Rus.) Moguchev, V. M. (N. I. Pirogov Inst, Moscow, USSR) *Khirurgiia* 46(6):103-107, 1970.

7663 ACUTE EMPHYSEMATOUS CHOLECYSTITIS: A CASE REPORT. *(E.)* Saha, H. K. (Jawaharlal Inst. Postgrad. Med. Educ. Res., Pondicherry, India). *Indian J Surg* 32(4):220-222, 1970.

7664 PRIMARY CARCINOMA OF THE GALLBLADDER. *(E.)* Hendrickx, J. (St. Raphael's Hosp., Louvain, Belgium), J. Beckers, G. Franssen and W. Tanghe. *T Gastroent* 13(1):11-25, 1970.

7665 RELATIONSHIP BETWEEN BILIARY TRACT DISTENTION AND THE BLOOD FLOW IN THE AORTA AND RIGHT CORONARY AND RENAL ARTERIES. *(E.)* Corbitt, J. D., Jr. (VA Hosp., Atlanta, Ga.), J. M. Levin, L. G. Walker, Jr. and C. D. Haynes. *Amer J Surg* 120(1)14-15, 1970.

7666 EARLY VERSUS DELAYED OPERATION FOR ACUTE CHOLECYSTITIS: A CONTROLLED CLINICAL TRIAL. *(E.)* Van Der Linden, W. (Centrallasarettet, Ostersund, Sweden) and H. Sunzel. *Amer J Surg* 120(1):7-13, 1970.

7667 CHOLEDOCHODUODENOSTOMY, WHY AND WHEN. *(E.)* Hurwitz, A. (Mount Sinai Hosp., Miami, Florida) and G. Degenshein. *Bull Soc Int Chir* 29(2):86-91, 1970.

7668 A COMPARATIVE STUDY OF CHOLEDOCHOENTEROSTOMY AND TRANSDUODENAL SPHINCTEROTOMY IN THE MANAGEMENT OF BENIGN EXTRAHEPATIC BILIARY TRACT OBSTRUCTION. *(E.)* Thomas, C. G. (North Carolina Mem. Hosp., Chapel Hill) and C. P. Nicholson, Jr. *Bull Soc Int Chir* 29(2):92-98, 1970.

7669 THE LARGE STUMP OF BILE DUCT AS THE CAUSE OF PAIN SEIZURES. *(Rus.)* Sitenko, V. M. (S. M. Kirov Military Medical Academy, Leningrad, USSR). A. I. Nechai and S. A. Kalashnikov. *Khirurgiia* 46(2):12-16, 1970.

7670 BY-PASS LONG-TERM RESULTS. CHOLEDOCHODUODENOSTOMY: *(Rus.)* Baryshnikova, A. D. (Yu. Dzhanelidze Sci. Res. Inst. Emergency, Leningrad, USSR) and N. V. Leonovich. *Khirurgiia* 46(2):21-25, 1970.

7671 EFFECT OF BENZOHEXONIUM ON THE PHYSICAL AND CHEMICAL PROPERTIES OF BILE IN HEALTHY PERSONS AND CHRONIC CHOLECYSTITIS PATIENTS. *(Rus.)* Kamenetsky, S. I. (Donets Med Inst., Donets, USSR) and N. N. Chernomorets. *Vrach Delo* (2):26-28, 1970.

7672 CLINICAL STUDY OF XYLITE AS A CHOLAGOGUE. *(Rus.)* Vaynshteyn, S. G. (Kazan' Sanatorium, Kazan', USSR), D. Kh. Maksudova and M. I. Pivikova. *Klin Med* 48(1):126-128, 1970.

7673 CHOLECYSTOSTOMY IN ACUTE CHOLECYSTITIS. *(Rus.)* Khadzhibayev, M. (Tashkent Med. Inst., Tashkent, USSR), and G. L. Vasilenko. *Med Zh Uzbek* (4):27-30, 1970.

7674 ENZYMATIC AND FUNCTIONAL TESTS IN PATIENTS WITH OBSTRUCTIVE JAUNDICE BEFORE AND AFTER SURGERY. *(Rus.)* Dyachina, E. G. (Sci. Res. Inst. General and Emergency Surgery, Kharkov, USSR). *Khirurgiia* 46(2):48-54, 1970.

7675 CHANGES IN PORTAL CIRCULATION AFTER BILIARY OBSTRUCTION IN DOGS *(E.)* Ohlsson, E. G. (Johns Hopkins U. Sch. Med., Baltimore, Md.), R. B. Rutherford, J. K. Boitnott, M. M. P. Haalebos and G. D. Zuidema. *Amer J Surg* 120(1):16-22, 1970.

7676 INTESTINAL TISSUE VALVE IN CHOLECYSTODUODENOSTOMY. *(Rus.)* Voronchikhin, S. I. (Izhevsk Med. Inst., Izhevsk, USSR) and I. S. Kuznetsov. *Khirurgiia* 46(2):26-30, 1970.

- P:Motil (7086)
- Diagproc (7215)(7217)(7221)(7225)(7231)(7244)(7247)(7248)(7252)(7259)(7286)(7290)(7292)
- D:S.Intest (7426)(7428)
- D:S.Intest:Malabs (7451)
- D:Pancreas (7510)
- D:Livbil:A.Nonv.Hep (7583)
- D:Gen (7712)(7739)

7677 BACTEREMIA FOLLOWING PERORAL BIOPSY OF THE SMALL INTESTINE. *(E.)* Wenger, J. (VA Hosp., Atlanta, Ga.) and A. M. Petty. *Gastroenterology* 59(1):140-143, 1970.

The possibility that bacteria can pass from jejunal lumen to the systemic circulation following peroral jejunal biopsy was suggested by a case history of a patient developing fever, nausea, and bacteremia within 72 hr after the biopsy. Blood cultures revealed *Escherichia coli*, and small intestinal cultures taken 4 months earlier had revealed a high colony count of gram-negative bacilli; both organisms are abnormal for the upper jejunum. Following treatment with antibiotics, continuous nasogastric suction, and i.v. feeding the patient returned to the prebiopsy state.

7678 ANEMIA IN DERMATITIS HERPETIFORMIS: THE ROLE OF DAPSONE-INDUCED HEMOLYSIS AND MALABSORPTION. *(E.)* Cream J. J. (St. Thomas Hosp. Med. Sch., London, England) and G. L. Scott. *Brit J Derm* 82(4):333-342, 1970.

The prevalence and mechanisms of anemia in cases of dermatitis herpetiformis were studied in 43 patients being treated with dapsone (4,4'-diaminodiphenylsulfone) in this condition. Mean hemoglobin levels of patients were significantly lower than normal controls. Increasing the dose of dapsone to 150 mg. daily or above invariably caused a fall in hemoglobin. Most patients receiving more than 50 mg of dapsone daily showed persistent reticulocytosis which increased when the dose was raised. Red cell fragmentation and macrocytosis were common results in patients receiving 100 mg or more of dapsone, daily. Average massed cell volume of 15 patients receiving from 50-300 mg dapsone daily was 144 μ^3 compared with 95 μ^3 for 30 normal subjects. Serum iron levels, urine iron excretion, serum vitamin B_{12} and serum folate levels were not significantly different between controls and patients. The most important cause for anemia in these patients appeared to be the drug-induced hemolysis which may be due to a greater sensitivity of patients with dermatitis herpetiformis to dapsone.

7679 CALCIUM-STIMULATED GASTRIC SECRETION IN THE ZOLLINGER-ELLISON SYNDROME. *(E.)* Passaro, E., Jr. (Wadsworth Hosp., VA Ctr., Los Angeles, Calif.) and N. Basso. *Arch Surg* 101(3):399-402, 1970.

The effects of hypercalcemia on gastric acid secretion were studied in 4 patients with Zollinger-Ellison syndrome. Calcium gluconate (15 mg/kg i.v.) was infused over 4 hr into the patients who had had vagotomy and partial gastrectomy prior to the study and betazole was also given for comparison of maximal hourly acid outputs. Acid output after calcium stimulation ranged from 10.6 to 62 mEq/hr and from 12-46.6 mEq/hr following betazole administration. Calcium was then given to 5 patients with bilateral truncal vagotomy and partial gastrectomy to test for a direct effect on the parietal cell. In each case a gradual rise in acidity occurred with a peak after the second hour of infusion, indicating that a direct stimulation of the parietal cells by calcium was improbable. Ferrets were used to ascertain whether calcium might potentiate gastrin action, with the result that small amounts of calcium and submaximal doses of pentagastrin given simultaneously caused a maximal response, suggesting potentiation. Calcium may be of diagnostic importance in distinguishing between patients with gastric hypersecretion due to duodenal ulcer and those with hypersecretion caused by excess gastrin activity.

7680 VARIATION IN THE pH OF FECES IN DISEASE. *(E.)* Madanagopalan, N. (Madras Med. Coll., India), S. A. Nadar and R. Subramaniam. *Gut* 11(4):355-357, 1970.

The variation in the pH of feces in disease was investigated in 94 patients (17 control, 23 peptic ulcer, 12 surgically treated peptic ulcer, 4 nonspecific diarrhea, 3 Crohn's disease, 14 ulcerative colitis, 13 ileostomy and 8 abdominal malignancy) by a pH meter and indicator paper. The range of pH observed in the control group was 5.13 to 8.47, only 5 of 23 samples having a pH value of 7.0 or below. The overall pH range in the cases studied was 4.87 to 9.20. Unformed feces tended to be more acidic (27 of 40 more acid than pH 7.0) than formed stools (48 of 73 more alkaline than pH 7.0). The ileostomy specimens were frequently more acidic (pH 7.0 in 12 out of 16 cases). The pH values of the stools of 100 patients with acute amebic dysentery were compared with similar measurements in 67 patients with nondysenteric conditions (peptic ulcer 14, miscellaneous 53). Contrary to expectations the stools of patients with amebic dysentery were alkaline more often than acidic (52 of 100 patients passed stools with a pH of 8.0 or above and only 22 stool specimens had a pH of 6.0 or below). The pH of the feces of the majority of the nondysenteric subjects tended to be more acidic than pH 7.0.

7681 EXPERIMENTAL PROTEIN-CALORIE MALNUTRITION IN RATS: BIOCHEMICAL AND ULTRASTRUCTURAL STUDIES. *(E.)* Enwonwu, C. O. (U. Wash. Sch. Med. Dent., Seattle) and L. M. Sreebny. *Exp Molec Path* 12(3):332-353, 1970.

Rats on a low-protein diet were used as experimental models of kwashiorkor in which biochemical changes in the liver and serum were observed and correlated with anatomical alterations in the liver. Marked losses in body weight, atrophy of the pancreas and spleen, fatty liver, hypoproteinemia, edema and profound changes in serum amino acid patterns associated with extreme disproportions in the fasting levels of amino acids in the liver were observed. A marked reduction in liver protein and RNA content occurred, while DNA remained remarkably constant, indicating loss of cellular contents rather than a decrease in cell population. The decreased RNA content of the liver was consistent with the observations of massive breakdown of the membranes of the endoplasmic reticulum and extensive disaggregation of polysomes as well as the elevated activity of alkaline ribonuclease.

7682 DIGESTIVE MUCOSA AND CONDITIONS OF DISTRESS: EFFICACY OF PROTECTIVE TREATMENT WITH SULPIRIDE. *(Fr.)* Lareng, L. (C. H. U. Poupon, Toulouse, France) and B. Cathala. *Sem Hop Paris* 46(29):34-40, 1970.

The effectiveness of sulpiride, a psychotropic drug acting upon the hypothalamic nuclei, was studied in 52 intensive care patients for its protective action on the gastrointestinal mucosa. No digestive hemorrhage occurred in 44 of the patients treated (300 mg i.m. daily), while 26% of 23 control patients presented gastrointestinal bleeding. Anatomical lesions were found in 44% of the control patients and their incidence was reduced to 15% upon treatment. This protective management of the gastrointestinal mucosa permits simultaneous anticoagulant therapy in resuscitation patients.

7683 EFFECT OF ENDOTOXEMIA ON LIVER CELL MITOCHONDRIA IN MAN. *(E.)* Schumer, W. (U. Illinois Coll. Med., Chicago), T. K. Das Gupta, G. S. Moss and L. M. Nyhus. *Ann Surg* 171(6):875-882, 1970.

Oxidative phosphorylation and respiration were studied in mitochondria (isolated from human liver and from rat liver) that had been rendered endotoxemic by the administration of *E. coli* lipopolysaccharide; one half of the human mitochondrial pellet in the assay medium was incubated with lipopolysaccharide and the other half served as control. Inhibition of succinate-stimulated respiration was most pronounced with the lipopolysaccharide of *E. coli* 026:B6 and 0111:B4 extracted by the Boivin method, whereas Westphal-extracted lipopolysaccharide from the same strains was less inhibitory. In the presence of ADP, the rate of oxygen uptake of the lipopolysaccharide-challenged mitochondria was 40 to 50% lower than in the control group, although in the absence of ADP there was no significant difference between the two groups. The respiratory control indices and the ADP/O ratios for the controls were 2.8 and 2.0, resp., and for the endotoxemic groups, 1.6 and 1.1, resp. Electron micrographs showed swelling and dissolution of the internal structure in both human liver mitochondria and the rat liver mitochondria in the endotoxin challenged groups.

7684 STUDIES ON ACUTE MESENTERIC INFARCTION. *(E.)* Carey, J. P. (Dept. Surg. U. California, Irvine), E. A. Stemmer and J. E. Connolly. *Amer J Gastroent* 53(6):552-557, 1970.

Twenty-one acute experiments were performed in dogs to evaluate the physiological effects of sympathectomy in animals with acute mesenteric arterial insufficiency. Mesenteric ischemia was produced by ligation of the superior mesenteric artery, followed 2 hr later by mesenteric ganglionectomy and periarterial sympathectomy; 3 hr after sympathectomy the occluding ligature was released to simulate the effects of arterial reconstruction. Nine dogs were treated similarly except graduated occlusions (35% to 85% flow reduction) of the superior mesenteric artery were produced. In 6 dogs arterial and mesenteric venous lactate and pyruvate levels were determined during a control period following ligation of the mesenteric artery after sympathectomy and following simulated arterial reconstruction. Sympathectomy was capable of significantly augmenting distal arterial blood flow regardless of the severity of the occlusion except where high degrees of stenosis were present when arterial reconstruction was necessary to return blood flows to normal. Reduction of blood flow to the bowel was associated with characteristic changes in the mesenteric venous pH, pCO_2 and pO_2 levels and both sympathectomy and simulated arterial reconstruction returned these values toward normal. Lactate and pyruvate determinations did not reflect as clear cut a reversal toward control levels but consistently improved following sympathectomy. The most sensitive index of intestinal ischemia was the response of bowel temperature which fell precipitously following severe arterial stenosis and increased within minutes of sympathectomy with a parallel response in blood flow.

7685 A CONTROLLED TRIAL IN TRAVELLERS' DIARRHEA. *(E.)* Richards, D. A. (CIBA Lab., England). *Practitioner* 204(1224):822-824, 1970.

The prophylactic efficacy of clioquinol (entero-vioform) in the treatment of traveller's diarrhea was studied in a single-blind controlled trial of 320 subjects (British professional soccer players) whose trips to various countries average 14.3 to 14.6 days. In a 1968 study of 86 subjects given 3 (250 mg) tablets of clioquinol (53 subjects) or matching placebo (33 subjects) daily, the incidence of diarrhea was 2% and 21% resp., and in a 1969 study of 234 subjects given 4 (250 mg) tablets of clioquinol (148 subjects) or placebo (86 subjects), the incidence was 7% and 27% resp. The average duration of diarrhea over both studies was 31.6 hr with clioquinol and 47.3 hr with placebo.

7686 HEMOPOIETIC FACTORS OF THE GASTRIC JUICE IN CHRONIC DISEASES OF THE GASTROINTESTINAL TRACT. *(Rus.)* Fuzailov, Yu. M. (Tashkent Med. Inst., Tashkent, USSR) and Kh. Bekturdiyev. *Ter Arkh* 42(3):33-36, 1970.

7687 HUMORAL IMMUNITY IN PATIENTS WITH FOOD INDUCED SALMONELLOSIS. *(Rus.)* Shuba, L. I. (I. M. Sechenov Med. Inst., Moscow, USSR) and E. S. Stanislavsky. *Zh Mikrobiol* 47(5):97-99, 1970.

7688 THE ABDOMINAL SYNDROME IN ATHEROSCLEROSIS OF THE AORTA AND HEART CORONARIES. *(Rus.)* Moiseev, S. G. (N. V. Sklifosovski Scientific Research Inst., Moscow, USSR). *Klin Med* 48(1):56-60, 1970.

7689 CONGENITAL RECURRENT INTESTINAL OBSTRUCTION IN CHILDREN. *(Rus.)* Bairov, G. A. (Leningrad Med. Inst. Pediatrics, Leningrad, USSR) and N. S. Mankina. *Vestn Khir* 104(2):92-99, 1970.

7690 COMPLEX INVESTIGATION OF THE GASTROINTESTINAL FUNCTION IN EXPERIMENTAL PLEURITIS AND PNEUMONIA. *(Rus.)* Sharygin, A. A. (Kherson Agric. Inst., USSR). *Biull Eksp Biol Med* 69(1):40-43, 1970.

7691 THE ENTEROPATHOGENIC *ESCHERICHIA COLI* OF THE 1ST CATEGORY IN THE ETIOLOGY OF ACUTE INTESTINAL DISEASES IN CHILDREN ABOVE ONE YEAR. *(Rus.)* Hazenson, L. B. (I. P. Pavlov Med. Inst., Leningrad, USSR), A. G. Loseva, T. Y. Gennadieva, N. V. Safonova, A. A. Fedorova and F. J. Keitlina. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:246-253, 1970.

7692 THROMBOSIS OF MESENTERIC VEINS. *(Rus.)* Nartsissov, T. V. (Kalinin Med. Inst., Kalinin, USSR), V. Ya. Vasyutkov and Z. M. Murasheva. *Khirurgiia* 46(1):62-66, 1970.

7693 CLINICAL FEATURES OF DYSENTERY IN INFANTS. *(Rus.)* Makhmudov, O. S. (Pediatric Hosp. Infect. Dis., Tashkent, USSR) and N. I. Lazareva. *Med Zh Uzbek* (2):21-24, 1970.

7694 IMPORTANCE OF THE ALIMENTARY PROTEIN FOR EXTERNAL SECRETION OF THE LIVER IN ALTERATIONS OF HEPATO-INTESTINAL CIRCULATION. *(Rus.)* Vasil'yeva, E. N. (Inst. Nutrition Acad. Med. Sci. USSR, Moscow, USSR) and L. S. Vasilevskaya. *Vop Pitan* 29(2):26-31, 1970.

7695 CLINICAL AND ETIOLOGICAL FEATURES OF ACUTE INTESTINAL DISEASES IN INFANTS OF TASHKENT. *(Rus.)* Nirzamukhamedov, M. R. (Tashkent Med. Inst., USSR), V. G. Bolobonkin, L. D. Zhdanova, I. K. H. Abyzgil'dina, A. V. Foliyants and K. H. M. Makhmudova. *Med Zh Uzbek* (2):16-20, 1970

7696 INTESTINAL KNOT SYNDROME (COMPOUND VOLVULUS). *(E.)* Chandra, R. (K. G. Med. Coll., Lucknow, India), N. C. Misra and R. V. Singh. *Indian J Surg* 32(4):196-199, 1970.

7697 DEFINING THE CHOLERA CARRIER. *(E.)* Bart, K. J. (Pakistan-SEATO Cholera Res. Lab., Dacca) and W. H. Mosley. *Lancet* 2(7662):47, 1970.

7698 FUNCTIONAL GASTROINTESTINAL DISEASE IN THE AGED. *(E.)* Sklar, M. (Wayne St. U. Sch. Med., Detroit, Michigan). *Amer J Gastroent* 53(6):570-575, 1970.

7699 ANTIGENIC SCHEMA AND EPIDEMIOLOGY OF *VIBRIO PARAHAEMOLYTICUS*. *(E.)* Zen-Yoji, H. (Tokyo-to Lab. Med. Sci., Japan), S. Sakai, Y. Kudoh, T. Itoh and T. Terayama. *Hlth Lab Sci* 7(3):100-108, 1970.

7700 KLIPPEL-TRENAUNAY SYNDROME, OMENTAL HEMANGIOMA WITH HEMORRHAGE. *(E.)* Komi, N. (Tokyo Med. Dent. U., Japan), K. Takahashi and S. Suzuki. *Bull Tokyo Med Dent Univ* 17(1):1-7, 1970.

7701 PRIMARY MALIGNANT TUMORS. *(E.)* Armstrong, J. R. (Hermann Hosp., Houston, Texas) and F. R. Denman. *Tex Med* 66(6):68-71, 1970.

7702 UPPER GASTROINTESTINAL TRACT HEMORRHAGE. *(E.)* Zollinger, R. M. (Ohio St. U. Coll. Med., Columbus) and W. V. Nick. *JAMA* 212(13):2251-2254, 1970.

7703 PNEUMATOSIS CYSTOIDES INTESTINALIS. *(E.)* Rosser, R. G. (Birmingham, Ala.). *Southern Med J* 63(7):784-786, 1970.

7704 BOWEL GAS EXPLOSION: AN UNUSUAL SURGICAL COMPLICATION. *(E.)* Hussey, J. L. (Wisconsin U. Hosp., Madison) and A. J. Pois. *Amer J Surg* 120(1):103-105, 1970.

7705 GLUCOCORTICOIDS AND THE GASTROINTESTINAL TRACT: CURRENT STATUS. *(E.)* Cushman, P., Jr. (St. Luke's Hosp., New York, N. Y.). *Gut* 11(6):534-539, 1970.

7706 FOOD POISONING AND *SALMONELLA* INFECTIONS IN ENGLAND AND WALES, 1968. *(E.)* Vernon, E. (Epidem. Res. Lab., London, England). *Publ Hlth* 84(5):239-260, 1970.

7707 EOSINOPHILIC GASTROENTERITIS. *(E.)* Klein, N. C. (New York Hosp., Cornell U. Med. Coll., New York), R. L. Hargrove, M. H. Sleisenger and G. H. Jeffries. *Medicine* 49(4):299-319, 1970.

7708 PORTAL BLOOD FLOW AND OXYGEN USAGE IN DOGS AFTER HEMORRHAGE. *(E.)* Halmagyi, D. F. J. (Dept. Surg., U. Sydney, Australia), A. H. Goodman, M. J. Little, M. Kennedy and D. Varga. *Ann Surg* 172(2):284-290, 1970.

7709 ANOREXIA NERVOSA. *(E.)* Crisp, A. H. (St. George's Hosp., Tooting, London, England). *T Gastroent* 13(1):44-53, 1970.

7710 SALMONELLOSIS IN INFANTS AND CHILDREN IN BANDUNG. *(E.)* Alisjahbana, A. (Med. Sch. U. Padjadjaran, Bandung, Indonesia), T. Sumartini, S. Wiradisuria and Sugiri. *Paediat Indonesia* 10(2):67-77, 1970.

7711 TREATMENT OF ACUTE DYSENTERY BY VARIOUS METHODS. *(Rus.)* Dubovsky, V. G. (Volgograd Med. Inst., Volgograd, USSR) and L. N. Dubakina. *Zh Mikrobiol* 47(1):39-43, 1970.

7712 CHANGES OF THE NERVOUS SYSTEM OF THE GALLBLADDER AND REFLEX CENTERS OF ITS INNERVATION IN SALMONELLA CARRIERS. *(Rus.)* Kondratenko, G. P. (Donets Med. Inst., Donets, USSR). *Arkh Pat* 32(5):60-66, 1970.

7713 DIGESTIVE ENZYMES IN BLOOD AND THEIR URINARY EXCRETION IN SEVERE DYSENTERY. *(Rus.)* Ganiyeva, M. (Andizhan Med. Inst., Andizhan, USSR). *Med Zh Uzbek* (4):54-57, 1970.

7714 INTESTINAL DAMAGES IN HIDDEN ABDOMINAL TRAUMAS. *(Rus.)* Chubinidze, D. P. (Borzhomi County Hosp., Borzhomi, USSR). *Khirurgiia* 46(3):112-114, 1970.

7715 DIVERTICULA OF THE GASTROINTESTINAL TRACT. *(Rus.)* Grigoryan, A. V. (I. M. Sechenov Med. Inst., Moscow, USSR), E. V. Lutsevich and V. M. Bocharova. *Khirurgiia* 46(3):18-25, 1970.

7716 ACUTE INTESTINAL OBSTRUCTION. *(Rus.)* Burtikova, T. A. (N. Narimanov Med. Inst., Azerbaydzhan, USSR). *Khirurgiia* 46(3):81-85, 1970.

7717 NECROTIC PHEOCHROMOCYTOMA WITH GASTRIC HEMORRHAGE, SHOCK, AND UNCOMMONLY HIGH CATECHOLAMINE EXCRETION. *(E.)* Nyman, D. (Aland Central Hosp., Mariehamn, Finland) and P. Wahlberg. *Acta Med Scand* 187(5):381-383, 1970.

7718 THE CONTROL OF UPPER GASTROINTESTINAL HEMORRHAGE IN THE DOG BY PERITONEAL COOLING: AN EXPERIMENTAL STUDY. *(E.)* Lekagul, S. (Washington Hosp. Ctr., D. C.), N. P. Smyth, M. H. Brooks and K. G. Barry. *J Surg Res* 10(9):423-431, 1970.

7719 A NEW *SALMONELLA* SEROTYPE: *S.* SP. SEROTYPE *BAIBOUKOUM*: 6, 7:k:1, 7. *(E.)* Anderson, R. I. (Dept. Epidem., Johns Hopkins U., Baltimore, Md.), P. D. Washington and A. A. Buck. *Int J System Bac* 20(3):269-271, 1970.

7720 AN OUTBREAK OF *SALMONELLA VIRCHOW* FOOD POISONING AMONGST HOSPITAL STAFF. *(E.)* Elwood, W. J. (Swinton, England), J. D. Abbott, M. S. Blackbourn and M. Hughes. *Med Officer* 123(20):273-278, 1970.

7721 *SALMONELLA VIRCHOW* IN SALFORD. *(E.)* Roberts, D. J. (Salford, England) and J. N. Marshall. *Med Officer* 123(20):278-281, 1970.

7722 EOSINOPHILIC ENTERITIS: REPORT OF A CASE WITHOUT GASTRIC INVOLVEMENT. *(E.)* Dalinka, M. K. (Wilford Hall USAF Med. Ctr., Lackland AFB, Texas) and C. J. Masters. *Radiology* 96(3):543-544, 1970.

7723 ANTIGENS OF *CHOLERA VIBRIO*: LITERATURE SURVEY. *(Rus.)* Kereselidze, T. S. (Central Inst. Epidemiology, Moscow, USSR). *Zh Mikrobiol* 47(5):60-65, 1970.

7724 PATHOGENIC ENTEROCOCCI IN FOOD POISONING. *(Rus.)* Sedova, N. N. (Acad. Med. Sci., Inst. Nutrition, Moscow, USSR). *Vop Pitan* 29(3):29-32, 1970.

7725 AUTOIMMUNIZATION REACTIONS AND PATHOGENESIS OF GASTROINTESTINAL DISEASES. *(Rus.)* Pal'yants, T. G. (no affil), A. A. Askarov and A. Y. Pashkovskaya. *Med Zh Uzbek* (4):17-18, 1970.

7726 STUDIES IN INTESTINAL HEALING: V. BACTERIAL POPULATION IN INTESTINAL ANASTOMOSES. *(E.)* Kho, E. (U. Chicago Dept. Surg., Ill.) and M. M. Ravitch. *Amer J Surg* 120(1):32-34, 1970.

7727 EMERGENCY SURGICAL TREATMENT OF HEMORRHAGES CAUSED BY GASTROESOPHAGEAL VARICES. *(Por.)* Goldenberg, S. (Sao Paulo Sch. Med., Brazil), E. De Oliveira and C. M. Haddad. *Rev Ass Med Brasil* 14(7):139-146, 1970.

7728 CHRONIC INFUSION OF 5-FLUORO-2'-DEOXYURIDINE (5-FUDR) INTO THE HEPATIC ARTERY OF THE DOG. *(E.)* Khazei, A. M. (Lahey Clin. Found., Boston, Mass.), D. D. Patel, F. R. Morganthaler, A. J. MacDonald, S. M. Sanadizadeh and E. Watkins, Jr. *J Surg Res* 10(8):343-352, 1970.

7729 SPECIFIC SEROLOGICAL SHIFTS IN DYSENTERY-LIKE DISEASES CAUSED BY ENTEROPATHOGENIC *E. COLI* 025 SEROTYPE 301. *(Rus.)* Avdeeva, T. A. (Pasteur Inst. Epidemiology and Microbiology, Leningrad, USSR) and V. T. Turuleva. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:221-228, 1970.

7730 GROUP ONSET OF COLIENTERITIS 011:B4:H2 IN INFANTS. *(Rus.)* Hazenson, L. B. (Pasteur Inst. Dept. Epidemiology, Leningrad, USSR), N. I. Bogolapova and T. Y. Gennadieva. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:254-258, 1970.

7731 GROUP ONSET OF COLIENTERITIS 044 AMONG NEWBORNS. *(Rus.)* Novgorodskaya, E. M. (Pavlov Med. Inst., Leningrad, USSR), L. B. Hazenson, A. G. Loseva and K. I. Krivonosova. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:279-286, 1970.

7732 CLINICAL FEATURES OF THE DISEASES CAUSED BY *SALMONELLA PANAMA*. *(Rus.)* Kasatkina, Z. N. (S. P. Botkin Hosp. Infect. Diseases, Leningrad, USSR), T. D. Bazarova, N. E. Buchel, E. I. Makarova and A. Z. Anikina. *Tr Leningr Inst Epidem Mikrobiol Paster* 36:318-322, 1970.

7733 INFLAMMATORY TUMORS OF THE ILEOCECAL REGION OF THE INTESTINE. *(Rus.)* Matyashin, I. M. (Kiev Med. Inst., Kiev, USSR) and A. Ya. Yaremchuk. *Klin Med* 48(6):107-113, 1970.

7734 PRIMARY LYMPHANGIECTASIS PROTEIN LOSS TO THE TISSUE AND DIGESTIVE TRACT WITH IMMUNOLOGIC DEFICIENCY, EOSINOPHILIA AND UNILATERAL HYPERPERSPIRATION: A NEW VARIANT AND A NEW PROBLEM. *(E.)* Hanicki, Z. (Cracow Med. Sch., Poland), M. Hanicka, Z. Szybinski and M. Depowski. *Pol Arch Med Wewnet* 44(4-5):303-309, 1970.

7735 A SERIES OF 76 CASES OF SEVERE UPPER DIGESTIVE TRACT HEMORRHAGE, TREATED OVER A PERIOD OF ONE YEAR.*((Fr.)* Doutre, L. P. (Hosp St. Andre, Bordeaux, France), J. Perissat, F. Lehmans, P. Hirigoyen and J. C. Beaulieu. *Presse Med* 78(33):1471-1474, 1970.

7736 PROTEIN LOSING ENTEROPATHY IN MALIGNANT MELANOMA WITH GASTRIC AND INTESTINAL PARTICIPATION. *(Ger.)* Goebell, H. (Med. U. Clin. Marburg, Germany), H. Dombrowski, P. Schmitz-Moorman and G. A. Martini. *Internist* 11(4):142-145, 1970.

7737 *VIBRIO PARAHAEMOLYTICUS* AND DIARRHEA ASSOCIATED WITH NON-CHOLERA VIBRIOS. *(E.)* Chatterjee, B. D. (Sch. Trop. Med., Calcutta, India), S. L. Gorbach and K. N. Neogy. *Bull WHO* 42(3):460-463, 1970.

7738 ABDOMINAL PAIN IN INFANCY. *(E.)* Cohen, G. J. (Child. Hosp. Washington, D. C.), J. R. Puig, J. Randolph and D. W. Delaney. *Clin Proc Child Hosp D C* 26(6):178-192, 1970.

7739 DUBIN-JOHNSON SYNDROME. *(E.)* Powell, K. C. (Angau Mem. Hosp., Lae, New Guinea), R. H. Anderson, A. R. Shepherd, I. S. Wilkey and R. A. Cooke. *Med J Aust* 57(19):957-958, 1970.

7740 INFANTILE COLIC: FACT OR MYTH?. *(E.)* Harley, L. M. (Sinai Hosp. Detroit, Michigan). *Bull Sinai Hosp Detroit* 18(3):81-90, 1970.

7741 VASCULAR INSUFFICIENCY OF THE BOWELS. *(E.)* Williams, L. F., Jr. (Boston U. Sch. Med., Mass.). *Dis Month* (August 1970):1-38, 1970.

7742 EXPERIMENTAL DECOMPRESSION OF THE PORTAL CIRCULATION BY MEANS OF A CONNECTION BETWEEN THE LIVER AND KIDNEY WITH IVALON. *(It.)* Rapisarda, L. M. (Dept. Surg., U. Palermo, Italy), G. Barbera and L. Cortese. *Minerva Med* 61(51):2863-2867, 1970.

7743 TREATMENT OF CHOLERAIC DIARRHEA FOLLOWING ILEAL RESECTION WITH CHOLESTYRAMINE. *(Nor.)* Otzen, J. (Land Hosp. Sonderborg, Denmark) and P. Ollendorf. *Ugeskr Laeg* 132(26):1223-1226, 1970.

7744 A CASE OF DIARRHEA AFTER ILEAL RESECTION TREATED BY CHOLESTYRAMINE (CUEMID). *(Nor.)* Ollendorff, P. (Land Hosp. Sonderborg, Denmark) and J. Otzen. *Ugeskr Laeg* 132(26):1226-1228, 1970.

7745 ACUTE CHYLOPERITONEUM FOLLOWED BY HEMOLYTIC ANEMIA WITH AUTOANTIBODIES AND BY RAPID FATAL OUTCOME DUE TO MALIGNANT RETICULOENDOTHELIAL DISEASE. *(Fr.)* Fraisse, H. (no affil), A. Metton, C. P. Brizard and J. Gounod. *J Med Lyon* (1186):1119-1125, 1970.

7746 ONE LAYER END-TO-END INTESTINAL SUTURES. *(It.)* Preziosi, M. (Holy Spirit Hosp., Sassia, Italy) and A. Perozzi. *Chir Gastroent* 4(2):146-152, 1970.

7747 ZOLLINGER-ELLISON SYNDROME. *(Por.)* Paulino, F. (Rio De Janiero, Brazil). *Hospital* 77(3):747-753, 1970.

7748 SERUM ENZYME ACTIVITIES IN NORMAL AND CHRONIC GASTROINTESTINAL DISEASE AFFECTED CHILDREN. *(Rus.)* Barsegyan, R. G. (no affil) and L. K. Ogandzhanyan. *Pediatriia* 49(3):51-54, 1970.

7749 ORAL USE OF KETOSCILIUM IN GASTROINTESTINAL DISORDERS. *(It.)* Maduli, S. (Great Hosp. Novara, Italy) and G. Frigerio. *Minerva Gastroent* 16(2):94-98, 1970.

7750 CHYLOUS ASCITES IN MALIGNANT TUMORS. *(Rus.)* Zerbino, D. D. (Lvov Med. Inst., Dept. Pathol. Anatomy, Luou, USSR). *Arkh Pat* 32(5):49-54, 1970.

7751 TOXIGENESIS AND INFECTION OF MICE BY *SALMONELLA ENTERITIDIS*. *(E.)* Hawbecker, D. E. (Dept. Food Sci., U. Georgia, Athens), M. K. Hamdy and J. A. Carpenter. *Proc Soc Exp Biol Med* 134(2):390-395, 1970.

7752 GASTROINTESTINAL BLEEDING. *(E.)* Baum, S. (Grad. Hosp., U. Pennsylvania, Philadelphia), M. Nusbaum and H. J. Tumen. *Lancet* 2(7663):106-107, 1970.

- P:Absorp (7063)
- P:Secr:Hepatobil (7176)(7177)(7178)
- P:Secr:Int (7198)
- P:Gen (7205)(7207)
- Diagproc (7224)(7245)(7250)(7251)(7263)(7271)(7275)(7278)(7287)(7291)
- D:Esoph (7317)
- D:Stomduo (7321)(7325)
- D:Stomduo:Peptulc (7410)
- D:S.Intest (7415)
- D:S.Intest:Regent (7433)
- D:S.Intest:Malabs (7444)(7449)
- D:L.Intest (7452)(7461)(7485)(7489)(7493)
- D:Pancreas (7508)
- D:Pancreas:Pancreat (7515)(7518)
- D:Livbil (7529)(7552)(7559)(7562)(7570)(7571)(7572)
- D:Livbil:A.Nonv.Hep (7588)(7597)
- D:Livbil:A.V.Hep (7602)(7605)
- D:Livbil:Cirrh (7636)(7641)(7648)(7649)(7650)
- D:Livbil:Gallb (7657)(7658)(7665)

GENERAL

Parasitology

7753 THE CLINICAL PICTURE AND DIAGNOSIS OF AMEBIC ABSCESSES OF THE LIVER. *(Rus.)* Babaev, O. G. (First Republ. Hosp., Mara, USSR). *Klin Med* 48(1):109-115, 1970.

7754 PERITONITIS FOLLOWING SURGICAL INTERVENTIONS IN PATIENTS WITH OPISTHORCHOSIS. *(Rus.)* Nekrasov, L. P. (Tyumen' Med. Inst., Tyumen', USSR). *Sovet Med* 33(4):104-107, 1970.

7755 AMEBIASIS CONTROL IN THE TURKMENIAN SSR. *(Rus.)* Mizgireva, M. F. (Ashkhabad Inst. Epidemiology, Ashkhabad, USSR). *Med Parazit* 39(2):207-211, 1970.

7756 *BALANTIDIUM COLI* INFECTION IN A VIETNAM RETURNEE. *(E.)* Lerman, R. H. (U. S. Army Tripler Gen. Hosp., Honolulu, Hawaii), W. T. Hall and O'N. Barrett, Jr. *California Med* 112(6):17-18, 1970.

7757 METRONIDAZOLE (FLAGYL): A CLINICAL TRIAL *(E.)* Rajappan, P. N. (Madras, India). *Indian Pract* 23(5):321-324, 1970.

7758 HYDATID CYST DISEASE. *(E.)* Whitcomb, F. F. (Lahey Clin. Found., Boston, Mass.), N. K. Parikh and C. E. Sedgwick. *Amer J Dig Dis* 15(8):711-718, 1970.

7759 METRONIDAZOLE IN THE TREATMENT OF INTESTINAL AMEBIASIS. *(E.)* Grewal, M. S. (Postgrad Inst. Med. Educ. Res., Chandigarh, India) and P. N. Chhuttani. *Indian Pract* 23(4):269-271, 1970.

7760 HYDATID DISEASE IN WESTERN AUSTRALIA (1957-1967). *(E.)* Stein, G. R. (Dept. Path., U. Western Australia, Perth) and D. J. McCully. *Med J Aust* 57(17):848-850, 1970.

7761 ASCARIASIS: SURGICAL COMPLICATIONS IN CHILDREN. *(E.)* Waller, C. E. (Med. U. South Carolina, Charleston) and H. B. Othersen, Jr. *Amer J Surg* 120(1):50-54, 1970.

7762 AMEBIC ACSCESS OF THE LIVER. *(E.)* Aptekar, S. J. (M. G. M. Hosp., Bombay, India) and I. D. Sood. *Indian J Surg* 32(4):169-176, 1970.

7763 *BALANTIDIUM COLITIS*: REPORT OF A CASE. *(E.)* Ramchand, S. (Richardson Lab., Queen's U., Kingston, Ontario, Canada), L. Baskerville and Y. Ahmed. *Amer J Dig Dis* 15(8):727-731, 1970.

7764 PHYSIOPATHOLOGIC ASPECTS OF THE PORTAL HYPERTENSION SYNDROME. *(Por.)* Guimaraes, J. S. (Fac. Med. U. San Paulo, Brazil), L. DeC. Silva and F. S. Goffi. *Rev Ass Med Brasil* 14(7): 123-128, 1970.

7765 OCULAR SIGNS OF HYPOVITAMINOSIS AND INTESTINAL INFECTIONS. *(E.)* Ahmed, E. (Bankura Med. Coll., India) and S. N. Roy. *Indian Pract* 23(3):225-226, 1970.

7766 ON THE USE OF CHLOROXYL IN THE TREATMENT OPISTHORCHOSIS. *(Rus.)* Limakhina, M. A. (M. I. Kalinin Med Inst., Omsk, USSR), V. A. Kovalenko and V. V. Tikotsky. *Ter Arkh* 42(2):81-84, 1970.

7767 NON-INTENSIVE CHEMOTHERAPY IN BILHARZIASIS WITH LUCANTHONE HYDROCHLORIDE: PRELIMINARY REPORT. *(E.)* McMahon, J. E. (Papuan Med. Coll., Boroka). *Trans Roy Soc Trop Med Hyg* 64(3): 433-438, 1970.

7768 EPIDEMIOLOGY OF ASCARIASIS IN THE ZHDANOV DISTRICT OF MOSCOW: THE ROLE OF SOIL IN INFECTION WITH ASCARIDES IN CHILDREN OF PRE-SCHOOL INSTITUTIONS. *(Rus.)* Derevitskaya, V. V. (Zhdanov District Hygiene Inst., Moscow, USSR). *Med Parazit* 39(2):188-190, 1970.

7769 ASCARIASIS OF THE LIVER AND BILE DUCTS. *(Rus.)* Magomedov, A. Z. (Dagestan Med. Inst., Dagestan, USSR) and S. G. Gadzhiev. *Khirurgiia* 46(2):65-69, 1970.

7770 CONSERVATIVE THERAPY AND INDICATIONS FOR SURGICAL TREATMENT OF AMEBIC ABSCESSES OF THE LIVER. *(Rus.)* Babaev, O. G. (First Republ. Hosp., Mara, USSR). *Khirurgiia* 46(2):70-75, 1970.

D:Gen:Parasit

- P:Gen (7201)
- Diagproc (7235)(7236)(7249)(7279)
- D:Livbil (7565)
- D:Gen (7680)

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE

Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON

Cancer, Polyps, Radiological Detection (0188)*

RECTUM

Cancer, Polyps, Precancerous (0188)*

CANCER

Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS

Radiology, Cancer, Large Intestine (0188)*

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

AAGAARD, P.
7094*
ABBOTT, J.D.
7720
ABE, M.
7461
ABRAMOVA, V.G.
7226
ABYZGIL'DINA, I.K.H.
7695
ACCARY, D.
7493
ACOSTA, J.M.
7516
ADAM, Y.G.
7569
ADAMS, J.T.
7651*
AFINYAN, V.M.
7603
AFROUDAKIS, A.P.
7630
AGIENKO, V.P.
7625
AHMED, E.
7765
AHMED, Y.
7763
AITHAL, H.N.
7185
AKAMATSU, T.
7322*
AKHUNDZHANOV, B.A.
7180
AKOPYAN, Z.I.
7169
ALAGNI, G.
7426
ALBOT, G.
7395
ALEINIK, M.D.
7601
ALEKSANDROV, V.B.
7464
ALEXANDRE, J.H.
7408
ALEXANDROV, N.I.
7205
ALEXANDROV, V.B.
7458
ALIMOV, T.U.
7403
ALIMOV, V.A.
7647
ALISJAHBANA, A.
7710
ALPERIN, P.M.
7641, 7650
ALTANKOV, P.
7457
ALTER, H.J.
7230
ALTSHUL, A.S.
7467
AMBRUS, J.L.
7137*
AMTRUP, F.
7490
ANDERSEN, B.
7466
ANDERSEN, J.
7642
ANDERSON, R.H.
7739
ANDERSON, R.I.
7719
ANDREYEV, O.V.
7266
ANDROSOV, N.S.
7379
ANDRUKOVICH, A.I.
7235
ANGHEL, I.
7659
ANIKINA, A.Z.
7732
ANNISON, F.F.
7139*, 7160*
ANONYMOUS
7606
ANSARI, H.
7456*
ANTIPOV, S.G.
7266
APPELGREN, L.E.
7049
APTEKAR, S.J.
7762
ARCE, M.L.
7657
ARMSTRONG, J.R.
7701
ARTEMIEV, E.N.
7399
ARUIN, L.I.
7369, 7514, 7648
ARYAMKIN, L.T.
7235
ARYEV, L.M.
7374
ASAI, K.
7596
ASHCRAFT, K.W.
7309
ASHRAPOVA, M.A.
7180
ASKAROV, A.A.
7725
ASNAES, S.
7221*
ASSEFF, J.S.
7341
AUGUR, N.A.
7451
AURICCHIO, S.
7445
AVDEEVA, T.A.
7729
AVENI, F.
7426
AVILA, L.
7116*
AW, S.E.
7279
AXELSSON, C.
7434
AXON, A.T.R.
7058*
AYABE, M.
7222*
BAERG, R.D.
7069*
BAEZ, A.
7561
BABAEV, D.G.
7753, 7770
BABIYETS, A.P.
7258
BABULI, P.
7338, 7376
BACCHIN, P.
7127*
BAIROV, G.A.
7689
BAJOLET, S.
7325*
BAKER, H.
7112*
BAKER, L.
7527*
BAKHABOV, U.T.
7180
BALESTRIERI, G.G.
7248, 7445
BAN, J.L.
7093*
BAR, U.
7550
BARAMIDZE, T.G.
7245
BARANY, F.
7629
BARBERA, G.
7742
BARDOS, T.J.
7137*
BARIL, A.
7587
BARIL, E.F.
7114*
BARMIN, V.S.
7242
BARNARD, E.A.
7037*
BARNES, R.H.
7066*
BARRETT, O'N., JR.
7756
BARROWMAN, J.A.
7027*
BARRY, K.G.
7718
BARSEGYAN, R.G.
7748
BART, K.J.
7697
BARTELS, J.
7192*
BARTOOV, B.
7147*
BARYSHNIKOVA, A.D.
7670
BASKERVILLE, L.
7763

BASS, D.D.
7194.
BASSO, N.
7679.
BASTAGLI, A.
7387.
BASTOS, E.DAS.
7099
BATINKOV, E.L.
7397
BATTERSBY, C.
7251
BAUBLIS, J.
7566
BAUM, S.
7752
BAYBEKOVA, F.M.
7371
BAYEV, V.K.
7372
BAZAROVA, T.D.
7732
BEAHRS, O.H.
7474
BEATTIE, D.S.
7152.
BEAULIEU, J.C.
7735
BEAUPOIL, B.
7030.
BECKER, J.E.
7114.
BECKERS, J.
7664
BEDUHN, D.
7231
BEETSCHEN, A.
7517, 7587
BEHAR, C.
7325.
BEKERSKY, I.
7133.
BEKTURDIYEV, K.
7686
BEL, A.
7323.
BELEN'KAYA, T.Y.
7228
BELINSKAIA, A.M.
7043
BELL, C.C., JR.
7655.
BELL, J.W.
7296.
BELL, T.A.
7100
BELLOMY, B.B.
7405
BELOUSOV, A.S.
7263
BELOUSOVA, N.D.
7518
BELOV, I.N.
7224
BEL'SKIY, A.V.
7542
BELYAKOV, O.I.
7365
BELZER, F.O.
7552
BENNER, E.J.
7483
BENNET, J.
7213.
BERG, P.
7312
BERG, T.
7155.
BERK, P.D.
7063.
BERLIN, N.I.
7063.
BERLINER, S.D.
7415
BERNARDI, D.
7190
BERNDT, W.
7512
BERNELLI-ZAZZERA, A.
7535.
BERNSTEIN, L.H.
7193.
BERSOHN, I.
7530.
BERSTAD, A.
7327.
BESSONOVA, G.A.
7410
BEVILACQUA, R.G.
7099
BEZKOROVAYNAYA, N.M.
7170, 7187
BICKERSTAFFE, R.
7139., 7140.
BILL, A.H., JR.
7469
BIOT, M.
7217.
BIRK, R.V.
7547
BIRKETT, D.
7437.
BLACK, E.G.
7122.
BLACK, I.R.
7121.
BLACKBOURN, M.S.
7720
BLICHERT-TOFT, M.
7313
BLOOM, P.R.
7078.
BLOOMER, J.R.
7063.
BLUMBERG, B.S.
7607, 7622
BOCHAROVA, V.M.
7715
BODART, P.
7269
BOGOLAPOVA, N.I.
7730
BOGULAVSKAYA, E.S.
7047
BOGUSLAVSKY, L.S.
7494
BOHNE, F.
7198
BOIKOV, Y.P.
7401
BOISSON, J.
7395
BOITNOTT, J.K.
7675
BOLES, E.T., JR
7354
BOLIN, T.D.
7448
BOLOBONKIN, V.G.
7695
BONDAR, Z.A.
7232, 7640
BONDAREV, L.S.
7259
BORISOVA, R.P.
7080
BORNER, J.W.
7203
BOSMANN, H.B.
7136.
BOWRING, A.C.
7414.
BOWRY, S.
7593
BOYD, G.S.
7141., 7153.
BOYEV, K.K.
7084
BRACONNOT, P.
7539.
BRAGUINSKY, J.
7450
BRAITSEVA, M.D.
7472
BRANDINA, A.M.
7492
BREMER, J.
7123.
BRESNICK, E.
7117.
BREUER, R.I.
7499.
BRITT, L.G.
7100
BRIZARD, C.F.
7587, 7745
BROOKE, B.N.
7430.
BROOKS, A.M.
7092., 7191., 7195.
BROOKS, M.H.
7718
BROWN, J.C.
7095.
BROWN, N.K.
7562
BRUN, C.
7545
BRUNOIS, J.P.
7325.
BRUSILOVSKY, M.N.
7473
BRUSSILOVSKI, M.I.
7492

BRYAN, G.T.
7330
BUCHEL, N.E.
7732
BUCK, A.A.
7719
BUDD, G.C.
7037.
BUDILIN, I.S.
7316
BUFFATTI, G.A.
7443
BULANOV, A.M.
7332
BULLENS, A.M.
7532.
BUMAGINA, T.K.
7641
BURLESON, S.S.
7117.
BURNEY, S.W.
7324.
BURSON, L.C.
7415
BURTIKOVA, T.A.
7716
BURTSEV, A.N.
7340
BUSSEY, H.J.R.
7487
BUSTOS, G.O.
7577.
BUSTOS FERNANDEZ, L.
7450
UZAYEV, V.T.
7373
YCHKOVA, T.I.
7402
ALDAS, A.C.P.G.
7581.
AMA, H.R.
7210
ANEVARO VALDEZ, M.
7385.
ANTRELL, J.R.
7296.
ARCY, J.R.
7270
AREY, J.P.
7684.
ARLSON, H.C.
7244
ARPENTER, J.A.
7751
ARR, K.E.
7034.
ARRERAS, A.
7450
ARROLL, H.J.
7573
ARTER, E.A.
7578.
ASTAGNETTI, G.L.
7218.
ATHALA, R.
7682.
TZ, C.S.
7110.
CAUSSE, J.L.
7270
CHAN, C.H.
7593
CHANDRA, R.
7696
CHANG, L.W.
7611
CHALMER, T.C.
7636
CHARDON, P.
7325.
CHARLESWORTH, D.
7422
CHATTERJEE, B.D.
7737
CHATTERJEE, B.P.
7636
CHELI, R.
7321.
CHEN, J.S.
7159.
CHERINKOVA, Z.V.
7256
CHERNOMORDIK, A.B.
7583
CHERNOMORETS, N.N.
7671
CHERNYAVSKIY, A.A.
7299
CHHUTTANI, P.N.
7759
CHIAO, S.F.
7320.
CHIARAMONTE, M.
7599.
CHISSOV, V.I.
7229
CHMIELEWICZ, Z.F.
7137.
CHRIST, W.
7204
CHRISTIANSEN, J.
7094.
CHRISTOFFERSEN, P.
7652.
CHUA, K.L.
7448
CHUBINIDZE, D.P.
7714
CHUCHUMASHEV, S.G.
7053
CHUCK, G.
7572
CHUKAVINA, A.I.
7574
CIRIC, S.S.
7510
CIVANTOS, F.
7516
CLAGETT, O.T.
7360
CLARKE, R.M.
7067.
CLATWORTHY, H.W., JR.
7506
CLENDINNEN, B.G.
7093.
CLERMONT, G.H.
7651.
CLERY, A.P.
7478
COALSON, J.J.
7588
COHEN, G.J.
7738
COHEN, J.L.
7167
COHEN, S.M.
7330
COLOMBO, C.
7255
CONNOLLY, J.E.
7684.
COOKE, R.A.
7739
COOPER, J.H.
7568
COOPER, P.
7358
COPER, H.
7204
COPSEY, K.
7124.
CORBITT, J.D., JR.
7665
CORSI, C.
7254
CORTESE, L.
7742
COSTA, A.A.
7565
COUDOUX, P.
7325.
COURTNEY, R.A.
7292
COX, A.G.
7082
COZZONE, P.
7030.
CRAIG, O.
7273
CREAM, J.J.
7678.
CREAMER, R.
7058.
CRISP, A.H.
7709
CROUTHAMEL, W.C.
7071.
CROW, J.L.
7509
CSABA, B.
7200
CULLEN, D.R.
7275
CUSHMAN, P., JR.
7705
DALAVURAK, V.P.
7390
DALE, J.E.
7386.
DALINKA, M.K.
7722
DALLE, M.
7325.

DALTON, W.E.
7508
DALY, J.F.
7301
DANNER, P.
7635
DARLING, D.R.
7292
DARNTON, S.J.
7027*
DAS GUPTA, T.K.
7683*
DAVIDSON, C.S.
7526*
DAVIDSON, J.F.
7623
DAVIES, P.
7109*
DAVIES, S.H.
7275
DAVIS, A.F.
7448
DAVIS, D.A.
7301, 7362
DAVYDOVA, N.P.
7287
DAWSON, J.L.
7570
DE ALMEIDA, A.D.
7099
DEAN, E.E.
7182
DE BRITO, T.
7581*
DE CARLI, L.M.
7125*, 7126*
DE GARCIA, V.C.M.
7465
DEGENSHEIN, G.
7667
DE GROOT, C.J.
7529*
DE GROOTE, J.
7532*
DEICHMANN, W.B.
7124*
DEINEKA, I.Y.
7206
DEINHARDT, F.
7609
DEKHTYAR, A.L.
7257
DE LACHICA MERF, M.
7310
DELANEY, D.W.
7738
DENMAN, F.R.
7701
DE OLIVEIRA, E.
7727
DE PAULA, A.
7450
DEPOWSKI, M.
7734
DEPUYDT, W.
7217*
DEREVITSKAYA, V.V.
7768
DE RITIS, F.
7247, 7445, 7614
DEROCHE, B.
7325*
DE SANDRE, G.
7528*
DESMET, V.J.
7532*
DEUCHER, F.
7504
DE WULF, H.
7142*, 7146*
DIAMOND, L.
7071*
DICK, E.T.
7486
DICKEY, A.
7041
DIENER, S.
7431
DI LUZIO, N
7579*
DINBAR, A.
7481
DIPPON, R.
7504
DOBBINS, W.O.
7025*
DOGAN, E.B.
7544
DOLDI, S.B.
7387*
DOLUISO, J.T.
7071*
DOMBROWSKI, H.
7736
DONOHOE, J.F.
7436*
DOROKHOVA, L.P.
7043
DOUTRE, L.P.
7735
DROGOVOZ, S.M.
7170
DROZDZ, H.
7246
DRUZHININ, F.A.
7288
DUBOVSKY, V.G.
7711
DUBOVYI, E.D.
7766
DUCIC, S.
7380
DUDA, K.
7377
DUDRICK, S.J.
7326*
DUNCAN, C.R.
7657
DUREAUX, J.B.
7349
DUTHIE, H.L.
7392
DUTZ, W.
7361
DUVERNE, J.
7517, 7587
DYACHINA, E.G.
7674
EBATA, K.
7597
EDELMANN, G.
7491
EDLICH, R.F.
7203
EDMONDS, C.J.
7064*
EDWARDS, D.A.W.
7295*
EDWARDS, D.L.
7420
EFREMOV, D.N.
7459
EFREMOVA, V.N.
7205
EGENSE, J.
7644
EGOROV, V.I.
7047
EGOROVA, N.B.
7205
EK, B.
7449
EKROLL, T.
7314
ELISEYEVA, S.V.
7207
ELSNER, B.
7453*
ELWOOD, W.J.
7720
ENGELHOLM, L.
7712*
ENGELMAN, R.M.
7312
ENGSTROM, J.
7553
ENOMOTO, H.
7624*
ENWONWU, C.O.
7681*
EPSHTEIN, I.M.
7207
ERAMISHANTSEV, A.K.
7540, 7648
ERIKSSON, H.
7057*
ERIKSSON, S.
7433
ERSKINE, J.M.
7471
ERTURK, E.
7330
ESIPENKO, B.E.
7168
ESSING, H.G.
7632*
ESTREMADOYRO ROBLES, O.
7385*
ETAIX, J.P.
7517, 7587
EVANS, R.
7570
EVERED, D.F.
7056*

EWEN, S.W.R.
7435
FAGIOLO, U.
7599.
FAIN, S.N.
7464, 7494
FALKSON, G.
7531.
FANTONI, P.A.
7348
FARBER, N.A.
7603, 7618
FARINI, R.
7599.
FATTERPAKER, P.
7186
FAWCETT, A.N.
7101.
FEDOROVA, A.A.
7691
FEHER, J.
7592
FEINGOLD, S.
7112.
FELLER, D.D.
7148.
FERNBACH, D.J.
7485
FEROLDI, J.
7539.
FERRERO, M.F.
7535.
FERRIER, J.F.
7378
FICHERA, G.
7387.
FILIN, V.I.
7298
FILION, R.D.L.
7078.
FILLER, R.M.
7220.
FILLY, R.A.
7216.
FILOSA, E.
7445
FINCATO, M.
7254
FIRMAT, J.
7657
FISHER, J.H.
7292
FITTS, W.T., JR.
7326.
FLOREA, C.
7659
FOLIYANTS, A.V.
7695
FOMIN, L.A.
7511
FOMIN, P.D.
7318
FOMINA, L.S.
7102
FOMON, J.
7635
FONKALSRUD, E.W.
7481
FORTNER, J.G.
7569
FOUNTAIN, J.A.
7041
FOX, H.
7422
FOX, J.A.
7276
FOX, S.
7078.
FRAISSE, H.
7517, 7587, 7745
FRANCO-VASQUEZ, R.
7310
FRANK, O.
7112.
FRANKFURT, L.A.
7234
FRANKLIN, R.
7475
FRANSSEN, G.
7464
FREANEY, R.
7436.
FREEMAN, K.R.
7147.
FREID, A.
7164
FREIMANIS, A.K.
7216.
FRENCH, W.E.
7359, 7598
FREZZA, M.
7528.
FRIDLYAND, I.B.
7594
FRIGERIO, G.
7749
FRIK, W.
7363
FRIMMER, M.
7075
FROLKIS, A.V.
7228
FRUTON, J.S.
7175
FUKAMACHI, S.
7147.
FUKUI, H.
7054.
FUKUI, T.
7054.
FUZAILOV, Y.M.
7409, 7686
GADZHIEV, S.G.
7769
GAEDE, K.
7090.
GAJA, G.
7535.
GAJONE, F.
7535.
GALANTI, B.
7614
GALEONE, M.
7387.
GALLAGER, H.S.
7477
GALLWITZ, D.
7051
GALPERIN, E.I.
7557
GALVIYA, U.D.
7479
GANC, A.J.
7565
GANG, H.
7125., 7127.
GANIYEVA, M.
7713
GAPANIUK, O.N.
7379
GARATTINI, S.
7190
GAVRILIU, D.
7659
GAZETOV, B.M.
7472
GAZZANIGA, A.B.
7480
GEDDES, E.W.
7530., 7531.
GEFEN, N.F.
7205
GEISER, C.F.
7561
GELLER, L.I.
7410
GELZAYD, E.A.
7499.
GENNADIEVA, T.V.
7691, 7730
GENOVA, M.
7457
GENTILE, J.M.
7116.
GEOFFROY, H.
7325.
GERGUSON, A.
7034.
GERMAIN, A.
7412
GERSHON, E.
7069.
GERSTLEY, B.J.S.
7622
GHERARDI, G.J.
7554
GHIRARDI, P.
7634.
GIANETTO, R.
7032.
GIBBS, B.F.
7509
GIERUP, J.
7432
GILEVICH, Y.S.
7316
GILLELAND, M.J.
7140.
GILLET, H.
7654.
GILLETTE, E.L.
7044
GIMENEZ, M.L.
7090.

GIRAUD, A.
7517
GIUSTI, G.
7248, 7614
GLANTS, R.M.
7407
GLASS, H.I.
7082
GLEASON, N.H.
7249
GLICK, Z.
7076
GLIEDMAN, M.L.
7573, 7638
GODFREY, R.C.
7064*
GOEBELL, H.
7736
GOFFI, F.S.
7764
GOHARA, M.
7596
GOLD, P.
7456*
GOLDBERG, D.
7438*
GOLDBERG, D.M.
7623
GOLDBERG, M.I.
7175
GOLDENBERG, D.M.
7455*
GOLDENBERG, S.
7727
GONCALEZ, Y.
7099
GONCALVES, F.L.
7099
GONCHAROV, A.I.
7043
GOODMAN, A.H.
7708
GORBACH, S.L.
7737
GORDON, A.H.
7122*
GORKIN, V.Z.
7169
GORYACHEV, S.P.
7043
GOUDIE, R.B.
7623
GOULD, H.R.
7219*
GOUNOD, J.
7745
GOVONI, A.F.
7215*
GRACE, J.T., JR.
7116*
GRACE, N.D.
7130*
GRACIE, W.A., JR.
7451
GRADY, G.F.
7211*
GREENBAUM, A.L.
7144*
GREENBERG, M.S.
7130*
GREENFIELD, J.B.
7488
GREENFIELD, L.J.
7588
GREENWALD, M.A.
7130*
GREIM, H.
7151*, 7584
GREWAL, M.S.
7759
GRIDNEVA, L.I.
7169
GRIGORYAN, A.V.
7715
GRIGORYAN, N.A.
7403
GRILLI, S.
7563
GRINBERG, A.A.
7404
GRIZZLE, J.E.
7388
GROSFELD, J.L.
7354, 7506
GROSSMAN, M.I.
7092*, 7191*, 7195*
GUDMAND-HOYER, E.
7441*
GUERRIER, K.
7507
GUILLET, R.
7539*
GUIMARAES, J.S.
7764
GUPTA, S.
7308
GUPTA, S.K.
7357
GURKAN, K.I.
7411
GURR, M.I.
7040
GURVICH, R.N.
7239
GUSTAFSSON, J.A.
7057*, 7132*
GUTSTEIN, S.
7193*
GUY-GRAND, D.
7482
HAALEBOS, M.M.P.
7675
HADDAD, C.M.
7727
HADZIYANNIS, S.J.
7630
HAGGARD, J.H.
7138*
HAIG, T.H.B.
7513
HAKKINEN, I.
7653*
HALL, W.T.
7756
HALMAGYI, D.F.J.
7708
HALPERIN, H.
7164
HALPERIN, M.L.
7106*
HALPERT, J.
7608
HAMDY, M.K.
7751
HAMILL, T.
7124*
HAMOUDI, A.B.
7506
HANICKA, M.
7734
HANICKI, Z.
7734
HANSON, E.L.
7301
HARDY, K.J.
7591
HARDY, R.N.
7067*
HARE, T.A.
7115*
HARGROVE, R.L.
7707
HARLEY, L.M.
7740
HARPER, A.A.
7089*
HARRISON, W.J.
7498*
HART, D.L.
7274
HASAN, S.H.
7580*
HASEGAWA, E.
7161*
HATTORI, H.
7189
HAUGEN, O.A.
7418
HAUSER, S.
7133*
HAVIVI, E.
7196*
HAWBECKER, D.E.
7751
HAWLEY, W.D.
7588
HAWTREY, A.O.
7048
HAYNES, C.D.
7665
HAZENSON, L.B.
7691, 7730, 7731
HEALY, G.R.
7249
HEALEY, J.E., JR.
7477
HELANDER, H.F.
7065*
HELCL, J.
7620
HELLSTROM, K.
7553
HENDREN, W.H.
7488

HENDRICKX, J.
7664
HENMAN, F.D.
7091.
HERS, H.G.
7142., 7146.
HETU, C.
7032.
HIDER, R.C.
7058.
HILL, J.E.
7503
HILL, J.R.
7474
HILTON, P.J.
7058.
HIRIGOYEN, P.
7735
HIROSE, F.M.
7093.
HIRSCHHORN, R.
7109.
HLAVICA, P.
7113.
HO, K.J.
7188
HOFFENBERG, R.
7122.
HOFMANN, A.F.
7184
HOJGAARD, K.
7302
HOJMAN, D.
7450
HOLDER, T.M.
7309
HOLDSWORTH, E.S.
7026.
HOLLAND, P.V.
7230
HOLLENDER, L.F.
7654.
HOLMES, A.W.
7609
HOLT, J.F.
7566
HOMAN, E.
7197.
HOMMES, F.A.
7529.
HONYA, M.
7345, 7346
HOREJSI, J.
7621
HORIO, T.
7042
HORNBAK, H.
7490
HORNBY, G.M.
7141.
HOSHINO, S.
7581.
HOSOYA, E.
7128.
HOUDARD, C.
7493
HOURIHANE, D.O'B.
7447

HOWE, R.B.
7063.
HOWELL, B.A.
7150.
HRADEC, J.
7154.
HSU, H.S.
7209
HUG, G.
7572
HUGHES, M.
7720
HUME, D.M.
7508
HURWITZ, A.
7667
HUSSEY, J.L.
7704
HUVOS, A.G.
7569
HYODO, M.
7145.
IDE, Y.
7596
IKEMOTO, S.
7045, 7046, 7179
IKKALA, E.
7329.
ILIC, V.
7633.
ILYIN, V.S.
7547
INAMDAR, A.R.
7185
INAMOVA, K.B.
7096
INOUE, M.
7596
INOYATOV, I.M.
7464, 7494
IRVIN, J.L.
7537.
IRVINE, W.J.
7275
ISAAC, M.
7183
ISAYEV, O.S.
7645
ISHIKAWA, S.
7558
ISSELBACHER, K.J.
7578.
ITO, M.
7534.
ITOH, T.
7699
IVANOVA, M.A.
7365
IZANT, R.J., JR.
7355
IZURIETA, E.M.
7164
JACOB, E.
7448
JAKAB, L.
7592
JAMES, A.E., JR.
7488

JANOUT, V.
7620
JAO, J.Y.
7167
JARNUM, S.
7441.
JAVETT, S.L.
7430.
JAYSON, M.I.V.
7498.
JEDRYCHOWSKI, A.
7246
JEFFRIES, G.H.
7707
JENNISSEN, H.
7120.
JESKOVA, Z.
7621
JODELET, P.
7608
JOFFRE, F.
7270
JOHANSEN, A.
7036., 7221., 7434
JOHNSON, C.I.
7360
JOHNSON, W.D.
7388, 7389
JONCAS, J.H.
7610
JONES, R.F.C.
7414.
JONES, T.
7082
JORI, A.
7190
JOSLYN, M.A.
7076
JUBIZ, W.
7162
JUCHAU, M.R.
7110.
JUSKO, W.J.
7068.
KABRAWALA, V.N.
7637
KAGAN, I.G.
7249
KALANT, H.
7577.
KALASHNIKOV, S.A.
7669
KAMAKIN, N.F.
7096
KAMENETSKY, S.I.
7671
KAMPFF, C.
7436.
KAMPMANN, H.
7231
KAMPSCHMIDT, R.F.
7165
KANAUCHI, S.
7278
KANDEL, M.
7131.
KANSHIN, N.N.
7229

KARIAGINA, E.I.
7287
KARPMAN, L.M.
7648
KARVONIDI, P.G.
7376
KASATKINA, Z.N.
7732
KATAGIRI, M.
7558
KATER, R.M.H.
7526.
KATO, K.
7157.
KATO, R.
7128.
KATO, Y.
7158.
KATYARE, S.S.
7186
KATZ, S.
7582, 7593
KAUL, R.K.
7589
KAWAI, K.
7342
KAY, N.R.M.
7470
KAZANSKY, D.A.
7381
KEITLINA, F.J.
7691
KENDALL, M.J.
7070.
KENNEDY, M.
7708
KENNEDY, P.A.
7571
KERESELIDZE, T.S.
7723
KERN, I.B.
7414.
KHADZHIBAYEV, M.
7673
KHALKINA, B.I.
7595
KHAMIDOV, G.K.
7615
KHAN, A.
7413.
KHANNA, J.M.
7577.
KHANNA, M.M.
7589
KHANNA, N.
7068.
KHARAT'YAM, A.M.
7497
KHASPEKOV, G.E.
7472
KHAZEI, A.M.
7728
KHAZHINSKAYA, G.M.
7472
KHLOPOV, N.A.
7373
KHO, E.
7726
KHO, K.M.
7448
KHOKHLOV, N.F.
7223
KHOLIAVKO, V.K.
7339
KIEKENS, R.
7212.
KIESEWETTER, W.B.
7469
KIFFER, B.
7349
KILDEMA, L.A.
7547
KIM, C.Y.
7526.
KIMBERG, D.V.
7069.
KINOSHITA, H.
7054.
KIRSNER, J.B.
7416
KIRSNER, J.K.
7499.
KIRYAKOV, Z.
7398
KIZER, D.E.
7150.
KLAASEN, C.R.
7134.
KLEIN, N.C.
7707
KLEMASHEV, I.S.
7649
KLIMENSKAYA, L.V.
7351
KLYUCHIKOV, V.N.
7332
KOBAYASHI, M.
7107.
KOCAK, N.
7082
KOCHEMASOVA, N.G.
7084
KODAIRA, S.
7322.
KOFF, R.S.
7578.
KOHLER, J.J.
7654.
KOHLI, Y.
7342
KOHOUT, E.
7361
KOLOMIICHENKO, M.I.
7401
KOLOMINA, I.D.
7366
KOLOTOVKIN, P.S.
7602
KOLTSOVA, M.V.
7234
KOMI, N.
7700
KOMOGORTSEVA, G.A.
7252
KOMORN, H.J.
7555
KONDO, T.
7177
KONDRATENKO, G.P.
7712
KONSISTORUM, A.V.
7473, 7492
KONYUSHKO, S.D.
7199
KORABELLNIKOV, I.D.
7495
KORNER, A.
7149.
KOROTKO, G.F.
7096
KORSHUNOV, A.P.
7375
KORTEV, A.I.
7619
KOSTROMINA, A.P.
7168
KOSTYUK, F.F.
7396
KOTAKE, Y.
7107.
KOTAKI, A.
7580.
KOTTKE, B.A.
7184
KOVALENKO, V.A.
7766
KOVALSKAYA, K.S.
7557
KOVTUN, K.A.
7429
KOWALCZYK, J.
7377
KOZA, J.
7620
KOZHARSKY, V.V.
7616
KRADINOV, A.I.
7352
KRAJINOVIC, S.
7380
KRAKAUER, K.
7109.
KRAMER, R.
7075
KRASNOKUKI, D.
7164
KRAWITT, E.L.
7114.
KREEL, L.
7272
KREMER, R.M.
7355
KRENDAL, A.P.
7207
KRICHEVSKY, Y.A.
7501
KRIVONOSOVA, K.I.
7731
KROGER, H.
7120.
KRUPEY, J.
7456.
KRUSCHOV, M.M.
7463

KUDOH, Y.
7699
KUKHARENKO, F.I.
7317
KUKOSH, V.I.
7299
KULIK, V.P.
7081
KUMANOV, H.
7398
KUMON, A.
7022.
KUNZE, H.
7192.
KUPHAL, J.
7203
KURUP, P.A.
7181
KUSAKCIOGLU, O.
7324.
KUTCHAK, S.N.
7586, 7603
KUZIN, [illegible].I.
7369, 7382
UZ'MINA, Y.I.
7646
UZNETSOV, I.S.
7676
WIATKOWSKA, J.
7039
YLE, J.
7418, 7435
AGUNAS, R.
7144.
AHIRI, T.K.
7431
AI, Y.L.
7088
AITIO, M.
7653.
AMBOOY, J.P.
7197.
ANGE, D.
7214.
ARENG, L.
7682.
ARIN, V.V.
7206
ARSEN, E.
7434
ASCHEVKER, V.M.
7265, 7515, 7521
ATSINIK, G.E.
7617
AVERDANT, C.
7608
AWS, J.
7570
AZAREVA, N.I.
7693
AZURKINA, V.B.
7287
EAPE, L.L.
7309
EAR, P.E.
7415
EARY, W.P.P.
7143.
LEVINSON, J.D.
7416
LEVINSON, R.A.
7162
LEVITAN, R.
7196.
LEVITSKY, A.P.
7257
LEVY, G.
7068.
LEZNOFF, C.C.
7106.
LICHTENSTEIN, N.
7028.
LIEBER, C.S.
7125., 7126., 7127.
LIEBERMAN, M.M.
7570
LIEW, C.C.
7149.
LIMAKHINA, M.A.
7766
LIN, M.F.
7159.
LINE, F.G.
7605
LINS, Z.C.
7202
LISBOA, B.P.
7132.
LITTLE, M.J.
7708
LIU, K.
7159.
LIVADITIS, A.
7432
LOCKHEART-MUMMERY, H.E.
7487
LODOLA, E.
7331
LOEHRY, C.A.
7058.
LOGAN, A.
7503
LOGINOV, A.S.
7649
LOJDA, Z.
7031.
LONDON, W.T.
7607, 7622
LOSEVA, A.G.
7691, 7731
LOTH, J.
7577.
LOTLIKAR, P.D.
7525.
LOUIS, L.N.
7122.
LOUS, P.
7600.
LOVE, J.W.
7194.
LOW-BEER, T.S.
7025.
LUCAS, C.F.
7417
LUI, S.
7578.
LUISADA-OPPER, A.V.
7112.
LUKINA, T.M.
7427
LUTSEVICH, E.V.
7224, 7715
LYASHEVA, A.P.
7619
LYNFIELD, J.
7362
MAC DONALD, A.J.
7728
MAC DONALD, W.F.
7124.
MACHADO, M.C.C.
7099
MACKAY, C.
7034.
MACKIE, J.A.
7326.
MAC MAHON, H.F.
7554
MAC QUEEN, J.
7124.
MADANAGOPALAN, N.
7680.
MADDING, G.F.
7571
MADIFF, M.M.
7636
MADSEN, B.
7343
MADSEN, S.
7545
MADULI, S.
7218., 7749
MAGGI, V.
7454.
MAGOMEDOV, A.Z.
7769
MAILYAN, A.G.
7227
MAINGUET, P.
7212.
LEDERER, B.
7142.
LEDINGHAM, J.G.G.
7143.
LEE, H.M.
7508
LEEVY, C.M.
7112.
LEHMANS, F.
7735
LEKAGUL, S.
7718
LEMBERG, A.
7164
LEONARD, J.P.
7304
LEONOVICH, N.V.
7670
LEONTIEVA, A.S.
7367
LEOUTSAKOS, B.
7505
LEPOFF, R.B.
7355

LERMAN, R.H.
7756
LEVEILLE, G.A.
7111*
LEVIN, A.A.
7283
LEVIN, J.M.
7665
LEVIN, V.N.
7334
LEVINA, S.I.
7661
MAINWARING, A.R.
7422
MAJIMA, Y.
7176
MAKARENKO, T.P.
7315
MAKAROVA, E.I.
7732
MAKAROVA, N.A.
7285
MAKHMIDOV, A.B.
7370
MAKHMUDOV, O.S.
7693
MAKHMUDOVA, K.H.M.
7695
MAKSIMENKOVA, A.N.
7081
MAKSUDOVA, D.K.
7672
MALAEV, B.N.
7459
MALATHY, K.
7181
MALLET-GUY, P.
7539*
MALLET-GUY, Y.
7539*
MALLIA, A.K.
7210
MANDZIUK, V.D.
7462
MANGIWA, J.
7253
MANKINA, N.S.
7689
MAO, W.L.
7087
MARAN, A.G.D.
7304
MARCER, V.
7443
MARCHAND, C.
7061*
MARCHIS-MOUREN, G.
7030*
MARCUSSEN, H.
7268
MARGARIDO, N.
7099
MARIN, L.A.
7348
MARIOTTI, M.
7443
MARK, I.
7604
MARKO, O.P.
7208, 7473
MARKOV, I.N.
7383
MARKS, J.
7437*, 7439*, 7440*
MARKS, M.I.
7610
MARSHALL, J.N.
7721
MARTINI, G.A.
7736
MARUTA, M.
7322*
MARZO, A.
7634*
MASTELLA, G.
7443
MASTERS, C.J.
7722
MASUMOV, S.A.
7333
MASYUKOVA, E.M.
7366
MATSUDA, M.
7166
MATSUDA, S.
7461
MATSUURA, K.
7054*
MATTENHEIMER, H.
7609
MATUO, Y.
7042
MATYASHIN, I.M.
7733
MAUER, S.M.
7610
MAVLANOV, F.
7497
MAY, R.E.
7552
MAYAT, V.S.
7404
MAYS, E.T.
7303
MC BRIDE, C.M.
7477
MC CULLY, D.J.
7760
MC CURDY, W.C.,III
7588
MC GILL, D.B.
7293
MC GUIGAN, J.E.
7050, 7384*
MC KEE, R.W.
7041
MC LEAN, P.
7144*
MC LEAN, S.
7061*
MC MAHON, J.E.
7767
MC MICHAEL, S.
7612
MC PHERSON, J.R.
7281
MC SWAIN, B.
7475
MEDINA, V.J.
7108*
MEDVEDEVA, N.T.
7267
MEIER, A.L.
7643
MEIKLE, A.W.
7162
MEKATA, H.
7158*
MEKHJIAN, H.S.
7060*
MENDA, R.K.
7476
MENDOZA, C.B., JR.
7389
MERENDINO, K.A.
7296*
MERIKAS, G.E.
7630
MERMET, J.
7608
MESHALKIN, I.N.
7367
METTON, A.
7745
METZ, G.
7564
METZ, J.
7564
MIKUNI, M.
7558
MILITAREV, Y.M.
7458
MILLER, H.L.
7419
MILLER, J.H.
7093*
MILLMAN, I.
7607, 7622
MILONOV, O.B.
7286
MILYUTINA, V.N.
7086
MIMURA, H.
7596
MIMURA, T.
7322*
MIROSHNICHENKO, I.V.
7205
MIRZAEV, A.P.
7334
MISAKI, F.
7342
MISRA, N.C.
7696
MISRA, P.
7125*
MISZPUTEN, S.J.
7565
MITIN, K.S.
7232
MITRA, R.S.
7147*
MIYA, T.S.
7062*

MIYOSHI, T.
7054*

MIZGIREVA, M.F.
7755

MIZUNO, T.
7158*

MIZUTANI, S.
7162

MOCHULSKY, A.S.
7288

MOGUCHEV, V.M.
7662

MOHR, J.R.
7609

MOISEEV, S.G.
7688

MOR, G.
7028*

MORGAN, J.C.
7579*

MORGANTHALER, F.R.
7728

MORI, T.
7083

MORIOKA, T.
7054*

MORLAND, J.
7155*

MORRIS, H.P.
7033*, 7537*

MOSBACH, E.H.
7133*

MOSLEY, W.H.
7697

MOSS, G.S.
7683*

MOTTET, N.K.
7297

MOYLAN, J.P., JR.
7296*

MUKHERJI, A.K.
7425

MULDOWNEY, F.P.
7436*

MULLANE, J.F.
7573, 7638

MULLER-WIELAND, K.
7512

MUNAKATA, M.
7222*

MUNSTER, A.M.
7480

MURAKAMI, Y.
7342

MURALI, D.K.
7035*

MURASHEVA, Z.M.
7427, 7692

URAVIEVA, N.K.
7252

URRAY, J.E.
7305

URRAY, T.S.
7623

USATI, C.C.
7099

USNITSKAYA, E.N.
7399

MUSZBEK, L.
7200

MUTT, V.
7095*

MYAGKOV, A.V.
7227

MYERS, R.N.
7568

MYREN, J.
7327*

MYSHKIN, K.I.
7234

NACCARATO, R.
7599*

NADAR, S.A.
7680*

NADEZHINA, I.M.
7225

NAESS, P.O.
7424

NAGAYO, T.
7534*

NAGEL, C.B.
7393

NAKADA, Y.
7597

NAKAMURA, T.
7042

NAKATA, H.
7054*

NAKAZAWA, K.
7118*

NARDI, G.L.
7516

NARTSISSOV, T.V.
7692

NARYCHEV, A.A.
7459

NATARAJAN, K.
7613

NEBESAR, R.A.
7220*

NECHAI, A.I.
7669

NEIKOV, G.N.
7223

NEKRASOV, L.P.
7754

NELSON, R.S.
7277

NEOGY, K.N.
7737

NESMOZ, J.
7323*

NETAKHATA, Z.M.
7406

NETTO, A.C.
7099

NEUHAUSER, E.B.D.
7488

NEVILLE, E.D.
7148*

NEZELOF, C.
7482

NICHOLSON, C.P., JR.
7668

NICK, W.V.
7702

NICOLO, G.
7347

NIKI, K.
7054*

NIKIFOROV, B.I.
7236

NIKULA, T.D.
7549

NILSSON, L.H.S.
7245

NIRZAMUKHAMEDOV, M.R.
7695

NISHIKAWA, K.
7042

NISHIZUKA, Y.
7022*

NORKUNAS, P.I.
7353

NORKUS, E.P.
7353

NOSANCHUK, J.S.
7566

NOVGORODSKAYA, E.M.
7731

NOVOSELTSEV, A.E.
7335

NUSBAUM, M.
7752

NYHUS, L.M.
7683*

NYMAN, D.
7717

O'BRIEN, T.F.
7611

ODELL, G.B.
7072

ODINA, K.M.
7540

OGANDZHANYAN, L.K.
7748

OHLSSON, E.G.
7675

OKADA, T.
7596

OKUDA, M.
7624*

OKUNUKI, K.
7042

OLESEN, H.
7600*

OLIVECRONA, T.
7065*

OLLENDORF, P.
7743, 7744

OLSEN, J.
7642

OLSEN, S.
7545

ONAJOBI, F.D.
7141*

ONO, T.
7145*

ORESHENKOV, M.M.
7520

O'RIORDAN, J.B.
7478

ORLENKO, Y.M.
7407

ORTMANS, H.
7524*, 7538*
OSHIMA, T.
7128*
OSIPKOVA, T.A.
7233
OSTASHKOV, K.V.
7206
OSTERGAARD, A.H.
7466
OSTROWSKI, K.
7037*
OTHERSEN, H.B., JR.
7761
OTZEN, J.
7743, 7744
OVCHININSKY, N.N.
7367
OVERHOLT, B.F.
7294
OZA, G.G.
7637
PADAYATTY, J.D.
7185
PADIS, N.
7568
PAKHOMOVA, G.V.
7402
PAKTORIS, E.A.
7586
PALIWAL, Y.D.
7479
PALVA, I.P.
7444
PAL'YANTS, T.G.
7725
PANKOV, V.I.
7085
PANTSYREV, Y.M.
7404
PARIKH, N.K.
7758
PARK, H.
7417
PARKS, M.E.
7041
PARKS, P.F.
7138*
PARKS, T.G.
7487
PASECHNIK, I.K.
7585
PASERO, L.
7030*
PASHKOVSKAYA, A.Y.
7725
PASSARO, E., JR.
7679*
PATEL, D.D.
7728
PATSIORA, M.D.
7540, 7648
PAULINO, F.
7747
PAVLOV, A.S.
7463
PAVLOVA, I.I.
7595
PAYNE, W.S.
7306
PAZ, R.A.
7657
PEDERSON, R.A.
7095*
PEDRIDIS, G.
7505
PEDROZA-MARTINEZ, L.
7310
PEGG, C.S.
7418
PENCEV, J.
7621
PENG, M.T.
7087, 7088
PENNA, D.O.
7581*
PERCY-ROBB, I.W.
7153*
PEREIRA, V.G.
7581*
PEREZ DE NEUMAN, P.
7164
PERISSAT, J.
7735
PERKINS, H.A.
7552
PEROZZI, A.
7746
PERSKY, L.
7507
PERSONA, G.
7528*
PETERSEN, P.
7576*
PETTY, A.M.
7677*
PEVNY, I.
7564
PEVTSOV, I.I.
7368
PEVZNER, G.I.
7291
PEVZNER, I.S.
7291
PFISTER, R.C.
7488
PHILLIPS, S.F.
7060*
PICCININO, F.
7248, 7614
PIOVESAN, J.B.
7099
PIVIKOVA, M.I.
7672
PLAA, G.L.
7061*, 7119*
PLIKH, M.B.
7043
POIS, A.J.
7704
POLEY, J.R.
7184
POMELOV, V.S.
7237
PONCE, L.C.
7311
PONOMARENKO, V.N.
7369
POPOWITZ, L.
7573
POSSE, N.
7553
POSTELTHWAIT, R.W.
7388, 7389
POTTER, V.R.
7114*
POTYAKINA, N.N.
7399
POULSEN, H.
7652*
POWELL, K.C.
7739
POZNANSKI, A.K.
7566
PREZIOSI, M.
7746
PRIESTLY, B.G.
7119*
PRINGOT, J.
7269
PRIVALOVA, N.V.
7626
PRIZONT, R.
7450
PRODI, G.
7563
PROVENZALE, L.
7276
PRUCHANSKY, V.S.
7243, 7264
PUGLIATTI, C.
7190
PUIG, J.R.
7738
PURVES, L.R.
7530*
PYLDVERE, E.I.
7547
RAASCHOU-NIELSON, T.
7302
RABE, U.
7198
RABKIN, I.K.
7242
RACOUCHOT, J.
7517
RADDATZ, K.
7633*
RADHAKRISHNAN, A.N.
7023*, 7024*, 703
7074
RAFTERY, E.B.
7570
RAINEY, C.H.
7156*
RAJ, H.G.
7171
RAJAPPAN, P.N.
7757
RAKE, M.O.
7570
RAMAKRISHNA KURUP, C.K
7185
RAMASARMA, T.
7185

RAMASWAMY, K.
7074
RAMCHAND, S.
7763
RAMPAS, J.
7620
RANDOLPH, J.
7738
RANGEL, D.M.
7481
RAPISARDA, L.M.
7742
RAPO, S.
7656*
RAPOPORT, S.I.
7284
RARENKO, A.S.
7364
RASSTRIGIN, N.N.
7315
RAUNIO, V.K.
7607
RAVITCH, M.M.
7726
REED, J.D.
7089*
REEDER, D.D.
7093*
REGAN, J.F.
7420
REHNER, M.
7400
REIBSCHEID, S.
7565
REID, E.
7533*
REINER, C.
7354
RESHETOV, A.I.
7300
RESNICK, R.H.
7636
REUBER, M.D.
7560
REVIGNAS, A.
7276
REYES FERRETTI, E.
7090*
RICHARDS, D.A.
7685*
RIDDELL, W.G.
7502
RIO, F.W.
7420
RITZ, E.
7059*
RIVLIN, R.S.
7178
ROBERT, A.
7386*
ROBERTS, D.F.
7437*
ROBERTS, D.J.
7721
ROBINSON, B.H.
7105*, 7106*
ROBINSON, F.W.
7274
ROBINSON, M.P.
7040
ROCCHI, P.
7563
RODINA, R.I.
7641
ROGACHEVA, V.S.
7318
ROGERS, L.R.
7307
ROKHLIN, E.A.
7238
ROMANOV, N.I.
7616
RORSMAN, G.
7631*
ROSENBERG, H.S.
7485
ROSENOW, E.C., III
7280
ROSS, C.A.C.
7612
ROSS, F.P.
7480
ROSS, J.R.
7324*
ROSSER, R.G.
7703
ROSSI, G.N.
7347
ROSSI, P.
7219*
ROSTOMOVA, I.T.
7629
ROSTOVTSEVA, I.D.
7290
ROTHSTEIN, W.
7581*
ROUSSELET, J.
7500*
ROY, S.N.
7765
ROZANOV, I.R.
7241
RUBIN, E.
7125*, 7126*, 7127*
RUDDON, R.W.
7156*
RUDENSKAYA, M.V.
7557
RUDNEV, G.P.
7617
RUGGIERO, G.
7445, 7614
RUNCIE, J.
7413*
RUPNIK, E.J.
7509
RUSAKOV. V.I.
7350
RUSANOV, A.A.
7233
RUSSELL, D.H.
7108*
RUTHERFORD, R.B.
7675
RYAZANSKAYA, G.V.
7594
RYGAARD, J.
7642
RYZHIKOV, V.N.
7224
RYZHYKH, A.N.
7494
SABELNIKOV, G.I.
7241
SAENKO, V.F.
7390
SAFONOVA, N.V.
7282, 7691
SAGAIDAK, V.N.
7356
SAGEAUY, J.J.
7270
SAHA, H.K.
7663
SAIDI, F.
7361
SAITO, K.
7278
SAKAGAMI, K.
7596
SAKAI, S.
7699
SAKURAI, Y.
7172, 7173
SALAZAR ARCE, A.
7385*
SALMAN, M.M.
7239
SALMI, H.J.
7329*
SALMON, P.R.
7498*
SALOKANNEL, S.J.
7444
SALUENYA, A.I.
7285
SAMADASHVILLI, A.G.
7629
SAMOKHVALOV, V.I.
7381
SANADIZADEH, S.M.
7728
SANDBERG, D.H.
7567
SANDSTROM, B.
7029*
SANIDAD, P.
7419
SAN JUAN, F.
7442
SANTULLI, T.V.
7469
SAPACH, V.K.
7201
SARAVIS, C.A.
7211*
SARDINI, D.
7634*
SASAKI, Y.
7222*
SAVCHUK, B.D.
7428
SAWAKI, S.
7199

SCALA, R.A.
7197*
SCARTH, L.
7275
SCHALLER, K.H.
7632*
SCHAPIRO, H.
7100
SCHEDL, H.P.
7055*
SCHENK, P.
7214*
SCHILDT, B.E.
7049
SCHINDLER, A.M.
7561
SCHIODT, T.
7556
SCHLICKE, C.P.
7503
SCHMIDT, D.
7204
SCHMIDT, F.W.
7609
SCHMIDT, P.J.
7230
SCHMITZ-MOORMAN, P.
7736
SCHMUTZER, K.J.
7420
SCHNABEL, K.
7214*
SCHNEIDER, R.E.
7025*
SCHNELL, R.C.
7062*
SCHOENFIELD, L.J.
7184
SCHONENBERG, H.
7452*
SCHUBERT, W.K.
7572
SCHUHMANN, R.E.
7182
SCHUMER, W.
7683*
SCHUSTER, M.M.
7194*
SCHWARTZ, M.
7644
SCHWARTZ, S.E.
7358
SCHWARTZ, S.I.
7651*
SCOTT, G.L.
7678*
SCOTT-BURDEN, T.
7048
SEAH, C.S.
7448
SEDGWICK, C.E.
7758
SEDOVA, N.N.
7724
SEETHANATHAN, P.
7181
SEGLEN, P.O.
7155*
SEIDMAN, I.
7536*
SELMAIR, H.
7524*, 7538*, 7633*
SEMENOV, V.V.
7402
SERGEEV, V.V.
7369
SERGIENKO, V.S.
7658
SETHI, R.S.
7357
SHAH, N.C.
7421
SHAH, R.M.
7637
SHALIMOV, A.A.
7390
SHAMSIYEV, S.S.
7351
SHANKARAN, R.
7171
SHARMA, B.V.S.
7185
SHAROV, B.K.
7290
SHAROVA, Y.A.
7260
SHARYGIN, A.A.
7690
SHEENA, K.S.
7477
SHEFER, S.
7133*
SHEIKMAN, M.B.
7617
SHEKTER, I.A.
7267
SHEPHERD, A.R.
7739
SHERBON, K.J.
7468
SHERSTNEV, A.K.
7288
SHESHABERIDZE, M.S.
7639
SHEVCHENKO, I.A.
7261, 7262
SHIH, V.E.
7561
SHIMOSATO, Y.
7558
SHISHINO, H.
7624*
SHISHOVA, E.K.
7496
SHLYGIN, G.K.
7104
SHORE, J.D.
7140*
SHOR-PINSKER, E.
7310
SHUBA, L.I.
7687
SHUBA, M.F.
7084
SHULMAN, V.S.
7628
SHUMKINA, O.B.
7586
SHUSTER, S.
7437*, 7439*, 7440*
SIAK, C.L.
7448
SIDORENKOV, O.K.
7098
SIES, H.
7131*
SILVA, L.DEC.
7764
SILVA-CUEVAS, A.
7310
SIMANKINA, E.P.
7463
SIMENKOV, V.M.
7381
SIMOONS, F.J.
7446
SIMPSON, J.D.
7275
SINAIKO, G.A.
7586
SINGH, B.
7357
SINGH, R.V.
7696
SINGLETON, E.B.
7485
SINHA, H.B.
7423
SIPAROV, I.N.
7543
SIURALA, M.
7329*
SISLER, G.E.
7362
SITENKO, V.M.
7669
SJOVALL, J.
7553
SKAKUN, N.P.
7170
SKILANDAT, P.
7632*
SKINHOJ, P.
7600*
SKJOLDBORG, H.
7343
SKLAR, M.
7698
SKREDE, S.
7123*
SLEISENGER, M.H.
7707
SMAGIN, V.G.
7522
SMALL, D.M.
7656*
SMIRNOV, V.F.
7520
SMIRNOVA, A.P.
7073
SMIRNOVA, E.S.
7463
SMITH, C.
7161*

SMITH, L.D.
7150*
SHOLSKAYA, G.P.
7103
SMUCKLER, E.A.
7562
SMY, J.R.
7089*
SMYTH, N.P.
7718
SNYDER, R.
7115*
SNYDER, S.H.
7108*
SOBEL, S.H.
7358
SOGEMEIER, F.
7571
SOKOLOV, L.K.
7224, 7237, 7369
SOKOLOV, V.I.
7285, 7520
SOKOLOVA, G.M.
7627
SOMMERAU, J.
7154*
SOOD, I.D.
7762
SOSNINA, T.P.
7541
SPENCER, F.C.
7312, 7362
SREEBNY, L.M.
7681*
SREENIVASAN, A.
7186
SRIVASTAVA, V.K.
7479
STALMANS, W.
7142*, 7146*
STANISLAVSKY, E.S.
7687
STARTSEV, I.V.
7391
STARUSHENKO, L.I.
7168
STEIGER, E.
7326*
STEIN, G.R.
7760
STELLAR, E.
7078*
STEMMER, E.A.
7684*
STERN, L.
7068*
STESINA, L.N.
7169
STOUT, T.J.
7386*
TOYANOV, A.
7457
TRAUB, K.
7120*
TROBEL, H.W., JR.
7537*
TRUCHKOV, V.I.
7224
STRUYVEN, J.
7212*
STULL, J.R.
7660
STUNKARD, A.J.
7078*
SUBRAMANIAM, R.
7680*
SUCHKOV, A.V.
7626
SUEMASU, K.
7558
SUGA, S.
7158*
SUGIRI
7710
SUKHOMLINA, R.A.
7242, 7286
SULG, I.
7631*
SULTAN, M.
7324*
SUMARTINI, T.
7710
SUNZEL, H.
7666
SUTCLIFFE, J.
7319
SUTNICK, A.I.
7607, 7622
SUZUKI, S.
7107*, 7700
SVISTUN, T.I.
7097
SWAMINATHAN, N.
7023*, 7024*
SWAN, M.
7436*
SWELL, L.
7655*
SYCHEV, P.S.
7373
SYNOVETS, A.S.
7257
SYROMYATNIKOVA, E.N.
7594
SZADKOWSKI, D.
7632*
SZCZEKLIK, A.
7551
SZEWCZUK, A.
7039
SZYBINSKI, Z.
7734
TAKACS, L.
7592
TAKADA, A.
7597
TAKAHASHI, A.
7128*
TAKAHASHI, K.
7596, 7700
TAKAHASHI, M.
7328*
TAKEDA, M.
7022*
TAKENAKA, M.
7222*
TAKEUCHI, J.
7597
TAKEUCHI, T.
7222*
TAKKUNEN, J.T.
7444
TALARICO, K.S.
7148*
TANAKA, N.
7344
TANGHE, W.
7664
TANIDA, S.
7222*
TANNOCK, I.F.
7044
TARAN, V.V.
7619
TARASOVA, A.S.
7428
TASHIRO, T.
7172, 7173
TASHKHODZHAEV, P.I.
7496
TAUXE, W.N.
7293
TAYBI, H.
7489
TAYLOR, C.B.
7188
TEEBOR, G.W.
7536*
TEFFT, M.
7220*
TELLMAN, W.H.
7483
TEPHLY, T.R.
7161*
TERAS, L.E.
7547
TERAYAMA, T.
7699
THAMAN, O.P.
7357
THEUERKAUF, F.J., JR.
7474
THOMAS, C.G.
7668
THOMAS, E.
7613
THOMFORD, N.R.
7660
THOMINE, E.
7482
THOMPSON, J.C.
7093*
THOMSON, T.H.
7413*
TIKHONOV, K.B.
7264
TIKHONOV, M.K.
7374
TIKOTSKY, V.V.
7766
TINKER, J.
7082
TISCORNOA, D.M.
7450

TODOROVIC, V.
7425
TOKIN, I.B.
7038
TOMIYOSHI, F.
7054*
TOMLINSON, S.J.
7182
TOMLINSON, V.M.
7182
TONDI, D.
7426
TONER, P.G.
7034*
TOULET, J.
7500*
TREPO, C.
7323*
TRETHEWIE, F.R.
7575*
TRETYAKOVA, T.A.
7289
TREY, C.
7211*
TRIBBLE, D.E.
7311
TROELSTRA, J.A.
7529*
TRUDEAU, W.L.
7384*
TRUNIN, M.A.
7523
TSEKHANOVICH, T.I.
7366
TSIRULNIKOVA, N.E.
7237
TSLAF, Z.Z.
7518
TSODIKOV, G.V.
7336
TSUKADA, Y.
7559
TSVETKOVA, V.V.
7548
TSVIRKUN, F.M.
7257
TUMEN, H.J.
7546, 7752
TURULEVA, V.T.
7729
TUZHILIN, S.A.
7285, 7518
TYLER, F.H.
7162
UBEZIO, G.
7254
UEKUSA, M.
7322*
UMANSKY, S.S.
7240
UNTERECKER, W.J.
7526*
UPCHURCH, H.F.
7165
USIKOV, F.F.
7407
USPENSKY, V.M.
7394
USTACH, T.J.
7194*
USUKU, G.
7345
UTESHEV, N.S.
7402
VAINSHTEIN, T.Y.
7514
VAISBROT, V.V.
7496
VALBUENA, O.
7090*
VALENKEVICH, L.N.
7519, 7522
VALKIN, M.L.
7397
VALLE-RIESTRA, J.
7066*
VAN DER LINDEN, W.
7666
VAN DIJCK, J.M.
7033*
VAN GRAVENITZ, A.
7250
VARGA, D.
7708
VASILENKO, G.L.
7673
VASILENKO, V.K.
7336
VASILEVSKAYA, I.S.
7694
VASILIEV, R.K.
7286
VASILIEV, Y.V.
7237, 7369
VASIL'YEVA, F.M.
7694
VASYUTKOV, V.Y.
7692
VAYNSHTEYN, S.G.
7672
VELCEV, V.
7460
VENKITASUBRAMANIAN, T.A.
7171
VEPRINSKAYA, S.I.
7259
VERIN, V.K.
7052
VERNON, E.
7706
VERYOVKINA, I.V.
7169
VESELOV, V.S.
7405
VIAMONTE, M., JR.
7635
VILDT, M.O.
7399
VILELA, M.P.
7565
VINCENZI, L.
7254
VINOGRADOV, V.V.
7661
VISHAGUROV, K.K.
7350
VISINTINI, F.
7348
VITKOVAKAYA, T.A.
7405
VLAHCEVIC, 7.R.
7655*
VODOLAGIN, V.D.
7337
VOGEL, W.H.
7115*
VOGT, W.
7192*
VOLCHEK, V.M.
7335
VOROB'YEVA, N.M.
7079
VOROB'YEVA, T.V.
7104
VORONCHIKHIN, S.I.
7676
VORONTSOV, I.V.
7205
WAGENSTEFN, O.H.
7203
WAGGONER, J.G.
7063*
WAGNER, B.P.
7560
WAGNER, M.L.
7485
WAHLBERG, P.
7717
WALKER, L.G., JR.
7665
WALKER-SMITH, J.A.
7253
WALLER, C.E.
7761
WALLSH, E.
7362
WARREN, W.D.
7635
WASHINGTON, P.D.
7719
WASS, M.
7056*
WATANBE, E.
7077
WATKINS, E., JR.
7728
WATTIAUX, R.
7033*
WATTIAUX-DE CONICK, S
7033*
WEAKLEY, S.D.
7303
WEBER, A.L.
7488
WEBER, K.M.
7198
WEINER, S.V.
7193*
WEIR, D.G.
7447
WEISBERG, H.
7320*
WEISS, H.
7593

EISSMANN, G.
7109*
ELLS, P.S.
7209
ENGER, J.
7677*
ERNER, J.L.
7489
FSCH, H.
7544
EST, C.D.
7162
EST, C.E.
7139*
HITCOMB, F.F.
7758
IDMER, A.
7504
IKINSKI, R.
7164
ILDHIRT, E.
7271, 7524*, 7538*
ILEY, J.H.
7111*
ILKEY, I.S.
7739
ILKINSON, C.J.
7590
ILLE, G.
7192*
ILLIAMS, G.M.
7508
ILLIAMS, G.R.
7105*, 7106*
ILLIAMS, L.E.
7292
ILLIAMS, L.F., JR.
7741
ILLIAMS, R.
7570
ILMORE, D.M.
7326*
NEGRAD, A.I.
7527*
INNICK, S.
7135*
IRADISURIA, S.
7044
THERS, H.R.
7710
LF, G.
7178
WOODS, J.E.
7305
WRUBLE, L.D.
7100
WULFF, H.R.
7268
WYATT, A.P.
7454*
YAFFE, S.J.
7068*, 7110*
YAGI, K.
7580*
YAKHONTOVA, O.I.
7519, 7522
YAKUSHIN, V.I.
7289
YAMADA, S.
7534*
YAMAMURA, H.
7022*
YAMANO, K.
7461
YAMAOKA, K.
7174
YANKEE, R.A.
7622
YAP, E.H.
7279
YAREMCHUK, A.Y.
7733
YAREMENKO, M.S.
7163
YEH, Y.Y.
7111*
YEUNG LAIWAH, A.C.
7623
YONG, V.
7448
YOSHIDA, T.
7083
YOUNOSZAI, M.K.
7055*
YULDASHEV, U.I.
7409
YVERGNEAUX, J.P.
7217*
ZACHARY, R.B.
7470
ZAITSEV, G.P.
7391
ZAITSEV, V.T.
7390
ZAMAN, V.
7279
ZAMCHII, A.A.
7260
ZAMCHIY, A.A.
7650
ZAMCHY, A.A.
7641
ZASLAVSKY, M.L.
7626
ZENKOV, V.P.
7053
ZEN-YOJI, H.
7699
ZERBINO, D.D.
7750
ZEZULIN, W.
7484
ZHAVORONKOVA, L.Y.
7232
ZHDANOVA, L.D.
7695
ZHEREBTSOV, L.A.
7260, 7641, 7650
ZHUK, E.A.
7514
ZIMMER, G.
7129*
ZIMMERER, J.
7544
ZIMMERMAN, H.J.
7593
ZIMMERMAN, V.S.
7256
ZINTERHOFER, L.
7250
ZOLLINGER, P.M.
7702
ZOLOTNITSKAYA, R.P.
7640
ZUBAREV, P.N.
7300
ZUBOVSKY, G.A.
7594
ZUFAROV, K.A.
7371, 7496
ZUIDEMA, G.D.
7675

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- ABDOMEN
  - ACUTE, PANCREATITIS, ATHEROSCLEROSIS (7688)
  - DISEASE, DIAGNOSIS, ANGIOGRAPHY, ISOTOPE SCANNING (7220)*
  - HIDDEN INJURIES, DIAGNOSIS (7236)
  - PAIN, INFANCY (7738)
  - PRESACRAL MASSES, RADIOLOGY, CHILDREN (7489)
  - SELECTIVE HYPOTHERMIA, ACUTE PANCREATITIS (7206)
  - TRAUMA, DIAGNOSIS, THERAPY (7255)
  - TRAUMA, INTESTINAL DAMAGE, SURGERY (7714)
  - TRAUMA, MECKEL'S DIVERTICULUM (7417)
- ABSCESS
  - AMEBIC, LIVER (7762)
- ABSORPTION
  - AMINO ACID, VITAMIN D, ALPHA-AMINO-ISOBUTYRIC ACID (7055)*
  - CALCIUM, SMALL INTESTINE, RENAL INSUFFICIENCY (7728)
  - COLON, ELECTROLYTE, PERFUSION, BILE ACID (7060)*
  - DUODENUM, ILEUM, DRUGS, CARBONIC ANHYDRASE (7062)*
  - INTESTINE, DRUG, SALICYLIC ACID, BARBITAL (7071)*
  - LACTOSE INTOLERANCE (7448)
  - LIPID, STOMACH, LIPOLYSIS (7065)*
  - LYSINE, HEAT DAMAGE, GLUCOSE (7064)*
  - PROTEIN, TANNIC ACID (7076)
  - SMALL INTESTINE, RIBOFLAVIN, EXCRETION (7068)*
  - 3-DEHYDRORETINOIC ACID, METABOLISM, BIOLOGICAL POTENCY (7210)
  - VITAMIN B12, PERNICIOUS ANEMIA, ACHLORHYDRIA (7275)
  - WHEAT PROTEIN, LYSINE AND THREONINE, DIGESTION (7054)*
- ACID-BASE
  - ACID INGESTION, CICATRISING LESIONS, SURGERY (7357)
  - TANNIC ACID, PROTEIN, ABSORPTION (7076)
- ACIDITY
  - CALCIUM, ACID OUTPUT, HYPERSECRETION (7679)*
  - GASTRIC, RADIOTELEMETRY (7261)
  - GASTRIC JUICE, ION-EXCHANGE RESINS (7240)
  - STOMACH, SECRETION, HYPEROSMOLAL (7089)*
- ACIDITY TITRATION
  - GASTRIC JUICE, DUODENUM, NEUTRALIZATION (7191)*
- ADENOSINE TRIPHOSPHATE
  - PHOSPHATASE, LIVER, BILE CANALICULAR (7029)*
- ADRENAL
  - CORTEX, CHRONIC PANCREATITIS, ADDISON'S DISEASE (7518)
  - 5-HYDROXYTRYPTAMINE, BORDETELLA PERTUSSIS VACCINE, STOMACH, DUODENUM (7200)
- ADRENALECTOMY
  - LIVER, INDUCTION, TYROSINE AMINOTRANSFERASE, PHENTOLAMINE (7157)*
- ALCOHOL
  - ANESTHESIA, LIVER FUNCTION (7183)
  - CHRONIC LIVER DISEASE, FATTY ACIDS (7634)*
  - DEHYDROGENASE, LIVER, CHELATION, RATE (7140)*
  - DEHYDROGENASE, METABOLISM, LIVER (7126)*
  - ETHANOL, FATTY LIVER, PYRAZOLE (7577)*
  - FATTY LIVER, ENZYME ACTIVITY (7576)*
  - FATTY LIVER, PHENOBARBITAL (7578)*
  - INDUCED FATTY LIVER, PYRAZOLE (7579)*
  - LIVER, CIRRHOSIS, PROTEIN MALNUTRITION (7637)
  - LIVER, MICROSOMES, MITOCHONDRIA (7127)*
  - LIVER DAMAGE, HISTAMINE (7575)*
- AMEBIASIS
  - INTESTINE, EPIDEMIOLOGY, DIAGNOSIS (7755)
- AMINE
  - CATECHOLAMINE SECRETION, GASTRIC HEMORRHAGE, PHEOCHROMOCYTOMA (7717)
  - IMIPRAMINE, METABOLISM, LIVER, STRAIN DIFFERENCES (7190)
- AMINO ACID
  - ABSORPTION, VITAMIN D, ALPHA-AMINO-ISOBUTYRIC ACID (7055)*
  - ALPHA-AMINOISOBUTYRIC ACID, TRANSPORT, HEPATOMA CELLS, TYROSINE AMINOTRANSFERASE (7114)*
  - CONTENT, PANCREATIC ISOAMYLASES (7030)*
  - GLUTAMATE, ASPARTATE, ALAMINE, EVERTED SACS (7074)
  - LIVER, PROTEIN SYNTHESIS, CELL-FREE SYSTEM (7149)*
  - LYSINE, THREONINE SUPPLEMENTATION, ABSORPTION (7054)*
  - MITOCHONDRIAL PROTEIN, CYCLOHEXIMIDE (7152)*
  - PENICILLAMINE, ISOMERS, TRANSPORT, SMALL INTESTINE (7056)*
  - SERINE, TYROSINE, SGOT, SGPT (7159)*
- AMMONIA
  - CHRONIC LIVER DISEASE, ARGININE AND ORNITHINE (7565)
- AMPULLA OF VATER
  - DIAGNOSIS, TREATMENT (7662)
- ANALGESIC
  - ASPIRIN, GASTRIC HEMORRHAGE (7336)
- ANASTOMOSIS
  - CHOLEDOCHODUODENOSTOMY, CHOLECYSTECTOMY, CHOLECYSTODUODENOSTOMY (7670)
  - GASTRIC CERVICAL ESOPHAGUS, RECONSTRUCTION (7304)
  - GASTRO-DUODENAL, GASTRECTOMY (7341)
  - GASTROINTESTINAL, REPAIR, SUBTOTAL GASTRECTOMY (7371)
  - INTESTINAL, HEALING, BACTERIA (7726)
- ANEMIA
  - APLASTIC, ACUTE VIRAL HEPATITIS (7405)
  - HEMOLYTIC, ACUTE CHYLOPERITONEUM, MALIGNANT LYMPHORETICULOSIS (7745)
  - IRON DEFICIENCY, GASTRIC MUCOSA (7329)*
  - PERNICIOUS, ULTRASTRUCTURE, ATROPHIC GASTRITIS (7320)*
  - PERNICIOUS, VITAMIN B12 ABSORPTION,

  ACHLORHYDRIA (7275)
ANESTHESIA
  ETHANOL, LIVER FUNCTION (7183)
  HALOTHANE, HEPATITIS (7590)
  TRANSPLEURAL SURGERY, ESOPHAGEAL CANCER (7315)
ANGIOGRAPHY
  LIVER, CYST, ARTERY, CIRRHOSIS, TUMORS (7219)•
ANOMALY
  ANORECTAL, CLASSIFICATION (7469)
  CONGENITAL, DUODENUM, DIVERTICULA (7363)
  CONGENITAL, HEMIHYPERTROPHY, EPITHELIAL HEPATOBLASTOMA (7561)
  ESOPHAGO-CARDIAC FISTULA, EMBOLIC MENINGO-ENCEPHALITIS (7302)
  GASTRIC DUPLICATION (7355)
  MEGACOLON, HIRSCHPRUNG'S DISEASE, RADIOLOGY (7488)
  PYLORIC DUPLICATION, NEONATE, SURGERY (7354)
ANOREXIA
  NERVOSA (7709)
ANTIBIOTIC
  AMPICILLIN, COLONIC CANCER, SURGERY (7466)
  COLITIS, PSEUDOMEMBRANOUS (7483)
  PENICILLIN G, WILSON'S DISEASE (7564)
ANTIBODY
  AUTO-, INFECTIOUS HEPATITIS (7621)
  FLUORESCENT, COLIENTERITIS, DIAGNOSIS, INFANTS (7287)
  GASTRIN, PRODUCTION, BEHAVIOR, USE (7050)
  HUMAN, AUSTRALIA ANTIGEN, HEPATITIS (7607)
ANTIGEN
  AUSTRALIA, ACUTE VIRAL HEPATITIS (7606), (7611), (7620), (7623)
  AUSTRALIA, ACUTE VIRAL HEPATITIS, CIRRHOSIS (7630)
  AUSTRALIA, ANTIBODIES, HEPATITIS (7607)
  AUSTRALIA, HEPATITIS, LEUKEMIA (7622)
  AUSTRALIA, VIRAL HEPATITIS (7612)
  ACUTE VIRAL HEPATITIS, TEST (7230)
  CARCINOEMBRYONIC, ULTRASTRUCTURAL LOCALIZATION, COLON (7456)•
  CYST, AMEBIASIS, SERODIAGNOSIS (7279)
  VIBRIO PARAHAEMOLYTICUS, EPIDEMIOLOGY (7699)
  VIRAL HEPATITIS, CROSSED ELECTROPHORESIS (7211)•
NUS
  ANORECTAL ANOMALIES, CLASSIFICATION (7469)
  CARCINOMA, COLON, RECTUM (7475)
  INTERNAL HEMORRHOIDS, RINGING (7486)
  SPHINCTEROTOMY, FISSURE-IN-ANO (7479)
PPENDICITIS
  ILEUS, PERITONITIS (7495)
PPENDIX
  CARCINOID TUMOR (7479)
  MORBUS CROHN, ULCERATIVE COLITIS (7434)
TERIOGRAPHY
  LIVER, HEPATOMA, CIRCULATION (7213)•
CARIASIS
  EPIDEMIOLOGY, SOIL INFECTION, CHILDREN (7768)
  LIVER, BILE DUCTS, SURGERY (7769)
  SCHWARTZMAN PHENOMENON, ASCARIDE TISSUE (7201)
ASCITES
  CHYLOUS, MALIGNANT TUMORS, LIVER, STOMACH (7750)
  GLYCOGEN SYNTHETASE ACTIVITY, ALKYLATING AGENTS (7173)
  HYDATID CYST, CHOLECYSTECTOMY (7758)
  LIVER, HEAVY METAL IONS (7544)
  MASSIVE, GASTRIC ANTHRAX (7361)
  TUMOR CELLS, GLYCOGEN PHOSPHORYLASE, ALKYLATING AGENTS (7172)
ATRESIA
  ANAL, RECTAL MALFORMATION, SKELETAL (7452)•
  CONGENITAL, INTESTINE, CHILDREN (7689)
AUTORADIOGRAPHY
  ENZYMES, LOCALISATION, LIVER (7037)•
  ERYTHROCYTE, LIVER (7049)
BACTERIA
  AEROMONAS HYDROPHILA, FECES, DNASE AGAR (7250)
  BALANTIDIUM COLI, COLITIS (7763)
  BALANTIDIUM COLI, DIARRHEA (7756)
  BLOOD, INFECTION, SMALL INTESTINE (7677)•
  COLIENTERITIS, EPIDEMIOLOGY, NEONATE (7730)
  COLIENTERITIS, FLUORESCENT ANTIBODIES, DIAGNOSIS, INFANTS (7287)
  COLIENTERITIS, NEONATE (7731)
  E. COLI, CHILDREN (7691)
  E. COLI, DYSENTERY, SEROLOGY (7729)
  GASTRIC ANTHRAX, MASSIVE ASCITES (7361)
  INTESTINAL, ANASTOMOSIS HEALING (7726)
  INTESTINAL MICROFLORA (7208)
  SALMONELLA (7202)
  SALMONELLA, FOOD POISONING (7706)
  SALMONELLA, SEROTYPE (7719)
  SALMONELLA PANAMA, DISEASE (7732)
  SALMONELLA VIRCHOW (7720), (7721)
  SALMONELLAE, MACROPHAGE INTERACTION (7209)
  SALMONELLA ENTERITIDIS, TOXICITY (7751)
  SALMONELLOSIS, INFANTS, CHILDREN (7710)
BICARBONATE
  EXCRETION, ACIDOSIS, MALABSORPTION, PARATHORMONE (7430)•
  PANCREAS, OUTPUT, SECRETIN (7195)•
BILE
  ABNORMAL, CHOLESTEROL GALLSTONE, LIVER (7656)•
  ACID, KINETICS, MAN (7184)
  BIOSYNTHESIS, TAUROCHOLIC ACID, GLYCOCHOLIC ACID, DESOXYCHOLIC ACID (7187)
  CHOLECYSTITIS, BENZOHEXONIUM (7671)
  COLLECTION TECHNIQUE, RAT (7182)
  CONCENTRATION, SERUM, INFANCY (7567)
  HEMOBILIA, PANCREATIC PSEUDOCYST, HEMORRHAGE (7508)
  LIVER, GALLBLADDER, GALLSTONES (7655)•

- METABOLISM, REGULATION, LIVER (7133)*
- PIGMENTS, METABOLISM (7174)
- SECRETION, BILE ACID, CHOLATE FORMATION (7120)
- SECRETION, LIVER, PITUITRIN (7163)
- UNCONJUGATED SALTS, SMALL INTESTINAL MUCOSA, MORPHOLOGICAL CHANGE (7025)*

BILE ACID
- EFFECT, BILE SECRETION, CHOLATE FORMATION (7120)
- SYNTHESIS, LIVER, CHRONIC BILIARY DRAINAGE (7153)*

BILE DUCT
- CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, GALLBLADDER (7215)*
- EXTRAHEPATIC-INTRAHEPATIC, BILE DUCT OBSTRUCTION (7231)
- LIVER, ASCARIASIS, SURGERY (7769)

BILIARY TRACT
- ACUTE EMPHYSEMATOUS CHOLECYSTITIS, SURGERY, PENICILLIN (7663)
- BILE DUCT, CANCER, SURGERY (7510)
- CHOLECYSTOCHOLANGIOGRAPHY (7286)
- CHOLEDOCHAL CYST, HEPATOSCINTOGRAPHY (7292)
- CHOLEDOCHODUODENOSTOMY (7667)
- CHOLEDOCHOLITHIASIS, HEPATORENAL INSUFFICIENCY, OBSTRUCTIVE JAUNDICE (7658)
- DIAGNOSIS, ENZYMOLOGY, LIVER (7247)
- DISTENTION, BLOOD FLOW, AORTA (7665)
- HEPATO-BILIARY DISEASE, SERUM PROTEOLYTIC ACTIVITY, ALPHA2-MACROGLOBULIN (7551)
- INTESTINAL FISTULA (7660)
- OBSTRUCTION, CHOLEDOCHOENTEROSTOMY, TRANSDUODENAL SPHINCTEROTOMY (7668)
- OBSTRUCTION, JAUNDICE, LIVER HISTOLOGY (7652)*
- OBSTRUCTION, PORTAL CIRCULATION, DOG (7675)
- RECURRENT CHOLESTASIS, CHOLESTYRAMINE, PREGNANCY (7553)
- SPASTICITY, KETOSCILIUM (7749)
- SURGERY, ACUTE RENAL FAILURE, JAUNDICE (7657)
- TERMINAL BILE DUCT, JAUNDICE, SIBLINGS (7554)

BILIRUBIN
- CHOLESTASIS, CONJUGATED, UNCONJUGATED, KUPFFER CELLS (7532)*
- DISTRIBUTION, TOXICITY, ALBUMIN (7072)
- FECAL EXCRETION, UROBILINOGEN, BILIRUBIN (7063)*
- FRACTIONS, CHRONIC HEPATITIS, ACUTE HEPATITIS, LIVER CIRRHOSIS (7627)

BIOPSY
- DUODENAL MUCOSA, DUODENITIS, GASTROINTESTINAL DISEASES (7321)*
- STOMACH, ANTRUM, CHRONIC GASTRITIS (7243)

BLOOD
- PLASMA, GROWTH HORMONE, FREE FATTY ACID (7322)*

BLOOD VESSEL
- ABDOMINAL VENA CAVA PRESSURE, PORTAL HYPERTENSION (7638)
- AORTA, RENAL ARTERY, BILIARY TRACT DISTENTION (7665)
- HEPATIC ARTERY LIGATION, HEMANGIOMATOSIS (7570)
- HEPATIC ARTERY LIGATION, METASTATIC TUMOR (7571)

BOWEL
- FUNCTION, ILEOSTOMY, DIET (7413)*
- PSYCHIATRIC, CROHN'S DISEASE, STEATORRHEA (7438)*

CALCULUS
- GALLSTONE, ILEUS, SMALL INTESTINE (7426)

CANCER
- COLON, SURGERY, AMPICILLIN (7466)
- COLON, APPENDECTOMY (7490)
- COLONIC PERFORATION, DIVERTICULA, PERITONITIS (7493)
- DNA POLYMERASE, RNA POLYMERASE (7137)*
- EHRLICH CARCINOMA, YOSHIDA SARCOMA, CYCLOPHOSPHAMIDE ACTIVATION (7177)
- ESOPHAGUS, TRANSPLEURAL SURGERY, ANESTHESIA (7315)
- GASTRIC, CHEMOTHERAPY (7379)
- GASTRIC, ENDOSCOPY (7277)
- GASTRIC, LIVER MORPHOLOGY (7340)
- GASTRIC, PARTIAL RESECTION (7381)
- HEPATOMA, CYTOSTATIC AGENTS, METHOTREXATE, RADIOTHERAPY (7531)*
- LARGE INTESTINE, CHRONIC OBSTRUCTION (7467)
- LARGE INTESTINE, SURGERY (7459)
- LEUKEMIA, AUSTRALIA ANTIGEN, HEPATITIS (7622)
- LEUKEMIA, COLON, TYPHLITIS, CHILDHOOD (7485)
- LIVER, SURGERY (7542)
- PULMONARY, LIVER FUNCTION (7594)
- RECTUM, COLON, SURGERY (7458)
- RECTUM, LYMPHOGRAPHY (7266)
- RECTUM, SYNCHRONOUS EXTIRPATION (7464)
- RECTUM, TREATMENT (7463)
- STOMACH, COLLAGENOLYTIC ACTIVITY, GASTRIC ULCER (7346)
- STOMACH, CYTODIAGNOSIS, FLUORESCENCE, LAVAGE (7534)*
- STOMACH, DEVELOPMENT (7342)
- STOMACH, DIABETES MELLITUS (7383)
- STOMACH, DUODENUM, RELAPSE, GASTRECTOMY (7356)
- STOMACH, FORMIC ACID DERIVATIVE (7330)*
- STOMACH, MORTALITY (7380)
- STOMACH, RESECTION (7382)
- STOMACH, X-RAY DIAGNOSIS (7267)

CARBOHYDRATE
- ABSORPTION, LACTOSE INTOLERANCE (7448)
- GLUCOCORTICOID, LIVER GLYCOGEN PHOSPHORYLASE (7142)*
- GLUCOCORTICOID, LIVER, GLYCOGEN SYNTHETASE (7146)*
- HYDROLYSIS, MALTASE, INTESTINE (7024)*
- LACTOSE INTOLERANCE, MILKING, CULTURE (7446)
- LACTULOSE, CIRRHOSIS, HEPATOPORTAL ENCEPHALOPATHY (7631)*
- METABOLISM, HEPATECTOMY, GLUCOSE, FATTY ACID (7148)*

ARBON TETRACHLORIDE
  DISTRIBUTION, SKF 525A, RAT, TISSUE (7061)*
ARCINOGEN
  N-2-FLUORENYLACETAMIDE, HEPATIC NODULE, METABOLISM (7536)*
  STOMACH, FORMIC ACID DERIVATIVE (7330)*
ARCINOGENESIS
  GASTRIC, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE (7328)*
  HEPATOMA, ANAEROBIC GLYCOLYSIS (7533)*
ARCINOMA
  ADENO-, COLON, RECTUM (7480)
  COLON, 1-B-D-ARABINOFURANOSYLCYTOSINE (7455)*
  COLON, RECTUM, ANUS (7475)
  COLON, RETROPERITONEAL, RADIOTHERAPY (7461)
  ESOPHAGOGASTRIC JUNCTION, ESOPHAGOGASTROSTOMY (7340)
  GASTRIC, HISTOLOGY (7344)
  ILEUM (7421)
  LIVER, HEPATOBLASTOMA (7556)
  LUNG, METASTASIS, LIVER (7558)
  PANCREAS, BILE DUCT, DUODENAL, SECRETION (7221)*
  PANCREAS, ECHOGRAPHY, PANCREATITIS (7216)*
  PRIMARY, GALLBLADDER (7664)
  PRIMARY, HEPATIC, CIRRHOSIS, HISTOPATHOLOGY (7524)*
  PRIMARY, HEPATIC, CIRRHOSIS, LAPAROSCOPY, AUTOPSY (7538)*
  RECTUM (7476)
  STOMACH, DEATH (7377)
RDIA
  INCOMPETENCE, REFLUX ESOPHAGITIS, SURGERY (7306)
  SURGERY, OBSTRUCTION (7299)
SEIN
  HYDROLYSATE, STARVATION, L-SERINE DEHYDRATASE, LIVER (7120)*
CUM
  MESENCHYMOMA (7465)
OLAGOGUE
  XYLITE, CHOLELITHIASIS, THERAPY (7672)
OLANGIOGRAPHY
  CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, GALLBLADDER (7215)*
OLECYSTECTOMY
  CHOLELITHIASIS, DUODENUM, ULCER (7669)
OLECYSTITIS
  ACUTE, CHOLECYSTOSTOMY, GALLBLADDER, NECROSIS (7673)
  ACUTE EMPHYSEMATOUS, PENICILLIN, SURGERY (7663)
  ACUTE, SGOT, COMMON DUCT STONES (7651)*
  ACUTE, SURGERY (7666)
  BILE, BENZOHEXONIUM (7671)
  CHRONIC, DUBIN-JOHNSON SYNDROME, HEPATITIS, CHOLELITHIASIS (7739)
  MORPHOLOGY, ANATOMOPATHOLOGY (7661)
LECYSTOCHOLANGIOGRAPHY
  CONTRAST MEDIA, CHOLECYSTITIS, CHOLELITHIASIS (7290)
OLECYSTODUODENOSTOMY
  CHOLECYSTECTOMY, CHOLECYSTODUODENOSTOMY, BILE DUCT (7670)
  LIVER, PANCREAS, DUODENUM, BILE DUCT (7676)
CHOLECYSTOKININ
  PANCREOZYMIN, POLYPEPTIDE, ENTEROGASTRONE (7095)*
CHOLELITHIASIS
  DIAGNOSIS, SURGERY (7225)
  INTESTINAL OBSTRUCTION, SYNDROME (7428)
  XYLITE, THERAPY (7672)
CHOLERA
  CARRIER, EPIDEMIOLOGY (7697)
  DIARRHEA, ILEAL RESECTION, CHOLESTYRAMINE (7743)
  VIBRIO, ANTIGENS (7723)
CHOLESTASIS
  JAUNDICE, EXTRAHEPATIC BILIARY OBSTRUCTION (7652)*
  SERUM BILIRUBIN, INTRACELLULAR GRANULES, EXTRACELLULAR THROMBI (7532)*
CHOLESTEROL
  SYNTHESIS, LIVER, THIOLS (7141)*
CIRCULATION
  ACUTE MESENTERIC INFARCT, RESECTION (7684)*
  ALPHA-FETOPROTEIN, HEPATIC PRIMARY CARCINOMA, HUMAN (7530)*
  AORTA, RIGHT CORONARY ARTERY, BILIARY TRACT DISTENTION (7665)
  BLOOD COMPONENTS, ASCITES HEPATOMA CELLS (7559)
  BLOOD PROTEINS, BONE MARROW, CIRRHOSIS (7641)
  ERYTHROCYTE LOCALIZATION, AUTORADIOGRAPHY, LIVER (7049)
  ESOPHAGEAL VARICES, HYPERSPLENISM, SPLENECTOMY (7303)
  ESOPHAGOPLASTY, SMALL INTESTINE TRANSPLANT (7317)
  GASTRIC BLOOD FLOW, GASTRIC DISTENTION (7203)
  GASTRIN, PEPTIC ULCER, STOMACH, DUODENUM (7384)*
  HEMORRHAGE, PORTAL HYPERTENSION, LESION, GASTRODUODENAL (7735)
  HYPERKINETIC PORTAL HYPERTENSION (7635)
  INTERNAL HEMORRHOIDS, RINGING (7486)
  INTRAMURAL HEMATOMA, TRAUMA, DUODENUM (7343)
  LEUKEMIA, TYPHLITIS, COLON, CHILDHOOD (7485)
  PORTAL, BILIARY OBSTRUCTION, DOG (7675)
  PORTAL BLOOD FLOW, OXYGEN UTILIZATION, HEMORRHAGE (7708)
  PORTAL DECOMPRESSION, IVALON, LIVER-KIDNEY CONNECTION (7742)
  PORTAL HYPERTENSION, ABDOMINAL VENA CAVA PRESSURE (7638)
  PORTAL HYPERTENSION SYNDROME, SCHISTOSOMIASIS (7764)
  SERUM, BILE ACID, INFANCY (7567)
  SUBMUCOSAL HEMATOMA, DUODENUM (7419)
  VASCULAR INSUFFICIENCY, SMALL INTESTINE (7741)

CIRRHOSIS
  AUTOANTIBODIES, HEPATITIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
  BLOOD PROTEINS, BONE MARROW (7641)
  CARCINOMA, PRIMARY HEPATIC, LAPAROSCOPY, AUTOPSY (7538)*
  CHRONIC HEPATITIS, DUODENAL MUCOSA (7628)
  CHRONIC HEPATITIS, LIVER SCAN (7629)
  CHRONIC HEPATITIS, LYMPHOCYTES, BLASTOID CELL TRANSFORMATION (7624)*
  CHRONIC HEPATOPORTAL ENCEPHALOPATHY, LACTULOSE (7631)*
  DECOMPENSATION, LIFE EXPECTANCY (7633)*
  ESOPHAGEAL VARICES, HEMORRHAGE, SURGERY (7727)
  HEPATIC-ASSOCIATED ANTIGEN, RAPID SCREEN, PROPHYLAXIS TREATMENT (7600)*
  HEPATITIS, SERUM TOCOPHEROL, BETA-LIPOPROTEIN CONCENTRATION (7526)*
  LIVER, ALCOHOLISM, PROTEIN MALNUTRITION (7637)
  LIVER, CHRONIC HEPATITIS, SULFOBROMOPHTHALEIN TEST (7260)
  LIVER, HEART DISEASE (7649)
  LIVER, SMOOTH SURFACE (7642)
  PRIMARY HEPATIC CARCINOMA, HISTOPATHOLOGY (7524)*
  PROTEIN DEFICIENCY, ALBUMIN THERAPY (7650)
  RETICULAR INVOLVEMENT (7640)
  ZINC, DNA (7632)*
COENZYME
  NAD+, METABOLISM, CARBOHYDRATE, LIPID (7144)*
  NAD, NADP, MITOCHONDRIA, LIVER ALTERATION (7595)
COLITIS
  BALANTIDIUM COLI (7763)
  GRANULOMATOUS, ULCERATIVE (7503)
  ISCHEMIC, RADIOLOGY (7468)
  PSEUDOMEMBRANOUS, ANTIBIOTIC (7483)
  ULCERATIVE, GRANULOMATOUS, URINARY CRYSTALLOID EXCRETION (7499)*
  ULCERATIVE, HYPNOTHERAPY (7502)
  ULCERATIVE, MORBUS CROHN, APPENDIX (7434)
COLLAGEN
  HYDROLYSIS, GASTRITIS (7345)
COLON
  ADENOCARCINOMA, RECTUM (7480)
  BALANTIDIUM COLITIS (7763)
  BYPASS, RENAL FUNCTION, FLORA (7636)
  CANCER, APPENDECTOMY (7490)
  CANCER, SURGERY, AMPICILLIN (7466)
  CARCINOEMBRYONIC ANTIGEN, ULTRASTRUCTURAL LOCALIZATION (7456)*
  CARCINOMA, 1-B-D-ARABINOFURANOSYLCYTOSINE (7455)*
  CARCINOMA, RECTUM, ANUS (7475)
  CARCINOMA, RETROPERITONEAL, RADIOTHERAPY (7461)
  DIVERTICULITIS, RADIOLOGY (7484)
  FAMILIAL POLYPOSIS, MALIGNANCY, ENZYME DISTRIBUTION (7454)*
  FIBREOPTIC COLONOSCOPY (7276)
  GLUCOCORTICOIDS, STOMACH, SMALL INTESTINE (7705)
  GRANULOMATOUS COLITIS, CHRONIC ULCERATIVE COLITIS (7503)
  HIRSCHSPRUNG'S DISEASE, AGANGLIONIC RECTUM, CHRONIC CONSTIPATION (7482)
  INTRAPERITONEAL PERFORATION, RADIOLOGY (7491)
  ISCHEMIC COLITIS, RADIOLOGY (7468)
  LEFT, ESOPHAGEAL REPLACEMENT (7311)
  MEGA-, HIRSCHPRUNG'S DISEASE, RADIOLOGY (7488)
  PNEUMATOSIS CYSTOIDES INTESTINALIS, SIGMOIDOSCOPY (7703)
  RECTUM, SURGERY, CANCER (7458)
  RESECTION, FECAL ELECTROLYTE LOSS (7492)
  SIGMOID, FLEXIBLE FIBERSIGMOIDOSCOPY (7294)
  STENOSIS, NEONATE, ATRESIA (7471)
  TYPHLITIS, LEUKEMIA, CHILDHOOD (7485)
  ULCERATIVE COLITIS, HYPNOTHERAPY (7502)
COMA
  HEPATIC, ACUTE VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (7613)
CONSTIPATION
  CHRONIC, HIRSCHSPRUNG'S DISEASE, ENLARGED COLON, AGANGLIONIC RECTUM (7482)
CONTRAST MEDIA
  CHOLECYSTOGRAPHY (7242)
CROHN'S DISEASE
  COLON, DILATION (7430)*
  RECTUM, PROCTOCOLECTOMY (7309)
  ULCERATIVE COLITIS, APPENDIX (7434)
CYTOLOGY
  PANCREAS, NUTRITION, AGE (7103)
CYTOSTATIC
  1-B-D-ARABINOFURANOSYLCYTOSINE, COLONIC CARCINOMA (7455)*
DIABETES MELLITUS
  LIVER INJURY, CIRRHOSIS (7597)
  STOMACH, CANCER (7383)

DIAGNOSIS
  ABDOMINAL DISEASES, ANGIOGRAPHY, ISOTOPE SCANNING (7220)*
  AMEBIC ABSCESS, LIVER (7753)
  AMPULLA OF VATER, TREATMENT (7662)
  ANGIOGRAPHY, GASTROINTESTINAL BLEEDING (7752)
  BARIUM OXIDE ENEMA, LARGE INTESTINE (7276)
  BILE COLLECTION (7182)
  CHOLECYSTOCHOLANGIOGRAPHY (7286)
  CHOLECYSTOCHOLANGIOGRAPHY, CONTRAST MEDIA, CHOLECYSTITIS, CHOLELITHIASIS (7290)
  CHOLEDOCHAL CYST, HEPATOSCINTOGRAPHY (7292)
  CHOLELITHIASIS, SURGERY (7225)
  CHRONIC GASTRITIS, GASTRIC MUCOSA (7264)
  COAGULOGRAM, THROMBOELASTOGRAM, GASTRIC ULCER (7403)
  COMPLEX RECTAL HERNIA, SURGERY (7462)
  CYTOLOGY, GASTRIC DISEASES (7294)
  DIFFERENTIAL, ACUTE PANCREATITIS,

GASTRIC ULCER PERFORATION (7234)
DIFFERENTIAL, LIVER DISEASES, COLLOIDAL GOLD (7218)•
ENDOSCOPY, GASTRIC CANCER (7277)
ENZYMOLOGY, LIVER, BILIARY TRACT (7247)
ESOPHAGEAL LESIONS, GASTRECTOMY (7237)
FIBREOPTIC COLONOSCOPY (7276)
FISHER'S DISCRIMINANT ANALYSIS, OBSTRUCTIVE JAUNDICE, ACUTE VIRAL HEPATITIS (7248)
FLEXIBLE FIBERSIGMOIDOSCOPY (7294)
FLUORESCENT ANTIBODIES, COLIENTERITIS, INFANTS (7287)
GASTRIC SARCOMA, GASTROSCOPY (7238)
GASTRIC SECRETION, QUANTITATIVE DETERMINATION (7256)
GASTRIC SECRETION, SURGERY, ULCER (7254)
GASTROINTESTINAL HEMORRHAGE, GASTRIC ULCER (7291)
GASTROINTESTINAL TRACT, ENDOSCOPY, RADIOLOGY, GASTRIC FUNCTION TESTS (7251)
HEMORRHAGE, GASTROINTESTINAL TRACT (7245)
HIATAL HERNIA, ESOPHAGUS TREATMENT (7316)
HIDDEN ABDOMEN INJURIES (7236)
HYPERKINETIC PORTAL HYPERTENSION (7635)
JEJUNAL BIOPSY (7281)
LABORATORY, GASTROINTESTINAL TRACT (7263)
LIVER, ENZYME EXCRETION (7246)
LIVER BIOPSY, COMPLICATIONS (7271)
LIVER DISEASES, ENZYMOLOGY (7550)
LYMPHOGRAPHY, RECTAL CANCER (7266)
MENETRIER'S DISEASE, GASTRITIS, RADIOLOGY (7348)
PANCREATIC LESIONS, CARCINOMA, PANCREATITIS (7216)•
PANCREATIC SECRETION, DISEASES (7285)
PEPTIC ULCER, CHILDREN (7406)
PER ORAL BIOPSY, SMALL INTESTINE, CHILDREN (7253)
PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY (7244)
PH, FECES, AMEBIC DYSENTERY (7680)•
POSTOPERATIVE DISORDERS, INTESTINE (7278)
PRIMARY HEPATIC CARCINOMA, SERUM ALPHA-FETOPROTEIN (7530)•
PROCTOSIGMOIDOSCOPY (7274)
RADIOISOTOPE SCAN, PANCREAS (7293)
RADIOLOGY, INTRAPERITONEAL COLONIC PERFORATIONS (7491)
RADIOLOGY, ISCHEMIC COLITIS (7468)
RADIOLOGY, PRESACRAL MASSES, CHILDREN (7489)
RADIOLOGY, SMALL INTESTINE, CANCER (7289)
RADIOLOGY, SMALL INTESTINE LESIONS (7273)
RADIOTELEMETRY, GASTRIC ACID SECRETION (7262)
RADIOTELEMETRY, GASTRIC ACIDITY (7261)
SERO-EPIDEMIOLOGY, HEMAGGLUTINATION, AMEBIASIS (7249)
SEROLOGY, CYST ANTIGEN, AMEBIASIS (7279)
SEROLOGY, DYSENTERY, E. COLI (7729)
SEROLOGY, ESCHERICHIOSIS (7282)
SEROTYPE, SALMONELLA (7719)
SIGMOIDOSCOPY, PNEUMATOSIS CYSTOIDES INTESTINALIS, COLON (7703)
SMALL INTESTINE, CARBOHYDRATE TOLERANCE TEST, LACTASE (7283)
SULFOBROMOPHTHALEIN TEST, CIRRHOSIS, CHRONIC HEPATITIS (7260)
TUMORS, BENIGN, MALIGNANT, DUODENUM (7269)
X-RAY, GASTRIC CANCER (7267)
X-RAY, THORACIC STOMACH (7288)
VASCULAR RADIOLOGY, LIVER DISEASE (7272)
VIRAL HEPATITIS, TUBERCULOSIS (7602)

DIAGNOSTIC PROCEDURE
  CHOLECYSTOGRAPHY, CONTRAST MEDIA (7242)
  CHOLECYSTOGRAPHY, RELAXATION DUODENOGRAPHY (7239)
  ESOPHAGEAL MANOMETRY, HIATAL HERNIA (7229)
  GASTROSCOPY, GASTRIC SECRETION, CHRONIC GASTRITIS (7232)
  GASTROSCOPY, GASTROINTESTINAL BLEEDING (7224)
  HYPOTONIC DUODENOGRAPHY, PANCREAS SCINTOGRAPHY, AMPULLA OF VATER (7217)•
  HYPOTONIC DUODENOGRAPHY, PANCREATITIS, DUODENAL LESIONS (7212)•
  INTESTINAL MALABSORPTION (7228)
  PANCREATIC SCANNING, FAST SCANNER (7214)•
  PERITONEOSCOPY, CHOLECYSTITIS (7223)
  RADIOISOTOPE SCANNING, LIVER ECHINOCOCCOSIS (7235)
DIARRHEA
  BALANTIDIUM COLI (7756)
  METRONIDAZOLE, PROTOZOA, PARASITES (7757)
  VIBRIO PARAHAEMOLYTICUS (7737)
DIET
  CHOLINE, METHIONINE, PHOSPHOLIPID (7138)•
  HIGH PROTEIN, LIVER, ENZYMES (7188)
  HIGH PROTEIN, PANCREATIC SECRETION, CHRONIC PANCREATITIS (7519)
  ILEOSTOMY, FLATULENCE (7413)•
  SMALL INTESTINE, MALABSORPTION, GEFARNATE, INFANTS (7443)
DIETARY DEFICIENCY
  IRON, RIBOFLAVIN, IODIDE, LIVER (7110)•
DISEASE
  ACUTE, INTESTINE, INFANTS, DYSENTERY (7695)
  CHRONIC GRANULOMATOUS, ESOPHAGUS (7319)
  CROHN'S, COLON, MEGACOLON (7505)
  CROHN'S, ULCERATIVE COLITIS (7500)•
  HIRSCHSPRUNG'S, AGANGLIONIC RECTUM, ENLARGED COLON, CHRONIC CONSTIPATION (7482)

        - LIVER, PANCREAS, DUODENUM (7239)
    - DIVERTICULITIS
        - DUODENUM, MOTILITY, STOMACH (7258)
    - DIVERTICULUM
        - COLONIC PERFORATION, CANCER, PERITONITIS (7493)
    - DIVERTICULITIS, COLON, RADIOLOGY (7484)
    - DUODENUM, CONGENITAL ANOMALIES (7363)
    - GASTROINTESTINAL TRACT, PERFORATION, SURGERY (7715)
    - MECKEL'S, ABDOMINAL, TRAUMA (7417)
    - MECKEL'S, LEIOMYOSARCOMA (7418)
    - MECKEL'S, PATHOLOGY, SMALL INTESTINE (7427)
- DNA
    - NUCLEAR, SYNTHESIS, LIVER (7145)*
- DOPAMINE
    - DOPA-DECARBOXYLASE, LIVER TISSUE, DIALYSIS (7115)*
- DRUG
    - ABSORPTION, ACETAZOLAMIDE, D-AMPHETAMINE, SALICYLIC ACID (7062)*
    - ABSORPTION, SALICYLIC ACID, BARBITAL, SULFAETHIDOLE (7071)*
    - ABUSE, ACUTE VIRAL HEPATITIS, LIVER (7604)
    - AMINAZINE, ACUTE NONVIRAL HEPATITIS, JAUNDICE (7586)
    - CARBENOXOLONE, GLYCYRRHETINIC ACID, GASTRIC SECRETION (7091)*
    - CHOLESTYRAMINE, ILEAL RESECTION, CHOLERIC DIARRHEA (7743)
    - CHOLESTYRAMINE, ILEAL RESECTION, DIARRHEA (7744)
    - CHOLESTYRAMINE, RECURRENT CHOLESTASIS, PREGNANCY (7553)
    - CYCLOPHOSPHAMIDE ACTIVATION, EHRLICH CARCINOMA, YOSHIDA SARCOMA (7177)
    - DAPSONE, ANEMIA, MALABSORPTION (7678)*
    - DIPHENYLHYDANTOIN, DEXAMETHASONE METABOLISM (7162)
    - 5-FLUORO-2-DEOXYURIDINE, LIVER, INFUSION (7728)
    - HALOTHANE ANESTHESIA, HEPATITIS (7590)
    - KETOSCILIUM, BILIARY TRACT, SPASTICITY (7749)
    - LIVER, MICROSOMES, PARATHION, PESTICIDES (7124)*
    - METRONIDAZOLE, DIARRHEA, PROTOZOA, PARASITES (7757)
    - PARASYMPATHOLYTIC, INHIBITION, GASTRIC SECRETION, GASTRITIS (7331)
    - PENTAGASTRIN, GASTRIC SECRETION, GASTRITIS (7327)*
    - PHENOBARBITAL, ETHANOL, FATTY LIVER (7578)*
    - PYRAZOLE, ETHANOL, FATTY LIVER (7579)*
    - PYRAZOLE, FATTY LIVER, ETHANOL (7577)*
    - PYRAZOLE, FUNCTION, LIVER (7125)*
    - SULPIRIDE, CORTICOSTEROIDS, ULCER (7349)
    - THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE, AMP DEAMINASE (7150)*
    - TWEEN 80, OBSTRUCTION, MECONIUM ILEUS (7414)*
- DRUG EFFECT
    - SKF 525A, CC14, DISTRIBUTION (7061)*
- DUODENUM
    - BIOPSY, DUODENITIS, GASTROINTESTINAL DISEASES (7321)*
    - BRUNNER'S GLANDS, POUCH, PANCREOZYMIN, MOTILITY (7194)*
    - CHRONIC OBSTRUCTION (7359)
    - CONGENITAL ANOMALIES, DIVERTICULA (7363)
    - CRYPT CELLS, DNA SYNTHESIS, CHELATING AGENTS (7198)
    - CYTOLOGY, SECRETIN, CARCINOMA, PANCREAS (7221)*
    - DOG, PH, NEUTRALIZING CAPACITY (7191)*
    - ELECTRICAL STIMULATION, CHRONIC PANCREATITIS (7520)
    - 5-HYDROXYTRYPTAMINE, ADRENAL HORMONES, BORDETELLA PERTUSSIS VACCINE (7200)
    - HUNGER, MOTILITY, FOOD (7078)*
    - INTRAMURAL HEMATOMA, TRAUMA (7343)
    - LESION, GASTRIC, HEMORRHAGE, PORTAL HYPERTENSION (7735)
    - MORPHOLOGY, RADIATION EFFECTS (7039)
    - MUCOSA, CANCER, GASTRIC, DUODENAL (7334)
    - MUCOSA, CHRONIC HEPATITIS, CIRRHOSIS (7628)
    - MUCOSAL CELL, ENZYME, VITAMIN D (7021)*
    - PANCREATIC JUICE, POUCH, CANNULATION (7101)*
    - PANCREATO-DUODENAL INJURY, PANCREATODUODENECTOMY (7509)
    - PEPTIC ULCER, CHRONIC RENAL INSUFFICIENCY (7398)
    - PEPTIC ULCER, GASTRIN STOMACH (7384)*
    - PEPTIC ULCER, VAGOTOMY (7402)
    - RUPTURE, STOMACH TRAUMA (7364)
    - STRESS ULCER, STOMACH (7393)
    - STUMP CLOSURE, OX FASCIA (7358)
    - SUBMUCOSAL HEMATOMA (7419)
    - TUMORS, BENIGN, MALIGNANT, DIAGNOSIS (7269)
    - ULCER, FUNCTIONAL BOWEL DISTRESS, GALLBLADDER (7678)
    - ULCER, GASTRIC, GASTRIC SECRETION, SURGERY (7400)
    - ULCER, GASTRIC RESECTION, HEMORRHAGE (7339)
    - ULCER, PEPTIC, GASTRIC, INCIDENCE (7385)*
    - ULCER, SECRETAGOGUES, RAT (7386)*
    - ULCER, STOMACH, CHRONIC PNEUMONIA (7410)
    - ULCER, STOMACH, SURGERY (7390), (7401
    - ULCER, SURGERY (7388), (7389)
- DYSENTERY
    - ACUTE, THERAPY, ANTIBIOTICS (7711)
    - E. COLI, SEROLOGY (7729)
    - ENTEROKINASE, ALKALINE PHOSPHATASE, BLOOD, URINE (7713)
    - INFANTS, EPIDEMIOLOGY (7693)
- DYSPHAGIA
    - LOWER ESOPHAGEAL RING, RADIOLOGY (7307)
    - POST-VAGOTOMY, ESOPHAGUS, RADIOLOGY (7295)*

- E. COLI
  - LIPOPOLYSACCHARIDE, ENDOTOXEMIA, LIVER MITOCHONDRIA (7683)*
- ECHINOCOCCOSIS
  - LIVER, RADIOISOTOPE SCANNING (7235)
- ELECTROLYTE
  - ABSORPTION, COLON, BILE ACID (7060)*
  - CALCIUM, SODIUM, ULCERATIVE COLITIS, GRANULOMATOUS (7499)*
  - FECAL LOSS, COLON RESECTION (7492)
  - MAGNESIUM, SECRETION, PEPTAVLON, HISTAMINE (7094)*
  - SODIUM BALANCE, RENAL ARTERY COMPRESSION, ANGIOTENSIN (7143)*
  - 10 N, SODIUM, POTASSIUM, CIRRHOSIS, SURGERY (7645)
- ELECTROPHYSIOLOGY
  - MUCOSAL POTENTIAL, RECTUM, COLON ALDOSTERONE (7064)*
- ENCEPHALITIS
  - TICK-BORNE, LIVER FUNCTION (7574)
- ENDOCRINE SYSTEM
  - HYPOPHYSECTOMY, PITUITARY GRAFT, MOTILITY, SMALL INTESTINE (7087)
  - HYPOPHYSECTOMY, SYNTHESIS, NUCLEIC ACID, PROTEIN, SMALL INTESTINE (7196)*
  - PITUITARY CONTROL, GASTRIC EMPTYING (7088)
- ENTERITIS
  - E. COLI, EPIDEMIOLOGY, NEONATE (7730)
  - E. COLI, FLUORESCENT ANTIBODIES, DIAGNOSIS, INFANTS (7287)
  - E. COLI, NEONATE (7731)
  - EOSINOPHILIC, RADIOLOGY (7722)
- ENTEROGASTRONE
  - POLYPEPTIDE, ACID SECRETION, CHOLECYSTOKININ-PANCREOZYMIN (7095)*
- ENTEROPATHY
  - MELANOMA, MALABSORPTION, SMALL INTESTINE (7736)
- ENZYME
  - ACTIVITIES, GASTROINTESTINAL DISEASES (7748)
  - ADENOSINE MONOPHOSPHATE DEAMINASE, THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (7150)*
  - ALCOHOL DEHYDROGENASE, LIVER, CHELATION (7140)*
  - ALCOHOL DEHYDROGENASE, LIVER, PYRAZOLE (7126)*
  - ALKALINE PHOSPHATASE, LEUKOCYTE, VIRAL HEPATITIS, JAUNDICE (7259)
  - ALKALINE PHOSPHATASE, NADP DEPHOSPHORYLATION, INTESTINE (7204)
  - ALKALINE PHOSPHATASE, PHOSPHORYLASE, VIRAL HEPATITIS (7615)
  - ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, THYROID, MITOCHONDRIA, RIBOFLAVIN (7178)
  - AMYLASE, LIPASE, TRYPSIN, PANCREATITIS (7257)
  - AMYLASE, PYLORUS, DOG (7096)
  - ARGINASE, GLUCOSE-6-PHOSPHATASE, LIVER (7159)*
  - COLON, BETA-GLUCURONIDASE, PHOSPHATASE ESTERASE (7454)*
  - D-AMINO AXIDASE, CATALASE, URATE OXIDASE (7033)*
  - DEOXYTHYMIDINE KINASE, RNA TURNOVER, NEONATAL LIVER, HEPATOMA (7117)*
  - D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE, L-GLUTAMINE, CHOLESTEROL DIET (7181)
  - DNA POLYMERASE, RNA POLYMERASE, CANCER (7137)*
  - DOPA-DECARBOXYLASE, LIVER HOMOGENATES, PH OPTIMUM (7115)*
  - ENTEROKINASE, ALKALINE PHOSPHATASE, DYSENTERY (7713)
  - ESTERASE, LIVER, ACYL TRANSFER, KINETICS (7175)
  - ESTERASES, LOCALISATION, AUTORADIOGRAPHY (7037)*
  - EXCRETION, LIVER, DIAGNOSIS (7246)
  - FATTY LIVER, ALCOHOL CONSUMPTION (7576)*
  - 5-HYDROXYTRYPTOPHAN DECARBOXYLASE, SMALL INTESTINE (7035)*
  - GDH, GOT, GPT, ACUTE VIRAL HEPATITIS (7609)
  - GLUCOSE-6-PHOSPHATE DEHYDROGENASE, LIVER, RHODAMINE SARCOMA (7042)
  - GLYCOGEN PHOSPHORYLASE, LIVER, GLUCOSE, GLUCOCORTICOID (7142)*
  - GLYCOGEN SYNTHETASE, LIVER, GLUCOCORTICOIDS (7146)*
  - GLYCOGEN SYNTHETASE ACTIVITY, ASCITES, ALKYLATING AGENTS (7173)
  - GLYCOSIDASE, INTESTINE, KIDNEY (7031)*
  - HEPATIC FRUCTOSE-1, 6-DIPHOSPHATASE, DEFICIENCY, METABOLIC ACIDOSIS (7527)*
  - HEPATIC MICROSOMAL, MITOCHONDRIAL, EHANOL (7127)*
  - HEXOKINASES, DEHYDROGENASES, PENTOSE-PHOSPHATE CYCLE, HEPATOMA (7547)
  - HISTONE KINASES, ADENOSINE 3'-5'CYCLIC PHOSPHATE (7022)*
  - HISTONE SPECIFIC TRANSACETYLASES, LIVER, NUCLEI (7051)
  - INTESTINAL GAMMA GLUTAMYL CARBOXYPEPTIDASE, DIPHENYL HYDANTOIN, BSP (7193)*
  - LACTOSE ACTIVITY, SMALL INTESTINE MUCOSA, CARBOHYDRATE TOLERANCE TEST (7283)
  - LACTOSE DEFICIENCY, SMALL INTESTINE (7445)
  - LACTATE DEHYDROGENASE, EHRLICH-LETTRE ASCITES TUMOR (7041)
  - LIPASE, GASTRIC MUCOSA, TRIGLYCERIDE (7027)*
  - LIVER, BETA-GLUCURONIDASE, SUBSTRATE (7032)*
  - LIVER, GILBERT'S SYNDROME ALKAPTONURIA (7562)
  - LIVER, GLUCOKINASE, GLUCOSE-6-PHOSPHATASE, HYPERTHYROID (7135)*
  - LIVER, GLUCURONYL TRANSFERASE, DISEASE, CONGENITAL, ACQUIRED (7528)*
  - LIVER, INDUCTION, TYROSINE AMINOTRANSFERASE, PHENTOLAMINE (7157)*
  - LIVER, METABOLISM, AMINOTRANSFERASE ACTIVITY (7158)*

- LIVER, METABOLISM, IRON, RIBOFLAVIN, IODIDE (7110)•
- LIVER MICROSOMES, PARATHION, PESTICIDE (7124)•
- L-SERINE DEHYDRATASE, LIVER, CASEIN HYDROLYSATE, STARVATION (7120)•
- LYSOSOMAL LIVER, STILBAMIDINES (7104)•
- LYSOSOMAL PROTEASES, PANCREATITIS (7512)
- MALTASE, INTESTINE, HETEROGENEITY (7023)•
- MALTASE FRACTIONS, INTESTINE, PURIFICATION (7024)•
- MICROSOMAL INDUCTION, GALLBLADDER EXCRETION, BSP (7134)•
- MITOCHONDRIAL FERROCHELATASE, LIVER, PHENOBARBITAL (7161)•
- MUCOSAL CELL, CHICK, VITAMIN D (7021)•
- NAD SYNTHETASE, SPECIFICITY, RAT (7028)•
- NADPH SYSTEM, LIVER, REDOX POTENTIAL (7131)•
- ORNITHINE DECARBOXYLASE, LIVER, GROWTH HORMONE (7108)•
- PANCREATIC ISOAMYLASES, AMINO ACID CONTENT (7030)•
- PHOSPHATASE, LIVER, BILE CANALICULAR (7029)•
- PHOSPHOLIPASE A, INTESTINAL PROSTAGLANDIN, FATTY ACIDS (7192)•
- PHOSPHORYLASE, PHOSPHORYLASE KINASE, GLYCOGENOSIS, LIVER, MUSCLE (7572)
- PYRROLIDONYL PEPTIDASE (7039)
- RELEASE, LIVER DISEASES, DIAGNOSIS (7550)
- RIBONUCLEASE, LIVER RIBOSOME (7179)
- SERINE DEHYDRATASE, HOMOSERINE DEHYDRATASE, CYSTINE DESULPHYDRASE, LIVER (7189)
- SERUM PROTEOLYTIC ACTIVITY, HEPATOBILIARY DISEASE, ALPHA2-MACROGLOBULIN (7551)
- SGOT, ACUTE CHOLECYSTITIS, COMMON DUCT STONES, JAUNDICE (7651)•
- SGOT, SGPT, RESECTION (7180)
- SGPT, ACUTE VIRAL HEPATITIS (7614)
- STEAROYL-COA DESATURASE, LIVER MICROSOME (7040)
- TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, MORRIS HEPATOMA, HISTONE (7537)•
- TYROSINE TRANSAMINASE, LIVER, METABOLISM (7121)•

- EPIDEMIOLOGY
  - ASCARIASIS, SOIL INFECTION, CHILDREN (7768)
  - CHOLERA CARRIER (7697)
  - COLIENTERITIS, NEONATE (7730)
  - DYSENTERY, INFANTS (7693)
  - VIBRIO PARAHAEMOLYTICUS, ANTIGENIC SCHEMA (7699)
  - VIRAL HEPATITIS, PARENTERAL INFECTION (7601)
- ESOPHAGUS
  - AUTOPLASTIC, PEPTIC ULCER (7318)
  - BENIGN NEOPLASMS (7314)
  - CANCER, DIAGNOSIS, RADIOISOTOPE (7233)
  - CANCER, SURGERY, ANESTHESIA (7315)
  - CERVICAL, RECONSTRUCTION (7305)
  - CERVICAL, RECONSTRUCTION, GASTRIC ANASTOMOSIS (7304)
  - ESOPHAGO-CARDIAC FISTULA, EMBOLIC MENINGO-ENCEPHALITIS (7302)
  - ESOPHAGOPLASTY, SMALL INTESTINE TRANSPLANT, CIRCULATION (7317)
  - FISTULA, PNEUMONECTOMY, REPAIR (7312)
  - GASTRIC JUNCTION, CARCINOMA, ESOPHAGOGASTROSTOMY (7360)
  - GRANULOMATOUS, CHRONIC (7319)
  - HIATAL HERNIA, DIAGNOSIS, TREATMENT (7316)
  - JEJUNUM INTERPOSITION, PEPTIC ESOPHAGITIS, HIATAL HERNIA (7296)•
  - LESION, DIAGNOSIS, GASTRECTOMY (7237)
  - LOWER RING, DYSPHAGIA, RADIOLOGY (7307)
  - MOTILITY (7280)
  - MUCOSA, BLOOD FLOW (7300)
  - OBLITERATION, HYPOPHARYNX, CORROSIVES, RECONSTRUCTION (7308)
  - PERFORATION, GASTROTOMY (7310)
  - POST VAGOTOMY DYSPHAGIA, RADIOLOGY, MANOMETRY, ESOPHAGOSCOPY (7295)•
  - REFLUX ESOPHAGITIS, SURGERY CARDIA INCOMPETENCE (7306)
  - REPLACEMENT, LEFT COLON (7311)
  - SPONTANEOUS RUPTURE (7313)
  - STOMACH, VARICES, CIRRHOSIS, HEMORRHAGE (7639)
  - SURGERY, HOMOGRAFT (7298)
  - ULCERATION, COLUMNAR EPITHELIUM, BARRETT'S SYNDROME (7301)
  - VARICES, HEMORRHAGE, CIRRHOSIS, SURGERY (7727)
  - VARICES, SPLENECTOMY, SPLENORENAL SHUNT, HYPERSPLENISM (7303)
- EXCRETION
  - FECES, UROBILINOGEN, BILIRUBIN (7063)•
  - GALLBLADDER, BSP, PHENOL-3, 6-DIBROMPHTHALEIN DISULFONATE (7134)•
  - STEROID, INTESTINE, DISTRIBUTION (7057)•
- FAMILIAL OCCURRENCE
  - GLUTENENTEROPATHY, DERMATITIS HERPETIFORMIS (7437)•
- FATTY ACID
  - PLASMA, GASTRECTOMY, GROWTH HORMONE (7322)•
- FECES
  - AEROMONAS HYDROPHILA, DNASE AGAR (7250)
  - ELECTROLYTE LOSS, COLON RESECTION (7492)
  - FLORA, RENAL FUNCTION, COLON BYPASS (7636)
  - PH, AMEBIC DYSENTERY (7680)•
  - UROBILINOGEN EXCRETION, BILIRUBIN PRODUCTION (7063)•

- FETUS
  - CANINE, GASTRIN, FUNDUS, PARIETAL CELL (7093)•
- FISTULA
  - BILIARY INTESTINAL (7660)

  - CHOLECYSTOCOLONIC, MALABSORPTION, CHOLECYSTECTOMY (7451)
  - ESOPHAGO-CARDIAC, EMBOLIC MENINGOENCEPHALITIS (7302)
  - ESOPHAGUS, PNEUMONECTOMY, REPAIR (7312)
  - PELVIC, NONSUTURE REPAIR, COLON, RECTUM (7477)
- GALLBLADDER
  - AMPULLA OF VATER, DIAGNOSIS, TREATMENT (7662)
  - BILE, GALLSTONE (7655)•
  - CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, BILE DUCT (7215)•
  - CHOLECYSTOCHOLANGIOGRAPHY (7286)
  - CHOLECYSTOCOLONIC FISTULA, MALABSORPTION, CHOLECYSTECTOMY (7451)
  - CHOLESTEROL STONES, ABNORMAL BILE (7656)•
  - EXCRETION, BSP, PHENOL-3, 6-DIBROMPHTHALEIN DISULFONATE (7134)•
  - INNERVATION, SALMONELLOSIS, DOG (7712)
  - MOTILITY, VEGETABLE JUICE (7086)
  - MUCOSA, BILE, GLYCOPROTEINS, IMMUNOLOGY (7653)•
  - PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY (7244)
  - PRIMARY CARCINOMA (7664)
  - PRIMARY SCLEROSING CHOLANGITIS, STEROID THERAPY (7568)
  - STUMP, PATHOLOGY, DUODENUM, ULCER (7669)
- GAS
  - BOWEL EXPLOSION, SURGICAL COMPLICATION (7704)
- GASTRECTOMY
  - CANCER, STOMACH, DUODENUM, RELAPSE (M356)
  - DUMPING SYNDROME, GASTRIC BIOPSY, GASTROSCOPY (7369)
  - GASTROENTEROSTOMY, MALIGNANT ULCER, REPEATED SURGERY (7372)
  - GROWTH HORMONE, FREE FATTY ACID, PLASMA (7322)•
  - KIDNEY FUNCTION, CREATININE, UREA (7694)
  - MOTILITY, PROPHYLAXIS (7333)
  - PARTIAL, GASTRIC FUNCTION, MORPHOLOGY ULCER (7391)
  - SUBTOTAL, GASTROINTESTINAL ANASTOMOSIS REPAIR (7371)
- GASTRIC FUNCTION
  - JEJUNAL HOMOGRAFT, RADIOLOGY, GASTRECTOMY (7352)
  - LOCAL HYPOTHERMIA, DOG (7098)
  - MORPHOLOGY, PARTIAL GASTRECTOMY, ULCER (7391)
- GASTRIC JUICE
  - ACIDITY, ION EXCHANGE RESINS (7240)
  - CHRONIC GASTRITIS, ULCER, DUODENAL, GASTRIC (7375)
  - GASTRIC ULCER, DUODENAL ULCER, HEMATOPOIESIS (7409)
  - GASTROINTESTINAL TRACT, CHRONIC DISEASES, HEMOPOIESIS (7686)
  - NEUTRALIZATION, DUODENUM, PH (7191)•
  - PROTEIN FRACTIONS, CHRONIC GASTRITIS, DUODENAL ULCER (7370)
- GASTRIC MUCOSA
  - MEMBRANE POTENTIAL, METABOLIC INHIBITOR (7073)
  - MORPHOLOGY, CHRONIC GASTRITIS (7374)
  - NUCLEIC ACID METABOLISM, DOG (7097)
  - SULPIRIDE, THIOPROPERAZINE POLYMYXIN B-INDUCED LESIONS (7323)•
  - VIRAL HEPATITIS, HEALTH RESORT TREATMENT (7616)
- GASTRIC SECRETION
  - DUODENAL ULCER, DIAGNOSIS (7226)
  - HYPERSECRETION, ACIDITY, GASTRIN, CALCIUM (7679)•
  - INHIBITION, PARASYMPATHOLYTIC DRUG, GASTRITIS, MAN (7331)
  - PENTAGASTRIN, PEPSIN, SECRETIN, CHOLECYSTOKININ (7092)•
  - VOLUME, ACID OUTPUT, SECRETIN (7195)•
- GASTRIN
  - ANTIBODY, PRODUCTION, BEHAVIOR, USE (7050)
  - ANTRUM, RADIOIMMUNOASSAY, FETUS (7093)•
  - CALCIUM, BETAZOLE, ACID OUTPUT (7679)•
- GASTRITIS
  - CHRONIC, ASPIRATION BIOPSY, STOMACH (7243)
  - CHRONIC, GASTRIC JUICE, PROTEIN FRACTIONS, DUODENAL ULCER (7370)
  - CHRONIC, GASTRIC JUICE, ULCER, DUODENAL, GASTRIC (7375)
  - CHRONIC, GASTROSCOPY, GASTRIC ACIDITY (7232)
  - CHRONIC, PANCREAS, AMYLASE, LIPASE (7351)
  - COLLAGENOLYSIS, MAN (7345)
- GASTROINTESTINAL BLEEDING
  - PREVENTION, DISTRESS, SULPIRIDE (7682)•
- GASTROINTESTINAL DISEASE
  - DUODENITIS, DUODENAL BIOPSY, MORPHOLOGY (7321)•
  - GASTRIC ACID SECRETION, HISTALOG, ANALYSIS (7324)•
  - PATHOGENESIS, AUTO-IMMUNIZATION REACTIONS (7725)
  - THERAPY, SULPIRIDE (7325)•
- GASTROINTESTINAL TRACT
  - BLEEDING, ANGIOGRAPHY (7752)
  - CHRONIC DISEASES, GASTRIC JUICE, HEMOPOIESIS (7686)
  - DIAGNOSIS, ENDOSCOPY, RADIOLOGY, GASTRIC FUNCTION TESTS (7251)
  - DISEASES, SERUM ENZYMES (7748)
  - DIVERTICULA, PERFORATION, SURGERY (7715)
  - EOSINOPHILIC GASTROENTERITIS, MALABSORPTION (7707)
  - FUNCTION, PLEURITIS, PNEUMONIA (7600)
  - HEMORRHAGE, DIAGNOSIS (7245)
  - HEMORRHAGE, PERITONEAL COOLING (7718)
  - INFANTILE COLIC (7740)
  - LABORATORY DIAGNOSIS (7263)
  - PRIMARY LYMPHANGIECTATIC GASTROENTEROPATHY, EOSINOPHILIA (7734)
- GASTROSCOPY
  - GASTRIC BIOPSY, GASTRECTOMY, DUMPING SYNDROME (7369)

  - GASTROINTESTINAL BLEEDING (7224)
- GENETICS
  - PEPTIC ULCER, PATHOGENESIS (7399)
- GENITOURINARY TRACT
  - ACUTE RENAL FAILURE, BILIARY TRACT SURGERY, JAUNDICE (7657)
- GLUCOSE
  - HEAT DAMAGE, PROTEIN, LYSINE, ABSORPTION (7066)*
- GRANULOMATOUS COLITIS
  - CROHN'S DISEASE, LARGE INTESTINE (7504)
- GROWTH HORMONE
  - GASTRECTOMY, BLOOD SUGAR, FREE FATTY ACID (7322)*
- HEMIGASTRECTOMY
  - VAGOTOMY, DUMPING SYNDROME, ULCER (7353)
- HEMODYNAMICS
  - ACUTE PANCREATITIS, TRYPSIN, SHOCK (7515)
- HEMOGLOBIN
  - PEPSIN, INHIBITION (7090)*
- HEMORRHAGE
  - ESOPHAGUS, STOMACH, PORTAL HYPERTENSION (7648)
  - ESOPHAGEAL VARICES, CIRRHOSIS, SURGERY (7727)
  - ESOPHAGEAL VARICES, STOMACH VARICES, CIRRHOSIS (7639)
  - GASTRIC, ASPIRIN (7336)
  - GASTROINTESTINAL, ANGIOGRAPHY (7752)
  - GASTROINTESTINAL, DIFFERENTIAL DIAGNOSIS, GASTRIC ULCER (7291)
  - GASTROINTESTINAL, PANCREATIC PSEUDOCYST, HEMOBILIA (7509)
  - GASTROINTESTINAL TRACT, DIAGNOSIS (7245)
  - OMENTAL HEMANGIOMA, KLIPPEL-TRENAUNAY SYNDROME (7700)
  - OXYGEN UTILIZATION, PORTAL BLOOD FLOW (7708)
  - ULCER, DUODENAL, GASTRIC, SURGERY (7702)
  - UPPER GASTROINTESTINAL, PERITONEAL COOLING (7718)
- HEPATIC COMA
  - METHOXYFLURANE ANESTHESIA (7582)*
- HEPATITIS
  - ACUTE, LIVER GLYCOGEN, PYRIDOXINE (7585)
  - AUSTRALIA ANTIGEN, LEUKEMIA (7622)
  - AUSTRALIA ANTIGEN, RAPID SCREEN, PROPHYLAXIS (7600)*
  - AUTOANTIBODIES, CIRRHOSIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
  - CHRONIC, ACUTE, LIVER CIRRHOSIS, BILIRUBIN FRACTIONS (7627)
  - CHRONIC, BLASTOID CELL TRANSFORMATION, LYMPHOCYTES (7624)*
  - CHRONIC, CIRRHOSIS, ADRENAL CORTEX FUNCTION (7625)
  - CHRONIC, CIRRHOSIS, LIVER SCAN (7629)
  - CHRONIC, CIRRHOSIS, LIVER, SULFOBROMOPHTHALEIN TEST (7260)
  - CHRONIC, IMMUNOLOGY, THERAPY (7626)
  - CHRONIC, VIRAL, ACUTE, AUSTRALIA ANTIGEN, CIRRHOSIS (7630)
  - CIRRHOSIS, FULMINANT FAILURE, TOCOPHEROL, BETA-LIPOPROTEIN (7526)*
  - DUBIN-JOHNSON SYNDROME, CHRONIC CHOLECYSTITIS, CHOLELITHIASIS (7739)
  - HALOTHANE ANESTHESIA (7590)
  - NON-VIRAL, ACUTE, JAUNDICE, AMINAZINE (7586)
  - NON-VIRAL, ACUTE, SURGERY, INJURY (7596)
  - NON-VIRAL, ACUTE, TRAUMA, SEVERANCE (7598)
  - VIRAL, ACUTE, ANTIGEN TEST (7230)
  - VIRAL, ACUTE, APLASTIC ANEMIA (7605)
  - VIRAL, ACUTE, AUSTRALIA ANTIGEN (7606), (7611), (7612), (7620), (7623)
  - VIRAL, ACUTE, AUSTRALIA ANTIGEN, ANTIBODIES (7607)
  - VIRAL, ACUTE, AUTOANTIBODIES (7621)
  - VIRAL, ACUTE, COXSACKIEVIRUS B5, HERPES SIMPLEX (7610)
  - VIRAL, ACUTE, DRUG ABUSE (7604)
  - VIRAL, ACUTE, ENZYMOLOGY, GDH, GOT, GPT (7609)
  - VIRAL, ACUTE, HEPATIC COMA, NEUROLOGICAL SEQUELAE (7613)
  - VIRAL, ACUTE, JAUNDICE, FISHER'S DISCRIMINANT ANALYSIS (7248)
  - VIRAL, ACUTE, LIVER ENZYMES (7614)
  - VIRAL, ACUTE, REMOTE SEQUELAE (7603)
  - VIRAL, DIAGNOSIS, CROSSED ELECTROPHORESIS (7211)*
  - VIRAL, DIAGNOSIS, TUBERCULOSIS (7602)
  - VIRAL, ENZYME, SERUM, URINE, FECES (7615)
  - VIRAL, EPIDEMIOLOGY, PARENTERAL INFECTION (7601)
  - VIRAL, GASTRIC MUCOSA, HEALTH RESORT TREATMENT (7616)
  - VIRAL, PROPHYLAXIS, CLINICAL FEATURES, THERAPY (7608)
  - VIRAL, THERAPY, CORTICOSTEROIDS (7619)
  - VIRAL, THERAPY, GLUCOCORTICOID METABOLISM (7617)
  - VIRAL, THERAPY, PREGNANCY (7618)
- HEPATOBILIARY TRACT
  - DISEASE, ROUX-EN-Y JEJUNAL LOOP, CHRONIC PANCREATITIS (7654)*
- HEPATOCARCINOGENESIS
  - MICROSOMAL HYDROXYLATION, 2-ACETAMIDOFLUORENE, 3-METHYLFLUORENE (7525)*
- HEPATOMA
  - DIAGNOSIS, LIVER ARTERIOGRAPHY (7213)*
  - HEXOKINASES, DEHYDROGENASES, PENTOSE-PHOSPHATE CYCLE (7547)
  - MICROSOME, HYDROXYLATION, 3-METHYCHOLANTHRENE, 2-ACETAMIDOFLUORENE (7325)*
  - PEROXISOMAL ENZYMES (7033)*
- HERNIA
  - HIATAL, DIAGNOSIS, ESOPHAGEAL MANOMETRY (7229)
  - HIATAL, ESOPHAGUS, DIAGNOSIS, TREATMENT (7316)
  - HIATUS, THORACIC STOMACH, X-RAY DIAGNOSIS (7288)
  - RECTAL, DIAGNOSIS, SURGERY (7462)
- HISTAMINE

  HISTALOG, ACID SECRETION, GASTROINTESTINAL DISEASES (7324)*
  ULCER, DUODENUM, CARBACHOL, PENTAGASTRIN (7386)*
ISTOCHEMISTRY
  ADRENAL GLANDS, CIRRHOSIS (7647)
  CHOLESTASIS, SERUM BILIRUBIN, INTRACELLULAR GRANULES (7532)*
ISTOLOGY
  CLASSIFICATION, GASTRIC CARCINOMA (7344)
OMOGRAFT
  JEJUNAL, GASTRECTOMY, GASTRIC FUNCTION RADIOLOGY (7352)
ORMONE
  ANGIOTENSIN, HEPATIC INACTIVATION, SODIUM, RENAL ARTERY COMPRESSION (7143)*
  GLUCOCORTICOID, LIVER NUCLEI, RNA CONTENT (7155)*
  GROWTH, LIVER, ORNITHINE DECARBOXYLASE (7108)*
  GROWTH, PLASMA LEVEL, GASTRECTOMY (7322)*
  PITUITRIN, SMALL INTESTINE, MOTILITY (7085)
  STEROID, HYDROXYLATION, LIVER, MORPHINE (7128)*
  THYROID, RIBOFLAVIN, MITOCHONDRIA, ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE (7178)
YPOTHERMIA
  LOCAL, GASTRIC FUNCTION, DOG (7098)
EOCECUM
  INFLAMMATORY TUMORS (7733)
EOSTOMY
  MIXED DIET, FLATULENCE, ODOR, WATERY FLOW (7413)*
EUM
  CARCINOIDS (7421)
  HEMANGIOPERICYTOMA (7423)
  MECKEL'S DIVERTICULUM, LEIOMYOSARCOMA (7418)
  PRIMARY MALIGNANT TUMORS, JEJUNUM (7701)
  RESECTION, CHOLERIC DIARRHEA, CHOLESTYRAMINE (7743)
  RESECTION, CHOLESTYRAMINE, DIARRHEA (7744)
  TERMINAL, INTESTINAL KNOT SYNDROME (7696)
  TERMINAL, LYMPHOID HYPERPLASIA (7422)
EUS
  CHOLELITHIASIS, SYNDROME (7428)
MUNOLOGY
  AUTO-IMMUNIZATION REACTIONS, GASTROINTESTINAL DISEASES, PATHOGENESIS (7725)
  CHOLERA VIBRIO, ANTIGENS (7723)
  CHRONIC HEPATITIS, THERAPY (7626)
  GALLBLADDER MUCOSA, BILE, GLYCOPROTEIN (7653)*
  SALMONELLOSIS, FOOD POISONING (7687)
  VACCINATION, TYPHOID FEVER (7205)
ECTION
  BACTERIAL, LIVER, BILE DUCT, ANTIBIOTIC (7583)
LAMMATION
  LARGE BOWEL, ANKYLOSING SPONDYLITIS, ULCERATIVE COLITIS (7498)*
  PANCREAS, CHOLECYSTECTOMY, VIRAL HEPATITIS, GASTRIC ULCER (7522)
INTESTINAL ABSORPTION
  PROTEIN, ENTEROCOLITIS (7043)
INTESTINE
  ABSORPTION, SALICYLIC ACID, BARBITAL, SULFAETHIDOLE (7071)*
  ACUTE DISEASE, INFANTS, DYSENTERY (7695)
  ACUTE DISEASES, E. COLI, CHILDREN (7691)
  ACUTE OBSTRUCTION, SURGERY (7716)
  ALKALINE PHOSPHATASE, NADP DEPHOSPHORYLATION (7204)
  AMBEIASIS, EPIDEMIOLOGY, DIAGNOSIS (7755)
  AMEBIASIS, METRONIDAZOLE (7759)
  AMINO ACID ABSORPTION, VITAMIN D, A-AMINOISOBUTYRIC ACID (7055)*
  ANASTOMOSIS, HEALING, BACTERIA (7726)
  COLIENTERITIS, NEONATE, EPIDEMIOLOGY (7730)
  CONGENITAL ATRESIA, CHILDREN (7689)
  DAMAGE, ABDOMINAL TRAUMA, SURGERY (7714)
  END-TO-END SUTURE (7746)

  EXOCRINE, PANCREATIC INSUFFICIENCY, GLUTENENTEROPATHY (7450)
  EVERTED SAC, GLUTAMIC ACID, ASPARTIC ACID, ALAMINE (7074)
  FUNCTIONAL BOWEL DISTRESS, DUODENAL ULCER, GALLBLADDER (7678)
  GAMMA GLUTAMYL CARBOXYPEPTIDASE, DIPHENYLHYDANTOIN, BSP (7193)*
  GAS EXPLOSION, SURGICAL COMPLICATION (7704)
  ILEOCECUM, INFLAMMATORY TUMOR (7733)
  KNOT SYNDROME, COMPOUND, VOLVULUS (7696)
  MALABSORPTION, DERMATOGENIC ENTEROPATHY (7439)*
  MALTASE, HEAT STABILITY, PURIFICATION (7024)*
  MALTASE, HETEROGENEITY, HEAT INACTIVATION (7023)*
  MICROFLORA (7208)
  MICROFLORA, PATHOGENOUS ENTOROCOCCUS, FOOD POISONING (7724)
  OBSTRUCTION, MECONIUM ILEUS, TWEEN 80 (7414)*
  PERMEABILITY, MOLECULAR WEIGHT, CLEARANCE (7058)*
  POSTOPERATIVE DISORDERS, DIAGNOSIS (7278)
  PROSTAGLANDIN, PHOSPHOLIPASE A, FATTY ACIDS (7192)*
  RIBOFLAVIN SYNTHESIS, 7-CHLORO-8-METHYL-FLAVIN (7197)*
  STEROID DISTRIBUTION, CORTICOSTERONE, PREGNENOLONE (7057)*
  ULCERATIVE COLITIS, GRANULOMATOUS, URINARY, CRYSTALLOID EXCRETION (7499)*
  WORMS, HYPOVITAMINOSIS A (7765)
INTESTINE, LARGE
  APPENDIX, CARCINOID TUMOR (7479)

- BARIUM OXIDE ENEMA (7276)
- CANCER, SURGERY (7459)
- CECUM, MESENCHYMOMA (7465)
- CHRONIC OBSTRUCTION, CANCER (7467)
- COLITIS, INFLAMMATION, ANKYLOSING SPONDYLITIS (7498)*
- COLON, ABSORPTION, BILE ACID, UNCONJUGATED (7060)*
- COLON, DILATION, CROHN'S DISEASE (7430)*
- COLON, STENOSIS, ATRESIA, NEONATE (7471)
- FAMILIAL POLYPOSIS, MALIGNANCY, ENZYME DISTRIBUTION (7454)*
- GRANULOMATOUS COLITIS, CROHN'S DISEASE (7504)
- MORPHOLOGY, MK-2 GLUE APPLICATION (7047)
- MOTILITY, DUODENAL RECEPTOR, DOG (7079)
- PROCTOSIGMOIDOSCOPY, DIAGNOSIS (7274)
- RADIOLOGY, CONTRAST ENEMA (7227)
- RADIOLOGY, DIVERTICULOSIS, SYMPTOMATOLOGY (7472)
- RECTAL PROLAPSE, ETIOLOGY, SURGERY (7474)
- RECTAL PROLAPSE, SALINE, CHILDREN (7470)
- RECTUM, CARCINOMA (7476)
- RECTUM, SURGERY, CANCER (7494)
- RECTUM, SURGERY, COLON, POLYPOSIS (7460)
- SURGERY, SMALL INTESTINE, ENTEROKINASE ALKALINE PHOSPHATASE (7473)
- ULCERATIVE COLITIS, ANABOLIC STEROID HORMONES (7501)
- ULCERATIVE COLITIS, LACTOSE MALABSORPTION, CROHN'S DISEASE (7441)*
- ULTRASTRUCTURE, MUCOPOLYSACCHARIDOSIS (7453)*

INTESTINE, SMALL
- ABSORPTION, ACETAZOLAMIDE, DRUGS (7062)*
- ABSORPTION, KIDNEY, CALCIUM (7069)
- ABSORPTION, RIBOFLAVIN, EXCRETION (7068)*
- BENIGN ULCERS (7424)
- BILIARY-INTESTINAL FISTULA (7640)
- BIOPSY, JEJUNUM, BACTEREMIA (7677)*
- DUODENUM, CHRONIC OBSTRUCTION (7359)
- DUODENUM, SUBMUCOSAL HEMATOMA (7419)
- ENDOMETRIOSIS (7420)
- ENTEROKINASE, ALKALINE PHOSPHATASE, COLECTOMY (7473)
- ENTEROPATHY, MALABSORPTION, MELANOMA (7736)
- EOSINOPHILIC ENTERITIS, RADIOLOGY (7722)
- EPITHELIAL CELLS, AGE SENSITIVITY, RADIATION (7044)
- 5-HYDROXYTRYPTOPHAN DECARBOXYLASE (7035)*
- GALLSTONE ILEUS, ETIOLOGY, RADIOLOGY (7426)
- GASTROJEJUNOPLASTY, GASTRIC STUMP, INTESTINAL GRAFT (7338)
- GLUCOCORTICOIDS, STOMACH, COLON (7705)
- GLUTENENTEROPATHY, BIOPSY, DERMATITIS HERPETIFORMIS (7437)*
- GLYCOSIDASE, JEJUNUM, ILEUM, DUODENUM (7031)*
- ILEUM, CARCINOID (7421)
- ILEUM, LYMPHOID HYPERPLASIA (7422)
- INNERVATION, MOTILITY, DOG (7081)
- JEJUNAL BIOPSY (7281)
- JEJUNAL GRAFT, SECRETION, GASTROJEJUNAL AUTOPLASTY (7376)
- JEJUNUM, MYOSARCOMA (7425)
- LACTASE DEFICIENCY (7445)
- LESIONS, RADIOLOGY (7273)
- MALABSORPTION, DIAGNOSTIC PROCEDURES (7228)
- MALABSORPTION, DIET, GEFARNATE, INFANT (7443)
- MALABSORPTION SYNDROME (7442)
- MECKEL'S DIVERTICULUM, PERFORATION, BLUNT ABDOMINAL TRAUMA (7417)
- MECKEL'S DIVERTICULUM PATHOLOGY (7427)
- MORPHOLOGICAL CHANGE, MUCOSA, UNCONJUGATED BILE SALTS (7025)*
- MOTILITY, HYPOPHYSECTOMY, PITUITARY GRAFT (7087)
- MOTILITY, SEX STEROIDS (7083)
- MUCOSA, CARBOHYDRATE TOLERANCE TEST, LACTASE (7283)
- MUCOSA, ULTRASTRUCTURE, CHRONIC ENTEROCOLITIS (7496)
- MUCOSA, ULTRASTRUCTURE, ELECTRON MICROSCOPY (7034)*
- MUCOSAL CELL, BRUSH BORDER, ENZYME, VITAMIN D (7021)*
- NEPHRECTOMY, VITAMIN D-DEFICIENCY, CALCIUM (7059)*
- PENICILLAMINE, ISOMERS TRANSPORT (7056)*
- PER ORAL BIOPSY, CHILDREN (7253)
- PERISTALSIS, PITUITRIN (7085)
- RADIOLOGY, DIAGNOSIS, CANCER (7289)
- RESECTION, LIVER FUNCTION (7543)
- SCLERODERMA, MALABSORPTION, INFILTRATIVE DISEASES (7488)
- SECRETION, CHOLESTEROL (7199)
- STRUCTURE, UPTAKE, POLYVINYL PYRROLIDONE (7067)*
- SURGERY, SARCOMA (7429)
- SYNTHESIS, NUCLEIC ACID, PROTEIN, HYPOPHYSECTOMY (7196)*
- VASCULAR INSUFFICIENCY (7741)

IRON
- DEFICIENCY, ANEMIA, GASTRIC MUCOSA (7329)*
- MOBILIZATION, ALLOPURINOL, LIVER (7130)*

JAUNDICE
- ACUTE CHOLECYSTITIS, SGOT, COMMON STONES (7651)*
- AMINAZINE, ACUTE NON-VIRAL HEPATITIS (7586)
- BILE DUCT HYPOPLASIA, SIBLINGS (7554)
- BILIARY TRACT SURGERY, ACUTE RENAL FAILURE (7674)
- EXTRAHEPATIC BILIARY OBSTRUCTION, LIVER HISTOLOGY (7652)*
- EXTRAHEPATIC-INTRAHEPATIC, BILE DUCT OBSTRUCTION (7231)
- OBSTRUCTIVE, ACUTE VIRAL HEPATITIS,

  - FISHER'S DISCRIMINANT ANALYSIS (7248)
  - OBSTRUCTIVE, HEPATORENAL INSUFFICIENCY CHOLEDOCHOLITHIASIS (7658)
  - OBSTRUCTIVE, LIVER FUNCTION, VIRAL HEPATITIS (7252)
  - OBSTRUCTIVE, SURGERY, LIVER FUNCTION (7674)
- JEJUNUM
  - BIOPSY (7281)
  - BIOPSY, COMPLICATION, BACTEREMIA (7677)*
  - INTERPOSITION, PEPTIC ESOPHAGITIS, HIATAL HERNIA (7296)*
  - MYOSARCOMA (7425)
  - PRIMARY MALIGNANT TUMORS, ILEUM (7701)
- KIDNEY
  - DISEASE, LIVER FUNCTION, AMINE NITROGEN (7549)
  - FUNCTION, CREATININE, UREA, RESIDUAL NITROGEN (7694)
- KWASHIORKOR
  - PROTEIN, CALORIE, LIVER, ULTRASTRUCTURE, HISTOCHEMISTRY (7681)*
- LESION
  - GASTRIC MUCOSA, SULPIRIDE, THIOPROPERAZINE (7323)*
  - RECTUM, SURGERY (7457)
- LIPID
  - ABSORPTION, STOMACH, LIPOLYSIS (7065)*
  - CHOLESTEROL BIOSYNTHESIS, CONTROL MECHANISMS (7188)
  - CHOLESTEROL SECRETION, SMALL INTESTINE (7199)
  - FATTY ACID, CHRONIC ALCOHOLIC, LIVER DISEASE (7634)*
  - FATTY ACID, PROSTAGLANDIN, PHOSPHOLIPASE A (7192)*
  - FATTY ACID ACTIVATION, LIVER, MITOCHONDRIA, COMPARTMENTATION, COA (7123)*
  - FATTY ACID SYNTHESIS, ADIPOSE TISSUE, CITRATE TRANSPORT (7106)*
  - HYPERLIPEMIC SERUM, TRIGLYCERIDES, FATTY ACIDS (7164)
  - HYPERLIPIDEMIA, CHRONIC PANCREATITIS (7517)
  - METABOLISM, LIPOGENESIS, LIVER (7139)*
  - METABOLISM, LIVER, FATTY ACID UPTAKE (7160)*
  - PHOSPHO-, LIVER, VITAMIN B6 (7176)
- LITHIASIS
  - CHOLEDOCHO-, OBSTRUCTIVE JAUNDICE, HEPATORENAL INSUFFICIENCY (7658)
- LIVER
  - ABNORMAL BILE, GALLSTONES, GALLBLADDER (7656)*
  - ACUTE NON-VIRAL HEPATITIS, TRAUMA, SEVERANCE (7598)
  - ACUTE VIRAL HEPATITIS, DRUG ABUSE (7604)
  - ACUTE VIRAL HEPATITIS, REMOTE SEQUELAE (7603)
  - ALCOHOL DEHYDROGENASE, CHELATION, RATE (7140)*
  - ALCOHOL DEHYDROGENASE, PYRAZOLE, DIMETHYLSULFOXIDE (7126)*
  - ALTERATION, NAD, NADP, MITOCHONDRIA (7595)
  - AMEBIC ABSCESS (7762)
  - AMEBIC ABSCESS, DIAGNOSIS (7753)
  - AMEBIC ABSCESS, SURGERY (7770)
  - AMP DEAMINASE, THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (7150)*
  - ANGIOTENSIN DEACTIVATION, SODIUM, RENAL ARTERY COMPRESSION (7143)*
  - ARTERIOGRAPHY, HEPATOMA, CIRCULATION (7213)*
  - AUTOANTIBODIES, CIRRHOSIS, HEPATITIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
  - BILE, GALLSTONE, CHOLESTEROL (7655)*
  - BILE ACID BIOSYNTHESIS, REGULATION (7133)*
  - BILE DUCT, BACTERIAL INFECTION, ANTIBIOTICS (7583)
  - BILE DUCT, ASCARIASIS, SURGERY (7769)
  - BILE SECRETION, PITUITRIN (7163)
  - BIOPSY, COMPLICATIONS (7271)
  - CANCER, SURGERY (7542)
  - CARCINOGENESIS, ANAEROBIC GLYCOLYSIS (7533)*
  - CARCINOMA, BLASTOMA (7556)
  - CC14, VITAMIN-PROTEIN PROFILE, NUCLEIC ACIDS (7112)*
  - CELL CULTURES, AMINO ACID TRANSPORT, TYROSINE AMINOTRANSFERASE (7114)*
  - CEREBRO-HEPATO-RENAL SYNDROME, ZELLWEGER'S SYNDROME (7566)
  - CHOLEDOCHODUODENOSTOMY, CHOLECYSTODUODENOSTOMY, CHOLECYSTECTOMY, BILE DUCT (7670)
  - CHOLESTEROL SYNTHESIS, THIOLS (7141)*
  - CHRONIC ALCOHOL DISEASE, FATTY ACIDS (7634)*
  - CHRONIC DISEASE, ARGININE AND ORNITHINE AMMONIA (7565)
  - CIRRHOSIS, ADRENAL GLANDS, HISTOCHEMISTRY (7647)
  - CIRRHOSIS, ALCOHOLISM, PROTEIN MALNUTRITION (7637)
  - CIRRHOSIS, BLOOD PROTEINS, BONE MARROW (7641)
  - CIRRHOSIS, CHRONIC HEPATITIS, ACUTE HEPATITIS, BILIRUBIN FRACTIONS (7627)
  - CIRRHOSIS, CHRONIC HEPATITIS, ADRENAL CORTEX FUNCTION (7625)
  - CIRRHOSIS, CHRONIC HEPATITIS, DUODENAL MUCOSA (7628)
  - CIRRHOSIS, CHRONIC HEPATITIS, LYMPHOCYTES, BLASTOID CELL TRANSFORMATION (7624)*
  - CIRRHOSIS, CHRONIC HEPATITIS, SULFOBROMOPHTHALEIN TEST (7260)
  - CIRRHOSIS, CHRONIC HEPATOPORTAL ENCEPHALOPATHY, LACTULOSE (7631)*
  - CIRRHOSIS, DECOMPENSATION, LIFE EXPECTANCY (7633)*
  - CIRRHOSIS, HEART DISEASE (7649)
  - CIRRHOSIS, HEPATITIS, CHRONIC, ACUTE VIRAL (7630)
  - CIRRHOSIS, METABOLISM, WATER, ELECTROLYTE (7646)
  - CIRRHOSIS, PRIMARY CARCINOMA, LAPAROSCOPY, AUTOPSY (7538)*

CIRRHOSIS, PRIMARY HEPATIC CARCINOMA, HISTOPATHOLOGY (7524)*
CIRRHOSIS, PROTEIN DEFICIENCY, ALBUMIN THERAPY (7650)
CIRRHOSIS, RETICULAR TISSUE (7640)
CIRRHOSIS, SMOOTH SURFACE (7642)
CIRRHOSIS, SURGERY, SODIUM, POTASSIUM (7645)
CITRATE TRANSPORT, FATTY ACID SYNTHESIS, ADIPOSE TISSUE (7106)*
COMA, ACUTE VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (7613)
CYCLOPHOSPHAMIDE ACTIVATION, EHRLICH CARCINOMA, YOSHIDA SARCOMA (7177)
DIAGNOSIS, ENZYMOLOGY, BILIARY TRACT (7247)
DIMETHYLATION, HYDROXYLATION, N-OXIDATION, IMIPRAMINE (7118)*
DISEASE, BSP, COLLOIDAL GOLD (7218)*
DISEASE, VASCULAR RADIOLOGY (7272)
DISEASES, ENZYME RELEASE, DIAGNOSIS (7550)
DNA, RNA, 7,12-DMBA, BENZOPYRENE (7563)
DNA, SYNTHESIS, RAT (7145)*
DOPA, HOMOGENATE, DECARBOXYLASE (7115)*
ECHINOCOCCOSIS, RADIOISOTOPE SCANNING (7235)
ENZYME, BILE CANALICULAR, PHOSPHATASE (7029)*
ENZYME, HIGH PROTEIN DIET, VITAMIN B6 DEFICIENCY (7180)
ENZYME, INDUCTION, PHENTOLAMINE (7157)*
ENZYME, METABOLISM, ASCITES TUMORS (7158)*
ENZYME, NOREPINEPHRINE, PYRIDOXAL PHOSPHATE (7121)*
ENZYME, RHODAMINE SARCOMA (7042)
ENZYME ALKAPTONURIA, GILBERT'S SYNDROME (7562)
ENZYME EXCRETION, DIAGNOSIS (7246)
ENZYME METABOLISM, DIETARY DEFICIENCY (7110)*
EPITHELIAL HEPATOBLASTOMA, HEMIHYPERTROPHY (7561)
ERYTHROCYTE LOCALIZATION, AUTORADIOGRAPHY (7049)
ESTERASE, ACYL TRANSFER, KINETICS (7175)
ETHANOL, MICROSOMAL ENZYMES (7127)*
ETHANOL-INDUCED FATTY, PHENOBARBITAL (7578)*
EXPERIMENTAL HEPATORENAL SYNDROME (7573)
FATTY, ETHANOL, PYRAZOLE (7577)*
FATTY, ETHANOL-INDUCED, PYRAZOLE (7579)*
FATTY, HISTOCHEMISTRY, ENZYME, ALCOHOL (7576)*
FATTY, LIPOPROTEIN METABOLISM, MYOINOSITOL (7580)*
FERRITIN, TUMOR (7166)
FETAL, STEROID METABOLISM, TESTOSTERONE (7132)*
FOREIGN BODIES, EXTRAPLEURAL TRANSDIAPHRAGMATIC SURGERY (7589)
FRUCTOSE-1, 6-DIPHOSPHATASE DEFICIENCY HYPOGLYCEMIA, METABOLIC ACIDOSIS (7527)*
FUNCTION, ETHANOL, ANESTHESIA (7183)
FUNCTION, KIDNEY DISEASES, AMINE NITROGEN (7549)
FUNCTION, NUTRITION, HEPATO-INTESTINAL CIRCULATION (7694)
FUNCTION, OBSTRUCTIVE JAUNDICE, VIRAL HEPATITIS (7252)
FUNCTION, PULMONARY CANCER (7594)
FUNCTION, SMALL INTESTINE, RESECTION (7543)
FUNCTION, STRUCTURE, PYRAZOLE (7125)*
FUNCTION, SYRINGOMYELIA, GASTRIC ULCER (7548)
FUNCTION, TICK-BORNE ENCEPHALITIS (7574)
GIANT HEMANGIOMAS, SURGERY (7569)
GLUTATHIONE, DEPLETION, BSP, METABOLISM (7119)*
GLYCINE-SERINE CONVERSION, NONKETOTIC HYPERGLYCINEMIA (7528)*
GLYCOGEN, ACUTE HEPATITIS, PYRIDOXINE (7585)
GLYCOGEN PHOSPHORYLASE, GLUCOSE, GLUCOCORTICOID (7142)*
GLYCOGEN SYNTHETASE, GLUCOSE, GLUCOCORTICOIDS (7146)*
GLYCOGENOSIS, MUSCLE, PHOSPHORYLASE KINASE (7572)
HEMANGIOMATOSIS, HEPATIC ARTERY LIGATION (7570)
HEPATIC COMA, URETEROSIGMOIDOSTOMY (7644)
HEPATITIS, CIRRHOSIS, FULMINANT HEPATIC FAILURE (7526)*
HEPATITIS, HALOTHANE (7590)
HEPATO-BILIARY DISEASE, SERUM PROTEOLYTIC ACTIVITY, ALPHA2-MACROGLOBULIN (7551)
HEPATOMA, CHEMOTHERAPY, RADIOTHERAPY, METHOTREXATE, ALPHA-FETOPROTEIN (7531)*
HEPATOMA, MICROSOMAL HYDROXYLATION, 2-ACETAMIDOFLUORENE, 3-METHYLCHOLANTHRENE (7525)*
HEPATOMA, PEROXISOMAL ENZYME (7033)*
HEPATORENAL INSUFFICIENCY, CHOLEDOCHOLITHIASIS, OBSTRUCTIVE JAUNDICE (7658)
HISTONE KINASES, ADENOSINE 3'-5'CYCLIC PHOSPHATE (7022)*
HYPERLIPEMIC SERUM, TRIGLYCERIDES, FATTY ACIDS (7164)
HYPERTENSION, SPLEEN, CIRRHOSIS (7546)
HYPERTHYROID, GLUCOKINASE, GLUCOSE-6-PHOSPHATASE (7135)*
IMIPRAMINE METABOLISM, STRAIN DIFFERENCES (7190)
INFUSION, 5-FLUORO-2'-DEOXYURIDINE (7728)
INJURY, ALCOHOL, HISTAMINE (7575)*
INJURY, DIABETES MELLITUS, CIRRHOSIS (7597)
KIDNEY, INFECTIOUS MONONUCLEOSIS (7545)
KIDNEY, MOUSE, ESTERASE (7037)*
KWASHIORKOR, RAT, ULTRASTRUCTURE

  (7681)•
  L-GLUTAMINE, CHOLESTEROL, D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE (7181)
  L-SERINE DEHYDRATASE, CASEIN HYDROLYSATE, STARVATION (7120)•
  LIPID, UPTAKE, CIS-FATTY ACIDS, TRANS-FATTY ACIDS (7160)•
  LIPID METABOLISM, LIPOGENESIS (7139)•
  LYSOSOMAL ENZYMES, STILBAMIDINES (7104)•
  METABOLISM, AFLATOXIN, RNA (7171)
  METABOLISM, AMINOACYL-TRNA SYNTHESIS, CHOLESTERYL ESTERS (7154)•
  METABOLISM, BILE ACID KINETICS, MAN (7184)
  METABOLISM, CARBOHYDRATE, LIPID, NAD+ (7144)•
  METABOLISM, SEPTIC SHOCK, SURGERY (7415)
  METABOLISM, SUBSTRATE, BETA-GLUCURONIDASE (7032)•
  METASTASIS, LUNG CARCINOMA (7558)
  MICROSOME, STEAROYL-COA DESATURASE (7040)
  MICROSOMES, HYDROGEN ION, MIXED FUNCTION OXIDASES, N-OXYGENATION (7113)•
  MICROSOMES, NUCLEOPROTEIN FRACTION (7048)
  MICROSOMES, PARATHION, PESTICIDES, DRUGS (7124)•
  MICROSOMES, PHENOBARBITAL INDUCTION, CYTOCHROME P-450 (7151)•
  MICROSOMES, STEROID, HYDROXYLATION, MORPHINE (7128)•
  MITOCHONDRIA, COLD EXPOSURE, UBIQUINONE (7185)
  MITOCHONDRIA, DEAMINATION (7169)
  MITOCHONDRIA, DICARBOXYLATE ANION EXCHANGE, TRANSPORT INHIBITOR (7105)•
  MITOCHONDRIA, ENDOTOXEMIA, LIPOPOLYSACCHARIDE, E. COLI (7683)•
  MITOCHONDRIA, MICROSOMES, GLYCOPROTEIN, ASPARAGINASE (7136)•
  MITOCHONDRIA, TRNA SYNTHESIS (7147)•
  MITOCHONDRIA, SH- GROUP ALKYLATION, OLIGOMCSIN ADP (7129)•
  MITOCHONDRIA, 2, 4-DINITROPHENOL (7186)
  MITOCHONDRIAL FERROCHELATASE, INDUCTION (7161)•
  MITOCHONDRIAL PROTEIN, AMINO ACID INCORPORATION, CYCLOHEXIMIDE (7152)•
  MN, CU AND ZN, YOSHIDA ASCITES SARCOMA ([illegible])
  MOBILIZATION, IRON, ALLOPURINOL (7130)•
  MORPHOLOGY, AGE RAT (7052)
  MORPHOLOGY, GASTRIC CANCER (7340)
  NAD SYNTHETASE, SPECIFICITY, RAT (7028)•
  NEONATAL, NOVIKOFF HEPATOMA, DEOXYTHYMIDINE KINASE (7117)•
  NODULE, N-2-FLUORENYLACETAMIDE, METABOLISM (7534)•
  NUCLEI, HISTONE-SPECIFIC TRANSACETYLASES (7051)
  ORNITHINE DECARBOXYLASE, GROWTH HORMONE (7108)•
  PANCREAS, DUODENUM, BILE DUCT, CHOLECYSTODUODENOSTOMY (7676)
  PERFUSED, BILE ACID SYNTHESIS, CHRONIC BILIARY DAMAGE (7153)•
  PHOSPHOLIPID, CHOLINE DEFICIENCY, LECITHIN SYNTHESIS (7107)•
  PHOSPHILIPID, SYNTHESIS, CHOLINE METHIONINE (7138)•
  PHOSPHOLIPID, VITAMIN B6 (7176)
  PLASMA PROTEIN, ALBUMIN ALTERATION (7122)•
  PORTAL DECOMPRESSION, LIVER-KIDNEY CONNECTION, IVALON (7742)
  PORTAL HYPERTENSION, BILE, CC14, DOG (7557)
  PRIMARY CARCINOMA, SERUM, ALPHA-FETOPROTEIN (7530)•
  PROTEIN DYNAMICS, BILE SECRETION, RABBIT (7148)
  PROTEIN, SYNTHESIS, AMINO ACID INCORPORATION (7149)•
  PROTEIN, SYNTHESIS, PHENOBARBITAL (7156)•
  PYRROLIDONYL PEPTIDASE, ANIMAL, HUMAN (7039)
  RADIOLOGY, ANGIOGRAPHY, SCANNING, CIRRHOSIS, TUMORS (7219)•
  REDOX POTENTIAL, NADPH SYSTEM (7131)•
  REGENERATION, SERUM GROWTH FACTOR, MITOSIS, DNASE, RNASE (7116)•
  RESECTION, GLUCOSE, METABOLISM, FATTY ACID (7148)•
  RESECTION, SGOT, SGPT (7180)
  RESECTION, THROMBOELASTOGRAM, COAGULOGRAM (7541)
  RIBOSOME, ANTIGENIC SPECIFICITY, OX (7045)
  RIBOSOME, BLOOD GROUP ANTIGENS (7048)
  RIBOSOME, RIBONUCLEASE (7179)
  RNA, NUCLEI, GLUCOCORTICOID (7155)•
  SCAN, CIRRHOSIS, CHRONIC HEPATITIS (7629)
  SGOT, SGPT, ARGINASE (7159)•
  SGPT, ACUTE VIRAL HEPATITIS (7614)
  SHOCK, HEMORRHAGE, MORPHOLOGY (7539)•
  SUBCUTANEOUS HEPATOMA, METASTASES (7560)
  SURGERY, ACUTE NON-VIRAL HEPATITIS (7596)
  TOXICITY, DDT, THERAPY (7584)
  TRANSPLANT, BLEEDING (7552)
  TRAUMA, MORTALITY, HEMORRHAGE (7591)
  TRAUMA, PULMONARY COMPLICATIONS (7588)
  TRAUMA, RIGHT LOBECTOMY (7555)
  TRAUMA, SERUM GLYCOPROTEIN (7551)
  TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, MORRIS HEPATOMA, HISTONE (7537)•
  TUBERCULOSIS, HISTOLOGY (7593)
  TUMOR, HEPATIC ARTERY LIGATION (7571)
  VIRAL HEPATITIS, DIAGNOSIS, ANTIGEN (7211)•
  WILSON'S DISEASE, PENICILLIN G, COPPER METABOLISM (7564)
  ZINC, DNA, CIRRHOSIS (7632)•
LIVER DISEASE
  CONGENITAL, ACQUIRED, GLUCURONYL TRANSFERASE ACTIVITY (7528)•
  DIAGNOSIS, ANGIOGRAPHY, ISOTOPE

  - SCANNING (7220)*
  - HEPATITIS, CIRRHOSIS, HEPATIC-ASSOCIATED ANTIGEN (7600)*
- LYMPHATIC
  - LYMPHOID HYPERPLASIA, TERMINAL ILEUM (7422)
  - MALIGNANT LYMPHORETICULOSIS, ACUTE CHYLOPERITONEUM, HEMOLYTIC ANEMIA (7745)
  - PRIMARY LYMPHANGIECTATIC GASTROENTEROPATHY, PROTEIN LOSS, EOSINOPHILIA (7734)
- LYSOSOME
  - LIVER, ENZYMES, STILBAMIDINES (7132)*
- MALABSORPTION
  - BICARBONATE EXCRETION, PARATHORMONE, ACIDOSIS, VITAMIN D (7430)*
  - CELIAC SYNDROME, INTESTINAL LYMPHOMA (7447)
  - CHOLECYSTOCOLONIC FISTULA, CHOLECYSTECTOMY (7451)
  - EOSINOPHILIC GASTROENTERITIS (7707)
  - EXOCRINE PANCREATIC INSUFFICIENCY, GLUTENENTEROPATHY (7450)
  - INTESTINE, DERMATOGENIC ENTEROPATHY (7439)*
  - LACTOSE, ULCERATIVE COLITIS, CROHN'S DISEASE (7441)*
  - LACTOSE INTOLERANCE, MILKING, CULTURE (7446)
  - SMALL INTESTINE, DAPSONE, DERMATITIS HERPETIFORMIS (7678)*
  - SMALL INTESTINE, DIET, GEFARNATE, INFANTS (7443)
  - SMALL INTESTINE, SCLERODERMA, INFILTRATIVE DISEASES (7488)
  - SPRUE, PREGNANCY, GASTRECTOMY (7449)
  - SYNDROME, SMALL INTESTINE (7442)
  - VITAMIN B12, POTASSIUM CHLORIDE THERAPY (7444)
- MALFORMATION
  - ATRESIA, ANAL, RECTAL (7452)*
- MALNUTRITION
  - PROTEIN, CALORIE, KWASHIORKOR (7681)*
- MESENTERY
  - VEIN THROMBOSIS, HEMODYNAMICS (7692)
- METABOLISM
  - AFLATOXIN, LIVER, RNA (7171)
  - AMINOACYL-TRNA SYNTHESIS, CHOLESTERYL ESTERS (7154)*
  - BILE ACID BIOSYNTHESIS, REGULATION (7133)*
  - BILE ACID SYNTHESIS, LIVER, CHRONIC BILIARY DAMAGE (7153)*
  - BILE PIGMENTS (7174)
  - BIOLOGICAL POTENCY, 3-DEHYDRORETINOIC ACID (7210)
  - CHOLESTEROL BIOSYNTHESIS, CONTROL MECHANISMS (7188)
  - COPPER, WILSON'S DISEASE, PENICILLIN G (7564)
  - DEXAMETHASONE, DIPHENYLHYDANTOIN (7162)
  - DIMETHYLATION, HYDROXYLATION, N-OXIDATION, IMIPRAMINE (7118)*
  - GLUCOSE, HEPATECTOMY, FATTY ACID (7148)*
  - GLYCOGENOSIS, LIVER, MUSCLE, PHOSPHORYLASE KINASE (7572)
  - HEPATIC NODULE, N-2-FLUORENYLACETAMIDE (7536)*
  - HEPATIC PROTEIN CATABOLISM, ALBUMIN ALTERATION (7122)*
  - INBORN ERROR, HEPATIC FRUCTOSE-1, 6-DIPHOSPHATASE DEFICIENCY (7527)*
  - INHIBITOR, MEMBRANE POTENTIAL, GASTRIC MUCOSA (7073)
  - LIPID, LIVER, CIS-FATTY ACIDS, TRANS-FATTY ACIDS (7160)*
  - LIPOGENESIS, LIVER, GLUCOSE (7139)*
  - LIPOLYSIS, STOMACH, LIPID ABSORPTION (7065)*
  - LIVER, CACHEXIA, ASCITES TUMOR (7158)*
  - LIVER, CARBOHYDRATE, LIPID, NAD+ (7144)*
  - LIVER, CARCINOGENESIS, GLYCOLYSIS (7533)*
  - LIVER, GLYCINE-SERINE, NONKETOTIC HYPERGLYCINEMIA (7529)*
  - LIVER, IMIPRAMINE, STRAIN DIFFERENCES (7190)
  - LIVER MITOCHONDRIA, OXIDATION, 2, 4-DINITROPHENOL (7186)
  - LIVER, PHOSPHOLIPID, LECITHIN (7107)*
  - LIVER, REDOX POTENTIAL, NADPH (7131)*
  - NUCLEIC ACID, GASTRIC MUCOSA, DOG (7097)
  - PANCREAS, PROTEIN HYDROLYSATES, DOG (7104)
  - PLASMA LIPOPROTEIN, FATTY LIVER, MYOINOSITOL (7580)*
  - RIBOFLAVIN SYNTHESIS, INTESTINE, 7-CHLORO-8-METHYL-FLAVIN (7197)*
  - RIBOSOMAL RNA SYNTHESIS, HEPATIC MITOCHONDRIA (7147)*
  - SH-GROUP ALKYLATION, MITOCHONDRIA, OLIGOMYCIN, ADP (7129)*
  - SMALL INTESTINE, NUCLEIC ACID SYNTHESIS, PROTEIN SYNTHESIS (7196)*
  - STEROID, HUMAN FETAL LIVER, TESTOSTERONE (7132)*
- MICROSOME
  - LIVER, MIXED FUNCTION OXIDASES, N-OXYGENATION (7113)*
  - LIVER, PROTEIN SYNTHESIS, PHENOBARBITAL INDUCTION (7151)*
- MITOCHONDRIA
  - LIVER, BRAIN, GLYCOPROTEIN, ASPARAGINASE (7136)*
  - LIVER, DEAMINATION (7169)
  - LIVER, DICARBOXYLATE ANION EXCHANGE, TRANSPORT INHIBITOR (7105)*
  - LIVER, ENDOTOXEMIA, E. COLI, LIPOPOLYSACCHARIDE (7683)*
  - LIVER, FATTY ACID ACTIVATION, COMPARTMENTATION, COA (7123)*
  - LIVER, FERROCHELATASE, PHENOBARBITAL (7161)*
  - LIVER, RIBOSOMAL, RNA SYNTHESIS (7147)*
  - LIVER, SH-GROUP ALKYLATION, OLIGOMYSIN, ADP (7129)*
- MORPHINE
  - HYDROXYLATION, STEROIDS, LIVER, MICROSOMES (7128)*
- MORPHOLOGY

- DUODENAL MUCOSA, CANCER, GASTRIC (7334)
- DUODENUM, RADIATION EFFECTS (7038)
- GALLBLADDER, CHOLECYSTITIS, ANATOMOPATHOLOGY (7661)
- GASTRIC MUCOSA, CHRONIC GASTRITIS (7374)
- LARGE INTESTINE, MK-2 GLUE APPLICATION (7047)
- LIVER, AGE, RAT (7052)
- SMALL INTESTINAL MUCOSA, UNCONJUGATED BILE SALTS (7025)•

MOTILITY
- BILIARY TRACT, KETOSCILIUM (7749)
- DUODENUM, SECRETIN, CHOLECYSTOKININ-PANCREOZYMIN (7194)•
- DUODENUM, STOMACH, FOOD, HUNGER (7078)•
- DUODENUM, STOMACH, MORPHOLOGY, DIVERTICULITIS (7258)
- ESOPHAGUS (7280)
- GALLBLADDER, VEGETABLE JUICE (7086)
- GASTRECTOMY, PROPHYLAXIS (7333)
- GASTRIC EMPTYING, PITUITARY CONTROL (7088)
- GASTRIC EMPTYING, VAGOTOMY (7082)
- LARGE INTESTINE, DUODENAL RECEPTOR, DOG (7079)
- SMALL INTESTINE, HYPOPHYSECTOMY, PITUITARY GRAFT (7087)
- SMALL INTESTINE, INNERVATION, DOG (7081)
- SMALL INTESTINE, SEX STEROIDS (7083)
- SMOOTH MUSCLE, STOMACH, CAT (7084)

MUCOSA
- DUODENUM, MUCOPOLYSACCHARIDES, PEPTIC ULCER (7394)
- ESOPHAGUS, BLOOD FLOW (7300)
- GALLBLADDER, BILE, GLYCOPROTEINS, IMMUNOLOGY (7653)•
- GASTRIC, XYLAMIDE, GASTRIC ULCER, GASTRODUODENITIS (7387)•
- SMALL INTESTINE ULTRASTRUCTURE, AUTOLYSED SPECIMEN (7034)•

NERVOUS SYSTEM
- VAGOTOMY, DUODENAL ULCER (7402)•
- VAGOTOMY, GASTRIC EMPTYING (7082)
- VAGOTOMY, GASTRIC ULCER (7392)
- VAGOTOMY, PEPTIC ULCER (7404)
- VAGUS PRESERVATION, GASTRECTOMY (7366)

OREPINEPHRINE
- PYRIDOXAL PHOSPHATE, ENZYMES, LIVER (7121)•

UCLEIC ACID
- DNA, RNA, LIVER, 7, 12-DMBA, BENZOPYRENE (7543)
- DNA POLYMERASE, RNA POLYMERASE, CANCER (7137)•
- DNA SYNTHESIS, DUODENAL CRYPT CELLS, CHELATING AGENTS (7198)

UCLEUS
- DNA, SYNTHESIS, LIVER (7145)•

UTRITION
- PARENTERAL, GASTRIC ULCER, LIVER, PANCREAS, ADRENAL CORTEX (7407)•

BSTRUCTION
- INTESTINE, SURGERY (7716)

XYGEN
- TENSION, GASTRIC WALL, INTESTINE (7053)

PANCREAS
- ACUTE PANCREATITIS, CELLULAR MECHANISM SUBCELLULAR MECHANISM (7513)
- CANCER, SURGERY (7510)
- CARCINOMA, DUODENAL CYTOLOGY, SECRETIN (7221)•
- CHRONIC GASTRITIS, AMYLASE, LIPASE (7351)
- CHRONIC PANCREATITIS, ADRENAL CORTEX, ADDISON'S DISEASE (7518)
- CHRONIC PANCREATITIS, SECRETION, HIGH-PROTEIN DIET (7519)
- CYTOLOGY, NUTRITION, AGE (7103)
- DISEASE, RENAL ABNORMALITY (7507)
- DISEASES, SECRETION, DIAGNOSIS (7295)
- DISTAL DUCT, INFLAMMATION, SPHINCTEROPLASTY (7516)
- DUODENAL INJURY, PANCREATODUODENECTOMY (7509)
- EXOCRINE INSUFFICIENCY, GLUTENENTEROPATHY (7450)
- FAST SCANNING (7214)•
- HEMORRHAGIC PANCREATITIS, METHEMALBUMIN (7265)
- ISOAMYLASES, AMINO ACID CONTENT (7030)•
- LESIONS, CARCINOMA, PANCREATITIS (7216)•
- MALIGNANCY, CHILDREN (7506)
- METABOLISM, PROTEIN HYDROLYSATES, DOG (7104)
- PANCREATITIS, LYSOSOMAL PROTEASES (7512)
- PSEUDOCYST, HEMOBILIA, HEMORRHAGE (7508)
- RADIOISOTOPE SCAN (7293)
- SECRETION, COLLECTION, CANNULA (7101)•
- SUBCUTANEOUS RUPTURE (7365)
- TRYPSIN INHIBITOR, DOG (7102)
- TUMOR, DIAGNOSIS (7241)
- ZOLLINGER-ELLISON SYNDROME, TUMOR (7747)

PANCREATIC DUCT
- CANNULATION, PANCREATIC SECRETION (7101)•

PANCREATITIS
- ACUTE, ABDOMEN, ATHEROSCLEROSIS (7688)
- ACUTE, AMYLASE, LIPASE, TRYPSIN, SERUM (7257)
- ACUTE, GASTRIC ULCER PERFORATION, DIFFERENTIAL DIAGNOSIS (7234)
- ACUTE, HEMODYNAMICS, TRYPSIN, SHOCK (7515)
- ACUTE, PATHOGENESIS, TRYPSIN (7514)
- ACUTE, SELECTIVE HYPOTHERMIA, ABDOMEN (7206)
- ACUTE, SERUM METHEMALBUMIN (7521)
- CHRONIC, CHOLECYSTECTOMY, VIRAL HEPATITIS, GASTRIC ULCER (7522)
- CHRONIC, DUODENUM, ELECTRICAL STIMULATION (7520)
- CHRONIC, VEGETATIVE NERVOUS SYSTEM, SURGERY (7523)

PARASITE
- AMEBIC ABSCESS, LIVER (7762)

PARASITIC DISEASE

- AMEBIASIS, CYST ANTIGEN, SERODIAGNOSIS (7279)
- AMEBIASIS, HEMAGGLUTINATION TEST (7249)
- AMEBIASIS, INTESTINE, METRONIDAZOLE (7759)
- ASCARIASIS, SCHWARTZMAN PHENOMENON, ASCARIDE TISSUE (7201)
- ASCARIASIS, SURGICAL COMPLICATIONS, CHILDREN (7761)
- BILHARZIASIS, LUCANTHONE HYDROCHLORIDE CHEMOTHERAPY (7747)
- HYDATID CYST (7760)
- HYDATID CYST, ASCITES, CHOLECYSTECTOMY (7758)
- OPISTHORCHOSIS, CHLOROXYL THERAPY (7766)
- OPISTHORCHOSIS, LIVER, SURGERY, PERITONITIS (7754)
- SCHISTOSOMIASIS, PORTAL HYPERTENSION SYNDROME (7764)

PATHOGENESIS
- ACUTE PANCREATITIS, TRYPSIN (7514)

PENTAGASTRIN
- ULCER, DUODENUM, CARBACHOL, HISTAMINE (7386)*

PEPSIN
- ENZYME, POLYVINYLPYRROLIDONE (7090)*

PEPTIDE
- ENTEROGASTRONE, CHOLECYSTOKININ-PANCREOZYMIN (7095)*

PERFORATION
- DIVERTICULUM, GASTROINTESTINAL TRACT, SURGERY (7715)
- PEPTIC ULCER, DIAGNOSIS, TREATMENT (7408)

PERITONEOSCOPY
- CHOLECYSTITIS (7223)

PERITONEUM
- ACUTE CHYLO-, HEMOLYTIC ANEMIA, MALIGNANT LYMPHORETICULOSIS (7745)
- COOLING, UPPER GASTROINTESTINAL HEMORRHAGE (7718)
- PERITONITIS, COLONIC PERFORATION, DIVERTICULUM, CANCER (7493)
- PERITONITIS, ULCER PERFORATION (7165)

PERITONITIS
- ACUTE APPENDICITIS, ILEUS (7495)

PHENOBARBITAL
- PROTEIN SYNTHESIS, LIVER, TRACERS (7156)*

PHOSPHOLIPID
- LIVER, METABOLISM, LECITHIN (7107)*
- SYNTHESIS, LIVER, CHOLINE, METHIONINE (7138)*

PLASMA
- CLEARANCE, INTESTINAL PERMEABILITY, UREA (7058)*

POISON
- CC14, VITAMIN-PROTEIN PROFILE, LIVER, NUCLEIC ACIDS (7112)*
- FOOD, INTESTINAL MICROFLORA, PATHOGENOUS ENTEROCOCCUS (7724)
- FOOD, SALMONELLA INFECTIONS (7706)

POLYPOSIS
- COLON, RECTUM, SURGERY (7460)

PORTAL HYPERTENSION
- ESOPHAGEAL VEIN, PORTAL VEIN, MORPHOLOGY, SURGERY (7640)
- HEMORRHAGE, ESOPHAGUS, STOMACH (7448)
- LIVER, BILE, CC14, DOG (7557)
- LIVER, CIRRHOSIS, SPLEEN (7546)

PREGNANCY
- ANEMIA, SPRUE (7449)
- RECURRENT CHOLESTASIS, CHOLESTYRAMINE (7553)

PROPHYLAXIS
- GASTRECTOMY, MOTILITY (7333)
- GASTROINTESTINAL BLEEDING, DISTRESS, SULPIRIDE (7682)*

PROTEIN
- ABSORPTION, AMINO ACID, DIGESTION (7054)*
- ABSORPTION, TANNIC ACID (7076)
- ALBUMIN, BILIRUBIN, TOXICITY, DISTRIBUTION (7072)
- BLOOD, BONE MARROW, CIRRHOSIS (7641)
- DEPLETION, HEPATIC PLASMA PROTEIN, ALBUMIN (7122)*
- DYNAMICS, LIVER, BILE, SECRETION (7168)
- GLYCO-, SERUM, LIVER TRAUMA (7551)
- HEAT DAMAGE, LYSINE, ABSORPTION (7066)*
- INTESTINAL ABSORPTION, ENTEROCOLITIS (7043)
- LIPO-, METABOLISM, FATTY LIVER, MYOSINOSITOL (7580)*
- LIVER, SYNTHESIS, CELL-FREE SYSTEMS (7149)*
- METHEMALBUMIN, HEMORRHAGIC PANCREATITIS (7265)
- NUCLEO-, LIVER MICROSOMES (7048)
- NUTRITION, HEPATO-INTESTINAL CIRCULATION (7694)
- PRIMARY LYMPHANGIECTATIC, GASTROENTEROPATHY, EOSINOPHILIA (7734)
- SYNTHESIS, LIVER, PHENOBARBITAL (7156)*
- SYNTHESIS, MITOCHONDRIA, MICROSOMES, ASPARAGINASE INHIBITION (7136)*

PSYCHOSOMATIC
- SYMPTOMS, STEATORRHEA, CROHN'S DISEASE (7438)*

PYLORUS
- DUPLICATION, NEONATE, SURGERY (7354)
- PEPSINOGEN, AMYLASE, DOG (7096)

RADIATION
- SENSITIVITY, JEJUNUM, EPITHELIAL CELL, AGE (7044)

RADIOISOTOPE
- DIAGNOSIS, CANCER, ESOPHAGUS (7233)

RADIOLOGY
- HYPOTONIC DUODENOGRAPHY, AMPULLA OF VATER, OBSTRUCTIVE JAUNDICE (7217)*
- HYPOTONIC DUODENOGRAPHY, DUODENAL LESIONS, PANCREATITIS (7212)*
- LARGE INTESTINE, CONTRAST ENEMA (7227)

RADIOTHERAPY
- HEPATOMA, CYTOSTATIC AGENTS, METHOTREXATE, BANTU (7531)*

RECTUM
- ADENOCARCINOMA, COLON (7480)
- ANORECTAL ANOMALIES, CLASSIFICATION (7469)
- CANCER, LYMPHOGRAPHY (7266)

  CANCER, SYNCHRONOUS EXTIRPATION (7464)
  CANCER, TREATMENT (7463)
  CARCINOMA (7476)
  CROHN'S DISEASE, PROCTOCOLECTOMY (7309)
  FISTULA, NONSUTURE REPAIR, COLON (7477)
  HERNIA, DIAGNOSIS; SURGERY (7462)
  LESIONS, SURGERY (7457)
  MUCOSA, RESECTION (7481)
  MUCOSAL POTENTIAL; COLON, ALDOSTERONE (7064)*
  PROLAPSE, ETIOLOGY, SURGERY (7474)
  PROLAPSE, SALINE, CHILDREN (7470)
REFLEX
  MYOTATIC; INTEROCEPTOR STIMULATION, GASTROINTESTINAL TRACT (7080)
REGENERATION
  LIVER, POSTHEPATECTOMY, SERUM GROWTH FACTOR, MITOSIS (7116)*
RESECTION
  ACUTE MESENTERIC INFARCT (7684)*
  APPENDECTOMY, COLONIC CANCER (7490)
  CANCER, BILE DUCT, PANCREAS (7510)
  CHOLECYSTECTOMY, CHOLECYSTOCOLONIC FISTULA, MALABSORPTION (7451)
  CHOLECYSTECTOMY, HYDATID CYST, ASCITES (7758)
  COLON, FECAL LOSS, ELECTROLYTES, NITROGEN (7492)
  ESOPHAGUS, TRANSPLEURAL, CANCER, ANESTHESIA (7315)
  GASTRECTOMY, SPRUE, PREGNANCY (7440)
  GASTRECTOMY, VAGUS PRESERVATION (7364)
  GASTRIC, DUODENAL ULCERS, HEMORRHAGE (7339)
  GASTRIC, PEPTIC ULCER (7405)
  GASTROSTOMY LEAKAGE, CHILDREN, TREATMENT (7362)
  GASTROTOMY, ESOPHAGEAL PERFORATION (7310)
  ILEUM, CHOLESTYRAMINE, DIARRHEA (7744)
  LIVER, THROMBOELASTOGRAM, COAGULOGRAM (7541)
  PANCREATODUODENECTOMY, PANCREATODUODENAL INJURY (7509)
  PROCTOCOLECTOMY, RECTUM, CROHN'S DISEASE (7309)
  RECTAL MUCOSA (7481)
  RIGHT HEPATIC LOBE, TRAUMA (7555)
  SMALL INTESTINE, LIVER FUNCTION (7543)
  SPHINCTEROTOMY, SPHINCTER OF ODDI (7659)
  STOMACH, CANCER (7382)
  STOMACH, DUMPING SYNDROME (7378)
  STOMACH, GASTRO-DUODENAL ANASTOMOSIS (7341)
  STOMACH, METHYLURACIL, DOG (7350)

  SUBTOTAL, STOMACH, CANCER (7381)
  ULCER, GASTRIC DUODENAL, GASTRIC SECRETION (7400)
  VAGOTOMY, DYSPHAGIA, ESOPHAGUS (7295)*
  VAGUS, GASTRECTOMY, DUODENAL ULCER (7388)
RESPIRATORY SYSTEM
  PULMONARY CANCER, LIVER FUNCTION (7594)
RIBOSOME
  LIVER, ANTIGENIC SPECIFITY, OX (7045)
  LIVER, BLOOD GROUP ANTIGENS (7046)
RNA
  LIVER NUCLEI, GLUCOCORTICOID (7155)*
  TURNOVER, NEONATAL LIVER, HEPATOMA, DEOXYTHYMIDINE KINASE (7117)*
SALMONELLOSIS
  FOOD POISONING, IMMUNOLOGY (7687)
  GALLBLADDER, INNERVATION, DOG (7712)
SARCOMA
  SMALL INTESTINE, SURGERY (7429)
  STOMACH, GASTROSCOPY (7238)
SCINTIPHOTOGRAPHY
  BILE DUCT OBSTRUCTION, EXTRAHEPATIC-INTRAHEPATIC (7231)
SECRETIN
  BRUNNER'S GLANDS, CHOLECYTOKININ-PANCREOZYMIN, DUODENAL MOTILITY (7194)*
SECRETION
  ACID, GASTRIC ULCER (7268)
  BILE, BILE ACID BIOSYNTHESIS (7187)
  CHOLESTEROL, SMALL INTESTINE (7199)
  GASTRIC, PENTAGASTRIN, GASTRITIS (7327)*
  GASTRIC, MAGNESIUM, PEPTAVLON, HISTAMINE (7094)*
  GASTRIC, ULCER, DUODENUM, SURGERY (7400)
  GASTRIC, VISUAL DEPRIVATION, DOG (7100)
  GASTRIC ACID, RADIOTELEMETRY (7262)
  JEJUNAL GRAFT, GASTROJEJUNAL AUTOPLASTY (7376)
  MOTILITY, GASTROINTESTINAL TRACT, PLEURITIS, PNEUMONIA (7690)
  PANCREAS, CHRONIC PANCREATITIS, HIGH PROTEIN DIET (7519)
  PANCREAS, PANCREATIC DISEASES (7285)
  PEPTIC ACTIVITY, CARBENOXOLONE, GLYCYRRHETINIC ACID (7091)*
  STOMACH, ACID, HYPEROSMOLAL (7089)*
  STOMACH, MUCIN, HISTOCHEMISTRY (7036)*
  STOMACH, PEPTIC ULCER (7396)
  STOMACH, QUANTITATIVE DETERMINATION (7256)
  STOMACH, SURGERY, ULCER (7254)
SEROLOGY
  ESCHERICHIOSIS, DIAGNOSIS (7282)
SERUM
  HEMIN CONSTITUENTS, METHEMALBUMIN, ACUTE PANCREATITIS (7521)
  LIVER REGENERATION, GROWTH FACTOR, MITOSIS, RNASE, DNASE (7116)*
SHOCK
  LIVER, HEMORRHAGE; MORPHOLOGY (7539)*
SPHINCTER
  ODDI, SPHINCTEROTOMY (7659)
SPLEEN
  HYPERSPLENISM, SPLENECTOMY, ESOPHAGEAL VARICES (7303)
STAINING AGENTS
  FLUORESCENCE, LAVAGE, STOMACH, CYTODIAGNOSIS (7534)*
STEATORRHEA
  PSYCHOSOMATIC DISEASE, MALABSORPTION (7438)*
STEROID

  - ALDOSTERONE, MUCOSAL POTENTIAL, RECTUM, COLON (7064)*
  - CHOLESTEROL, LIVER, D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE (7181)
  - CORTICOSTERONE, PREGNENOLONE, EXCRETION (7057)*
  - GASTRIC SECRETION, ULCER (7099)
  - GLUCOCORTICOID, GLUCOSE, LIVER GLYCOGEN PHOSPHORYLASE (7142)*
  - GLUCOCORTICOID, GLYCOGEN SYNTHETASE, LIVER (7146)*
  - GLUCOCORTICOID, STOMACH, COLON, SMALL INTESTINE (7705)
  - INHIBITION, GLUCURONIZATION (7433)
  - SEX, SMALL INTESTINE, MOTILITY (7039)
  - TESTOSTERONE METABOLISM, HUMAN FETAL LIVER (7132)*
  - THERAPY, PRIMARY SCLEROSING CHOLANGITIS (7568)
  - ULCER, SULPIRIDE, NEUROSURGICAL RESUSCITATION (7349)
- STIMULATION
  - ELECTRICAL, DUODENUM, CHRONIC PANCREATITIS (7520)
  - INTEROCEPTOR, MYOTATIC REFLEX, GASTROINTESTINAL TRACT (7080)
- STOMACH
  - ACID, SECRETION, HISTALOG (7324)*
  - ACID SECRETION, RADIOTELEMETRY (7262)
  - ACIDITY, RADIOTELEMETRY (7261)
  - ACUTE ULCER, EROSIONS, SPINAL CORD DISEASE (7332)
  - ANASTOMOSIS, CERVICAL ESOPHAGUS, RECONSTRUCTION (7304)
  - ANTHRAX, MASSIVE ASCITES (7361)
  - ANTRUM, ASPIRATION BIOPSY, CHRONIC GASTRITIS (7243)
  - BLOOD FLOW, DISTENSION (7203)
  - BURNS, TREATMENT (7335)
  - CANCER, CHEMOTHERAPY (7379)
  - CANCER, CHYLOUS ASCITES (7750)
  - CANCER, DEVELOPMENT (7342)
  - CANCER, DIABETES MELLITUS (7383)
  - CANCER, ENDOSCOPY (7277)
  - CANCER, FLUORESCENCE, LAVAGE, CYTODIAGNOSIS (7534)*
  - CANCER, LIVER MORPHOLOGY (7340)
  - CANCER, MORTALITY (7380)
  - CANCER, PARTIAL RESECTION (7381)
  - CANCER, RESECTION (7382)
  - CANCER, X-RAY DIAGNOSIS (7267)
  - CARCINOGENESIS (7330)*
  - CARCINOGENESIS, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE (7328)*
  - CARCINOMA, DEATH (7377)
  - CARCINOMA, HISTOLOGY (7344)
  - CICATRISING LESIONS, CORROSIVE INGESTION, SURGERY (7357)
  - COLLAGENOLYTIC ACTIVITY, ULCER, CANCER (7346)
  - DISEASES, CYTOLOGY, DIAGNOSIS (7284)
  - DUMPING SYNDROME, RESECTION (7378)
  - DUODENUM, PEPTIC ULCER, BARIUM SULFATE (7253)
  - DUODENUM, SECRETION, ACID, SECRETIN (7195)*
  - DUPLICATION (7355)
  - EMPTYING, VAGOTOMY (7082)
  - ESOPHAGEAL JUNCTION, CARCINOMA, ESOPHAGOGASTROSTOMY (7360)
  - 5-HYDROXYTRYPTAMINE, ADRENAL HORMONE, BORDETELLA PERTUSSIS VACCINE (7200)
  - GASTRECTOMY, VAGUS PRESERVATION (7366)
  - GASTRECTOMY, GASTRO-DUODENAL ANASTOMOSIS (7341)
  - GASTRIN, ANTRUM, NEONATE (7093)*
  - GASTRITIS, GASTRIC SECRETION, PENTAGASTRIN (7327)*
  - GASTROSTOMY LEAKAGE, CHILDREN, TREATMENT (7362)
  - GLUCOCORTICOIDS, COLON, SMALL INTESTINE (7705)
  - HEMORRHAGE, ARTIFICIAL HYPOTENSION, BLOOD TRANSFUSION (7308)
  - HEMORRHAGE, ASPIRIN (7336)
  - HEMORRHAGE, PHEOCHROMOCYTOMA, CATECHOLAMINE SECRETION (7717)
  - HUNGER, MOTILITY, FOOD (7078)*
  - LESION, DUODENAL, HEMORRHAGE, PORTAL HYPERTENSION (7735)
  - LIPID ABSORPTION, LIPOLYSIS (7065)*
  - MAGNESIUM, PEPTAVLON, HISTAMINE (7094)*
  - MENETRIER'S DISEASE, GASTRITIS, RADIOLOGY (7348)
  - MOTILITY, PITUITARY CONTROL (7088)
  - MUCIN, HISTOCHEMISTRY (7036)*
  - MUCOSA, CHRONIC GASTRITIS, DIAGNOSIS (7264)
  - MUCOSA, IRON-DEFICIENCY ANEMIA (7329)*
  - MUCOSA, LIPASE, TRIGLYCERIDE (7027)*
  - PEPSIN, ENZYMATIC ACTIVITY, POLYVINYLPYRROLIDONE (7090)*
  - PEPTIC ACTIVITY, CARBENOXOLONE, GLYCYRRHETINIC ACID (7091)*
  - PEPTIC ULCER, GASTRIN, DUODENUM (7384)*
  - PHLEGMON (7365)
  - PLASMACYTOMA, SURGERY (7347)
  - POLYPOSIS (7337)
  - RESECTION, DUODENAL ULCER, HEMORRHAGE (7339)
  - RESECTION, METHYLURACIL, DOG (7350)
  - RESECTION, PEPTIC ULCER (7405)
  - SECRETION, ACID, HYPEROSMOLAL (7089)*
  - SECRETION, PEPSIN, PENTAGASTRIN, SECRETIN, CHOLECYSTOKININ (7092)*
  - SECRETION, PEPTIC ULCER (7396)
  - SECRETION, PEPTIC ULCER, CORTICOIDS (7099)
  - SECRETION, QUANTITATIVE DETERMINATION (7256)
  - SECRETION, SURGERY, ULCER (7254)
  - SECRETION, VISUAL DEPRIVATION, DOG (7100)
  - SMOOTH MUSCLE, MOTILITY, CAT (7084)
  - STRESS ULCER, DUODENUM (7393)
  - STUMP, GASTROJEJUNOPLASTY, INTESTINAL GRAFT (7338)
  - SURGICAL COMPLICATIONS, GERIATRICS (7367)
  - THORACIC, X-RAY (7288)
  - TRAUMA, DUODENAL RUPTURE (7364)
  - ULCER, ACID SECRETION (7268)
  - ULCER, COAGULOGRAM, THROMBOELASTOGRAM

(7403)
  ULCER, DUODENUM, CHRONIC PNEUMONIA (7410)
  ULCER, DUODENUM, GASTRIC SECRETION, SURGERY (7400)
  ULCER, DUODENUM, SURGERY (7390), (7401)
  ULCER, PHYTOBEZOAR (7411)
  ULCER, VAGOTOMY (7392), (7404)
  ULTRASTRUCTURE, ATROPHIC GASTRITIS, PERNICIOUS ANEMIA (7320)•
  WALL, OXYGEN TENSION, INTESTINE (7053)
STRESS
  ULCER, GASTRIC, DUODENAL (7393)
STRUCTURE
  SMALL INTESTINE, NEWBORN, POLYVINYLPYRROLIDONE (7067)•
SULFOBROMOPHTHALEIN
  METABOLISM, EXCRETION, GLUTATHIONE (7119)•
SURGERY
  ACUTE CHOLECYSTITIS, EARLY AND DELAYED SURGERY (7666)
  CARDIA, OBSTRUCTION (7299)
  CARDIA COMPETENCE, REFLUX ESOPHAGITIS (7306)
  CERVICAL ESOPHAGUS, RECONSTRUCTION (7305)
  CHOLECYSTOSTOMY, ACUTE CHOLECYSTITIS, GALLBLADDER NECROSIS (7673)
  CHOLEDOCHODUODENOSTOMY (7667)
  CIRRHOSIS, METABOLISM, WATER, ELECTROLYTE (7646)
  CIRRHOSIS, SODIUM, POTASSIUM (7645)
  COMPLEX RECTAL HERNIA, DIAGNOSIS (7462)
  COMPLICATION, BOWEL GAS EXPLOSION (7704)
  COMPLICATIONS, ASCARIASIS, CHILDREN (7761)
  COMPLICATIONS, STOMACH, GERIATRICS (7367)
  DUODENAL STUMP CLOSURE, OX, FASCIA (7358)
  DUODENAL ULCER (7389)
  ESOPHAGEAL REPLACEMENT, LEFT COLON (7311)
  ESOPHAGUS, HOMOGRAFT (7298)
  EXTRAHEPATIC BILIARY TRACT, OBSTRUCTION (7668)
  EXTRAPLEURAL TRANSDIAPHRAGMATIC, INTRAHEPATIC FOREIGN BODIES (7589)
  GALLBLADDER, CHOLELITHIASIS, DUODENUM ULCER (7669)
  GASTRIC BURNS, TREATMENT (7335)
  GASTRIC RESECTION, GASTROENTEROSTOMY MALIGNANT ULCER (7372)
  GASTRIC ULCER, PARENTERAL NUTRITION (7407)
  GASTROJEJUNAL AUTOPLASTY, JEJUNAL GRAFT, SECRETION (7376)
  GASTROJEJUNOPLASTY, INTESTINAL GRAFT, GASTRIC STUMP (7338)
  HEMIGASTRECTOMY, VAGOTOMY, ULCER, DUMPING SYNDROME (7353)
  INTESTINE, END-TO-END SUTURE (7746)
  JEJUNUM INTERPOSITION, PEPTIC ESOPHAGITIS, CARDIO SPASM (7296)•
  LIVER, AMEBIC ABSCESS (7770)
  OBSTRUCTIVE JAUNDICE, LIVER FUNCTION (7674)
  OPISTHORCHOSIS, LIVER, PERITONITIS (7754)
  PARTIAL GASTRECTOMY, GASTRIC FUNCTION, MORPHOLOGY, ULCER (7391)
  PELVIC FISTULAE, NONSUTURE REPAIR, COLON, RECTUM (7477)
  RADICAL, STOMACH, PLASMACYTOMA (7347)
  RECONSTRUCTION, ESOPHAGUS, HYPOPHARYNX CORROSIVE OBLITERATION (7308)
  RECTAL PROLAPSE, ETIOLOGY (7474)
  RECTUM, CANCER (7494)
  ROUX-EN-Y JEJUNAL LOOP, HEPATOBILIARY TRACT DISEASES, CHRONIC PANCREATITIS (7654)•
  SEPTIC SHOCK, LIVER METABOLISM (7415)
  SPHINCTEROPLASTY, DISTAL PANCREATIC DUCT, INFLAMMATION (7516)
  SPHINCTEROTOMY, FISSURE-IN-ANO (7478)
  ULCER, GASTRIC, DUODENAL, GASTRIC SECRETION (7400)
  ULCER, GASTRIC, DUODENAL, HEMORRHAGE (7702)
  VEGETATIVE NERVOUS SYSTEM, CHRONIC PANCREATITIS (7523)
SYNDROME
  BARRETT'S, ESOPHAGEAL ULCERATION (7301)
  CELIAC, GLUTENENTEROPATHY (7437)•
  DUBIN-JOHNSON, HEPATITIS, CHOLECYSTITIS, CHOLELITHIASIS (7739)
  DUMPING, GASTRECTOMY, GASTRIC BIOPSY, GASTROSCOPY (7369)
  DUMPING, STOMACH, RESECTION (7378)
  GILBERT'S, ALKAPTONURIA, LIVER, ENZYME (7562)
  HEPATORENAL, EXPERIMENTAL (7573)
  HUNTER'S, MUAPOLYSACCHARIDOSIS, LARGE INTESTINE (7453)•
  INTESTINAL KNOT, COMPOUND VOLVULUS (7696)
  KLIPPEL-TRENAUNAY, OMENTAL HEMANGIOMA, HEMORRHAGE (7700)
  MALABSORPTION, SMALL INTESTINE (7442)
  MALIGNANT CELIAC, MALABSORPTION, INTESTINAL LYMPHOMA (7447)
  PORTAL HYPERTENSION, SCHISTOSOMIASIS (7764)
  ZELLWEGER'S, CEREBRO-HEPATO-RENAL (7566)
  ZOLLINGER-ELLISON, TUMOR, PANCREAS (7747)
THERAPY
  ACUTE DYSENTERY, ANTIBIOTICS (7711)
  BARIUM SULFATE, PEPTIC ULCER, STOMACH, DUODENUM (7253)
  CHEMO-, GASTRIC CANCER (7379)
  CHEMO-, LUCANTHONE HYDROCHLORIDE, BILHARZIASIS (7767)
  CHLOROXYL, OPISTHORCHOSIS(7766)
  CORTICOSTEROID, VIRAL HEPATITIS (7619)
  HYPNO-, ULCERATIVE COLITIS (7502)
  SULPIRIDE, GASTROINTESTINAL DISEASES (7325)•
  SULPIRIDE, PEPTIC ULCER, SIDE EFFECTS (7395)

  - SULPIRIDE, ULCERATIVE COLITIS, CROHN'S DISEASE (7500)*
  - VIRAL HEPATITIS, CLINICAL FEATURES, PROPHYLAXIS (7608)
  - VIRAL HEPATITIS, GLUCOCORTICOID METABOLISM (7617)
  - VIRAL HEPATITIS, PREGNANCY (7618)
  - XYLAMIDE, GASTRIC ULCER, GASTRODUODENITIS (7387)*
- THIOLS
  - CHOLESTEROL SYNTHESIS, LIVER (7141)*
- THROMBOSIS
  - MESENTERIC VEIN, HEMODYNAMICS (7692)
- TOXICITY
  - BILIRUBIN, DISTRIBUTION, ALBUMIN (7072)
  - DDT, METABOLITES, LIVER, THERAPY (7584)
  - SALMONELLA ENTERITIDIS (7551)
- TOXIN
  - AFLA-, LIVER, RNA (7171)
- TRACER TECHNIQUE
  - POLYVINYLPYRROLIDONE, MOLECULAR WEIGHT INTESTINAL PERMEABILITY (7058)*
- TRANSPLANT
  - LIVER, BLEEDING (7552)
  - SMALL INTESTINE, ESOPHAGOPLASTY, CIRCULATION (7317)
- TRANSPORT
  - AMINO ACID, HEPATOMA CELL CULTURES, TYROSINE, AMINOTRANSFERASE (7114)*
  - CALCIUM, NEPHRECTOMY, VITAMIN D-DEFICIENCY (7059)*
  - CITRATE, MITOCHONDRIA, FATTY ACID SYNTHESIS (7106)*
  - PENICILLAMINE, ISOMERS, SMALL INTESTINE (7056)*
- TRAUMA
  - ABDOMEN, DIAGNOSIS, THERAPY (7255)
  - ABDOMINAL, MECKEL'S DIVERTICULUM (7417)
  - INTRAMURAL HEMATOMA, DUODENUM (7343)
  - LIVER, MORTALITY, HEMORRHAGE (7591)
  - LIVER, PULMONARY COMPLICATIONS (7588)
  - LIVER, RIGHT HEPATIC LOBECTOMY (7555)
  - LIVER, SERUM GLYCOPROTEIN (7551)
  - STOMACH, DUODENAL RUPTURE (7364)
- TRYPSIN
  - INHIBITOR, PANCREAS, DOG (7102)
- TUMOR
  - ASCITES, GLYCOGEN SYNTHETASE ACTIVITY, ALKYLATING AGENTS (7173)
  - ASCITES CELLS, GLYCOGEN PHOSPHORYLASE, ALKYLATING AGENTS (7172)
  - ASCITES HEPATOMA, TRANSPLANTED, BLOOD COMPONENTS (7559)
  - BENIGN, ESOPHAGUS (7314)
  - BENIGN, MALIGNANT, DUODENUM (7269)
  - CARCINOID, APPENDIX (7479)
  - CELLS, METASTASIS, LIVER (7558)
  - EHRLICH-LETTRE ASCITES, LACTATE DEHYDROGENASE (7041)
  - EPITHELIAL HEPATOBLASTOMA, HEMIHYPERTROPHY (7561)
  - GIANT HEMANGIOMA, LIVER, SURGERY (7569)
  - HEMIANGIOPERICYTOMA (7423)
  - HEPATIC FERRITIN (7166)
  - HEPATOBLASTOMA, HEPATOCARCINOMA (7556)
  - INFLAMMATORY, ILEOCECUM (7733)
  - INTESTINAL LYMPHOMA, MALIGNANT CELIAC SYNDROME (7447)
  - LEIOMYOSARCOMA, MECKEL'S DIVERTICULUM (7418)
  - LIVER, HEPATIC ARTERY LIGATION (7571)
  - MALIGNANT, CHYLOUS ASCITES, LIVER, STOMACH (7750)
  - MALIGNANT, PANCREAS, CHILDREN (7506)
  - MESENCHYMOMA, CECUM (7465)
  - MORRIS HEPATOMA, HISTONE, TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE (7537)*
  - MYOSARCOMA, JEJUNUM (7425)
  - NOVIKOFF HEPATOMA, RNA TURNOVER, DEOXYTHYMIDINE KINASE (7117)*
  - PANCREAS, DIAGNOSIS (7241)
  - PANCREAS, ZOLLINGER-ELLISON SYNDROME (7747)
  - PHEOCHROMOCYTOMA, GASTRIC HEMORRHAGE, CATECHOLAMINE SECRETION (7717)
  - PLASMACYTOMA, STOMACH, SURGERY (7347)
  - PRESACRAL, RADIOLOGY, CHILDREN (7489)
  - PRIMARY MALIGNANT, ILEUM, JEJUNUM (7701)
  - RHODAMINE SARCOMA, LIVER ENZYMES (7042)
  - STOMACH, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE, ADENOCARCINOMA (7328)*
  - SUBCUTANEOUS HEPATOMA, METASTASES (7560)
- TYPHOID FEVER
  - VACCINATION, IMMUNOLOGY, RABBIT (7205)
- ULCER
  - ACUTE, STOMACH, EROSIONS, SPINAL CORD DISEASE (7332)
  - BENIGN, SMALL INTESTINE (7424)
  - CORTICOSTEROIDS, SULPIRIDE, NEUROSURGICAL RESUSCITATION (7349)
  - DUODENAL, GASTRIC RESECTION, HEMORRHAGE (7339)
  - DUODENAL, SURGERY (7388)
  - DUODENAL, VAGOTOMY (7402)
  - DUODENUM, GASTRIC SECRETION, DIAGNOSIS (7226)
  - DUODENUM, STOMACH, GASTRIC JUICE, HEMATOPOIESIS (7409)
  - DUODENUM, SURGERY (7389)
  - ESOPHAGUS, COLUMNAR EPITHELIUM, BARRETT'S SYNDROME (7301)
  - GASTRIC, ACID SECRETION (7268)
  - GASTRIC, COAGULOGRAM, THROMBOELASTOGRAM (7403)
  - GASTRIC, DUODENAL, SECRETION, SURGERY (7400)
  - GASTRIC, DUODENAL, SURGERY (7390)
  - GASTRIC, DUODENAL, UPPER GASTROINTESTINAL TRACT, HEMORRHAGE (7702)
  - GASTRIC, SECRETION, CORTICOIDS (7099)
  - GASTRIC, SECRETION, SURGERY (7254)
  - GASTRIC, VAGOTOMY (7392)
  - GASTRIC, SURGERY, PARENTERAL NUTRITION (7407)
  - GASTRIC, SYRINGOMYELIA, LIVER FUNCTION (7548)
  - GASTRIC, XYLAMIDE, MUCOSA, GASTRO-

DUODENITIS (7387)•
PEPTIC, AUTOPLASTIC ESOPHAGUS (7318)
PEPTIC, DIAGNOSIS, CHILDREN (7406)
PEPTIC, DUODENAL MUCOSA, MUCOPOLYSACCHARIDES (7394)
PEPTIC, DUODENUM, CHRONIC RENAL INSUFFICIENCY (7398)
PEPTIC, GASTRIC SECRETION (7396), (7405)
PEPTIC, GASTRIN, GASTRIC, DUODENAL (7384)•
PEPTIC, GASTRODUODENAL, INCIDENCE, ALTITUDE (7385)•
PEPTIC, PATHOGENESIS, GENETIC FACTOR (7399)
PEPTIC, PERFORATION, DIAGNOSIS TREATMENT (7408)
PEPTIC, PH, FECES (7680)•
PEPTIC, SURGERY, STOMACH, DUODENUM (7401)
PEPTIC, THERAPY, SULPIRIDE (7395)
PEPTIC, VAGOTOMY (7404)
PERFORATION, PERITONITIS (7165)
STOMACH, DUODENUM, CHRONIC PNEUMONIA (7410)
STOMACH, PHYTOBEZOAR (7411)
STRESS, GASTRIC, DUODENAL (7393)

LCERATIVE COLITIS
ANKYLOSIS, SPONDYLITIS, INFLAMMATION (7498)•
COLON, DILATION, CROHN'S DISEASE (7430)•
CROHN'S DISEASE, THERAPY, SULPIRIDE (7500)•
THERAPY, ANABOLIC, STEROID HORMONES (7501)

LTRASTRUCTURE
CITRATE TRANSPORT, FATTY ACID SYNTHESIS, ADIPOSE TISSUE (7106)•
COLON, CARCINOEMBRYONIC, ANTIGEN LOCALIZATION (7456)•
LIVER, FUNCTION, PYRAZOLE (7125)•
LIVER MICROSOMES, NUCLEOPROTEIN FRACTION (7048)
LIVER MICROSOME, STEAROYL-COA DESATURASE (7040)
LIVER NUCLEI, HISTONE-SPECIFIC TRANSACETYLASES (7051)
LYSOSOMAL PROTEASES, PANCREATITIS (7512)
MITOCHONDRIA, LIVER, COLD EXPOSURE, UBIQUINONE (7185)
MITOCHONDRIA, LIVER, 2,4-DINITROPHENOL (7186)
MITOCHONDRIAL PROTEIN, LIVER, CYCLOHEXIMIDE (7152)•
MUCOSA, ATROPHIC GASTRITIS, PERNICIOUS ANEMIA (7320)•
SMALL INTESTINE, CONVOLUTED MUCOSA, FLAT MUCOSA (7440)•
SMALL INTESTINE, MUCOSA, CHRONIC ENTEROCOLITIS (7496)
SMALL INTESTINE MUCOSA, BIOPSY, AUTOLYSED SPECIMENS (7034)•

UREMIA
NEPHRECTOMY, CALCIUM, VITAMIN D-DEFICIENCY (7059)•

VARICES
ESOPHAGUS, PORTAL VEIN, MORPHOLOGY, PORTAL HYPERTENSION (7540)
ESOPHAGUS, STOMACH, CIRRHOSIS, HEMORRHAGE (7639)

VIBRIO
PARAHAEMOLYTICUS, ANTIGENIC SCHEMA, EPIDEMIOLOGY (7699)
PARAHAEMOLYTICUS, DIARRHEA (7737)

VILLI
SMALL INTESTINE, EPITHELIUM, UPTAKE, POLYVINYLPYRROLIDONE (7067)•

VIRUS
HERPES SIMPLEX, COXSACKIE VIRUS B5, HEPATITIS (7610)

VITAMIN
B6, PHOSPHOLIPID, LIVER (7176)
B12, ABSORPTION, PERNICIOUS ANEMIA, ACHLORHYDRIA (7275)
B12, MALABSORPTION, POTASSIUM CHLORIDE THERAPY (7444)
D, MALABSORPTION, RENAL DISEASE, ACIDOSIS, PARATHORMONE (7430)•
HYPOVITAMINOSIS A, INTESTINAL INFECTIONS (7765)
PROTEIN PROFILE, CC14, LIVER, NUCLEIC ACIDS (7112)•
RIBOFLAVIN, ABSORPTION, EXCRETION, SMALL INTESTINE (7068)•
RIBOFLAVIN, THYROID, MITOCHONDRIA, ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE (7178)
RIBOFLAVIN SYNTHESIS, INTESTINE, 7-CHLORO-8-METHYL-FLAVIN (7197)•

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

6.305
A

Vet Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

[illegible]
DD

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

NOVEMBER 1970
VOLUME 5, NO. 11
7771–8501

Volume 5, No. 11

Abstract and Citation Nos. 7771-8501

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed

by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager

Contract Number NIH-70-2040
with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metabolic Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversity of publications in the area of gastroenterology makes it imperative that an appropriate service be available to investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and comments for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and author indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

CONTENTS

	Cross Reference Abbreviations	Abstracts, Citations	Page
PRE-CLINICAL SCIENCES			
Morphology, Cellular Structure and Histochemistry	(P:Morph)	7771-7824	801
Absorption—Excretion—Transport	(P:Absorp)	7825-7851	809
Motility	(P:Motil)	7852-7858	812
Secretion and Metabolism	(P:Secr)		
Stomach	(P:Secr:Stom)	7859-7876	814
Pancreas	(P:Secr:Panc)	7877-7882	816
Hepatobiliary Tract	(P:Secr:Hepatobil)	7883-7981	817
Intestine	(P:Secr:Int)	7982-7990	830
General	(P:Gen)	7991-8002	832
DIAGNOSTIC PROCEDURES	(Diagproc)	8003-8054	834
GASTROINTESTINAL DISEASES			
Esophagus	(D:Esoph)	8055-8085	838
Stomach and Duodenum	(D:Stomduo)	8086-8130	839
Peptic Ulcers	(D:Stomduo:Peptulc)	8131-8141	843
Small Intestine	(D:S.Intest)	8142-8155	844
Regional Enteritis	(D:S.Intest:Regent)	8156-8164	845
Malabsorption	(D:S.Intest:Malabs)	8165-8179	846
Large Intestine	(D:L.Intest)	8180-8210	847
Ulcerative Colitis	(D:L.Intest:Ulccol)	8211-8218	849
Granulomatous Colitis	(D:L.Intest:Grancol)	8219-8225	850
Pancreas	(D:Pancreas)	8226-8242	851
Pancreatitis	(D:Pancreas:Pancreat)	8243-8261	852
Liver and Biliary Tract	(D:Livbil)	8262-8315	853
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	8316-8345	858
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	8346-8363	862
Chronic Hepatitis	(D:Livbil:C.Hep)	8364-8368	864
Cirrhosis	(D:Livbil:Cirrh)	8369-8394	865
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	8395-8419	867
General	(D:Gen)	8420-8484	870
Parasitology	(D:Gen:Parasit)	8485-8501	874
AUTHOR INDEX			
SUBJECT INDEX			

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. For journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medical Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans	It.	Italian
Ar.	Arabic	Jap.	Japanese
Bul.	Bulgarian	Kor.	Korean
Ch.	Chinese	Latv.	Latvian
Cz.	Czech	Lith.	Lithuanian
Dan.	Danish	Nor.	Norwegian
Dut.	Dutch	Pol.	Polish
E.	English	Por.	Portuguese
Eston.	Estonian	Rum.	Rumanian
Fin.	Finnish	Rus.	Russian
Fl.	Flemish	Ser.	Serbo-Croatian
Fr.	French	Sl.	Slovak
Ger.	German	Sp.	Spanish
Gr.	Greek	Sw.	Swedish
Heb.	Hebrew	Th.	Thai
Hun.	Hungarian	Turk.	Turkish
Ic.	Icelandic	Uk.	Ukrainian
In.	Indonesian	Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
μg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD_{50}	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
μM	micromolar
mC,μC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transaminase
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

7771 FREE LYSINE COMPARTMENTS IN RAT LIVER CELLS.

(E.) Portugal, F. H. (Natl. Inst. Hlth., Bethesda, Md.), D. H. Elwyn and H. Jeffay. *Biochim Biophys Acta* 215(2):339-347, 1970.

The distribution and metabolism of lysine in rat liver nuclear, mitochondrial, microsomal, and cytoplasmic fractions were studied, and the distribution and amount of free lysine in each pool were determined. Rats were also infused with ^{14}C-lysine for up to 180 min *in vivo*, and the specific activity of lysine in each cell fraction was determined by column chromatography. The amount of lysine in the mitochondria and other cell organelles (0.02-0.03 μmole/g liver) was considerably less than in the cytoplasm (0.32 μmole/g liver). The free lysine in the particles was not completely exchangeable with the cytoplasmic lysine; the intramitochondrial free lysine specific activity after 60 min of infusion was only about 60% of the specific activity for cytoplasmic lysine. An apparent division of the total lysine pool of the tissue into at least two smaller compartments, one in the cytoplasm and another in the mitochondrial fraction, seems to exist in rat liver cells.

7772 FURTHER OBSERVATIONS ON THE PRINCIPAL GLYCOPROTEIN OF THE GASTRIC SECRETION.

(E.) Schrager, J. (Roy. Albert Edward Infirm., Wigan, Lancashire, England) and M. D. C. Oates. *Digestion* 3(4):231-242, 1970.

A study of the carbohydrate composition of the gastric glycoprotein constituting the non-retarded fraction of gastric secretion eluted on Bio-gel P150 was made on 53 individual gastric aspirations. The carbohydrate component was common to all glycoproteins of the non-retarded fraction showing the following quantitative relationship: galactose/glucosamine/galactosamine = 4/3/1 (molar ratios). The basic structure of the side chains was made up of 4 repeating disaccharide units, each unit being composed of a galactose and an N-acetyl hexosamine. The hexosamine in 3 units was a galactosamine and the hexosamine in the unit nearest to the protein core was a galactosamine. Superimposed on the common basic structure were terminal sugar residues which divided the investigated glycoprotein into distinctive groups endowing them with blood group specificity. Among other distinguishing features of this glycoprotein were a high carbohydrate content (80-85%), the presence of galactosamine and lack of mannose, a characteristic amino-acid composition with quantitative relationships between galactosamine, threonine and serine.

7773 LIVER ULTRASTRUCTURE AND RNA LABELING AFTER PARTIAL HEPATECTOMY IN PROTEIN-FED AND PROTEIN-DEPRIVED RATS.

(E.) Stenram, U. (Dept. Path., U. Uppsala, Sweden), H. Nordgren and R. Willen. *Virchows Arch Zellpath* 6(1):12-23, 1970.

Ultrastructural changes and RNA labeling after partial hepatectomy (sham-operated controls) were studied in rats which were pair-fed on a protein-free or a 25% casein diet for 14 days prior to surgery. Both dietary groups of hepatectomized rats showed about the same degree of regeneration of rough-surfaced endoplasmic reticulum and polysomes, and the same enlargement of nucleoli; the nucleoli of the regenerating livers of protein-deprived rats often showed an increase in the granular component. The RNA labeling after cytidine-^3H administration, studied by radioautography and by polyacrylamide-agarose gel electrophoresis of total liver and a cytoplasmic fraction, was heavier in all parts of the liver cell in protein-deprived rats as compared to protein-fed rats and heavier in hepatectomized than in sham-operated rats. No delay in the appearance of 29 and 18S ribosomal RNA in the cytoplasm in protein-deprived and hepatectomized rats was seen. The protein-deprived rats apparently have a good ability to regenerate liver cell structures after partial hepatectomy, and their enlarged liver cell nucleoli have a high synthesis of RNA, and the processing and delivering of nucleolar RNA to the cytoplasm proceeds in a normal way.

7774 IMMUNOCHEMICAL CHARACTERIZATION OF SUBMICROSOMAL RAT LIVER ESTERASES.

(E.) Raftell, M. (Wenner-Gren Inst., Stockholm, Sweden) and C. Powell. *Immunochemistry* 7(7):619-626, 1970.

For characterization of antigens with nonspecific esterase activity present in rat liver microsomes antigens from 3 submicrosomal rat liver fractions (R, Sa and Sb) were investigated for esterase activity in immunoelectrophoretic experiments with rabbit antisera against each of the subfractions. The esterases were further classified as carboxyl-, aryl-, acetyl- or choline esterases by their sensitivity to inhibition by 10^{-3}-$10^{-4}M$ DFP (diisopropylfluorophosphate), $10^{-4}M$ eserine, 10^{-2}-$10^{-4}M$ PCMB (p-chloromercuribenzoate), heat and 10 *M* urea. The fractions R and Sa contained at lease 3 acetyl esterases and 5 carboxylesterases, while only 1 acetyl esterase and 2 carboxyl esterases were detected in the Sb fraction; no aryl- or choline esterases were found in any of the fractions. Liver microsomes were shown to have one carboxyl esterase in common with kidney microsomes and one acetyl esterase in common with testes microsomes. Short chain fatty acids were more easily attacked by the esterases of liver microsomes than long chain fatty acids. The activity of one esterase active antigen classified as carboxyl esterase and occurring in three variants of identical electrophoretic mobility, was strongly increased in the R and Sa membranes by phenobarbital treatment; in the Sb membranes, this antigen was entirely missing. Two of the variants were also shown to be present in kidney microsomes where phenobarbital did not provoke any enhancement, which suggests that the enhancement seen in liver microsomes of phenobarbital-treated rats reflects a step in drug detoxification.

7775 POLARIZATION OF MITOCHONDRIA IN THE ABSORPTIVE CELLS OF THE SMALL INTESTINE OF SUCKLING RATS: LIGHT AND ELECTRON MICROSCOPY STUDY.

(E.) Gonzalez-Licea, A. (Natl. Med. Ctr., I.M.S.S., Mexico City, Mexico). *Lab Invest* 23(2):163-167, 1970.

Differences in the location and in the internal structure of mitochondria in the absorptive cells of the small intestine of suckling rats, fasted suckling rats, and fetuses were described. Only 4% of the mitochondria of the suckling rats were found in the upper half of the absorptive cell compared to the 97% found in the fetus and fasted rats. The mitochondria of the suckling rats were rod-shaped and contained numerous cristae arranged perpendicularly to the long axis of the cell; in the fasted suckling rats the mitochondria were also rod-shaped but slightly longer than those of the suckling rat and contained less cristae, often situated parallel to the long axis, and the mitochondrial matrix was less dense; the mitochondria of the fetus were either round or rod-shaped, contained very few cristae arranged perpendicularly to the long axis, and had a pale matrix. The displacement and intramitochondrial changes in the intestinal cells of suckling animals may be indicative of the amount of metabolic activity occurring, possibly due to the extraction of milk components from the absorptive cells of the jejunum.

7776 LIVER UDP-GLUCURONIC ACID PYROPHOSPHATASE ACTIVITY DURING DEVELOPMENT. *(Ger.)*

Schroter, W. (U. Child. Clin. Hamburg, Germany). *Z Kinderheilk* 108(2):93-102, 1970.

Activity of UDP-glucuronic pyrophosphatase was determined in liver microsomal suspensions from guinea pigs and rats. Activity related to microsomal protein content of new born (1-day-old) guinea pigs was 10% of that of adult animals; enzyme activity of newborn (4- and 7-day-old) rats was 20% that of adult rats. Activity of microsomal preparations kept at -16°C remained stable for 7 days, and then declined slowly. This reduction was not related to the earlier decline of glucuronyl transferase activity during cold storage. The activation of glucuronyl transferase by ATP seems not to be related to inhibition of UDP-glucuronic acid hydrolysis by UDP-glucuronic pyrophosphatase.

7777 HISTOCHEMICAL DEMONSTRATION OF HYDROCHLORIC ACID IN THE GASTRIC TUBULES OF TELEOSTS USING AN *IN VIVO* PRUSSIAN BLUE TECHNIQUE.

(E.) Western, J.R.H. (Dept. Zool., U. Leeds, England) and J. B. Jennings. *Comp Biochem Physiol* 35(4):879-884, 1970.

A mixture of potassium ferrocyanide and ferric ammonium citrate (Prussian blue reaction) was incorporated into a semisolid meal and introduced into the stomachs of the *Cottus gobio*, *Enophrys bubalis*, and *Salmo trutta* through polyethylene tubes as a histochemical technique for the *in vivo* demonstration of gastric hydrochloric acid secretion in teleosts. One hr after administration of the test meal, a precipitate of Prussian blue appeared in some of the gastric glands, and the number of glands containing precipitate and the quantity of precipitate increased with time (the anterior esophagus, which has no gastric glands, showed no blue coloration). Between 24 and 36 hr after feeding, small amounts of precipitate were evident in the pyloric region of the stomach, the intestine, and the rectum, but since these quantities did not increase with time, the precipitate must have originated solely in the gastric glands and was being passively transported along the gut. Since intracellular precipitation of Prussian blue was not observed, although the precipitate was observed in the deepest portions of the gastric tubules, the acid responsible for the precipitate was produced only by these lining cells; both gastric hydrochloric acid and pepsinogen apparently are produced by the same cell in teleosts.

7778 A QUANTITATIVE DESCRIPTION OF THE INTESTINAL EPITHELIUM OF THE MOUSE. *(E.)*

Hagemann, R. F. (Allegheny Gen. Hosp., Pittsburgh, Pa.), C. P. Sigdestad and S. Lesher. *Amer J Anat* 129(1):41-51, 1970.

The use of combined cell kinetic, tritiated thymidine labeling and liquid scintillation counting techniques has permitted quantitation of several intestinal epithelial cell parameters in C57Bl/6 mice. Crypts/mg wet weight of intestine numbered 855 in the duodenum, 892 in the jejunum and 1164 in the ileum. Crypts were subdivided into proliferative cells and the following values were obtained: 1.6×10^5, 1.6×10^5 and 1.7×10^5/mg for duodenum, jejunum and ileum, resp., and for nonproliferative cells, 1.1×10^5, 1.1×10^5 and 1.2×10^5/mg, resp. A cell cycle analysis permitted the proliferative cells to be further subdivided, and the numbers of cells in each stage were determined. Division of the total number of proliferative cells by the mean cell generation time provided a value of 1.4×10^7 cells/hr for the cell production rate in the entire intestine; division of cell production rate/mg by crypt/mg gave values for cell production rate/crypt of 15.2 cells/crypt/hr, 14.6 and 11.2 for duodenum, jejunum and ileum, resp. Epithelial cells per jejunal villus numbered 3025, and there were 3.1×10^5 villous epithelial cells/mg jejunum. Values of 102 villi/mg and 8.7 crypts/villus were calculated for the jejunum.

7779 DETERMINATION OF BILIRUBIN UDP-GLUCURONYL TRANSFERASE ACTIVITY IN NEEDLE-BIOPSY SPECIMENS OF HUMAN LIVER. *(E.)*

Black, M. (Roy. Free Hosp., London, England), B. H. Billing and K. P. M. Heirwegh. *Clin Chim Acta* 29(1):27-35, 1970.

Bilirubin UDP-glucuronyl transferase activity and properties were determined in needle-biopsy specimens of human liver. Hepatic bilirubin UDP-glucuronyl transferase activities in rats and in patients with normal livers were comparable (mean: 1.5 and 1.0 mg/g liver/hr, resp.). The amount of bilirubin conjugated in periods of incubation ranging from 10-60 min followed first-order kinetics for up to 40 min and was linear with increased enzyme concentration. The optimal substrate concentration (UDP-glucuronic acid) was 1.67 μmoles in the presence of 5 mM Mg^{+2}. The optimum pH of 7.4 for human tissue differed from that of rat tissue which was nearer 7.7. A 4-fold increase in enzyme activity was seen with the addition of 1-2% digitonin. Chromatograms of the reaction products were compared with those prepared from diazotized human bile, and the development of azopigment G, which is the dominant glucuronide pigment in human bile, was confirmed.

7780 THE DEVELOPMENT OF THE DORSAL AND VENTRAL MAMMALIAN PANCREAS *IN VIVO* AND *IN VITRO*.

(E.) Spooner, B. S. (Dept. Biol. Sci., Stanford U., Calif.), B. T. Walther and W. J. Rutter. *J Cell Biol* 47(1):235-246, 1970.

The origin, morphogenesis and biochemical differentiation of the dorsal and ventral pancreas of the developing rat embryo were studied in organ cultures from trypsin-isolated whole gut endoderm. The ventral pancreatic diverticulum first appeared at 30 somite stage at the beginning of the 12th day of gestation while the dorsal diverticulum appeared midway through the 11th day of gestation in the 22-25 somite stage. Both pancreatic diverticula originated from the endoderm just posterior to the presumptive stomach, one appearing on the dorsal surface and the other on the ventral surface (the observations were confirmed in culture from whole guts taken from 11-day embryos). Initially, the ventral pancreas was smaller and began lobulation 12-24 hr later than the dorsal pancreas. Fusion between lobes began on day 16 *in vivo* and was fairly extensive by day 18 (fusion did not occur *in vitro*). When whole guts from embryos as young as 12 somites were grown in organ culture, both dorsal and ventral pancreas developed and eventually acquired levels of amylase corresponding to the differentiated state. *In vivo* analyses of the developmental profiles of carboxypeptidases A and B, amylase, chymotrypsin, ribonuclease and insulin revealed identical accumulation curves for the dorsal and ventral pancreas, but the glucagon-specific activity in the dorsal pancreas was five-to six-fold higher than that in the ventral pancreas.

7781 THE MOLECULAR SPECIES OF RAT LIVER PHOSPHATIDYLINOSITOL.

(E.) Akino, T. (Sapporo Med. Coll., Japan), H. Kanoh and T. Shimojo. *Tohoku J Exp Med* 101(3):289-297, 1970.

Phosphatidylinositol isolated from rat liver by DEAE-cellulose column and thin layer chromatography was fractionated into its molecular species (with different degrees of fatty acid unsaturation) before and after acetolysis. Both methods of fractionation yielded similar results: the tetraenoic species (stearoyl-arachidonyl type) was quantitatively dominant (86.8 to 89.7% of total phosphatidylinositol) and the dienoic species (stearoyl-linoleoyl type) was a minor component (8.0 to 9.6%). *In vivo* (1 mC ^{3}H-glycerol i.p.) and *in vitro* 10 μC ^{14}C-glycerol and 1 mC ^{32}P) incorporation studies revealed that the glycerol and phosphate moieties of phosphatidylinositol have the same metabolic behavior and although the tetraenoic species was present in such large amounts, it showed the least metabolic reactivity.

7782 SUBFRACTIONATION OF SMOOTH MICROSOMES FROM RAT LIVER.

(E.) Glaumann, H. (Karolinska Inst., Stockholm, Sweden) and G. Dallner. *J Cell Biol* 47(1):34-48, 1970.

Total smooth microsomes from rat liver isolated on a Cs$^+$-containing sucrose gradient were concentrated and subsequently fractionated by zone centrifugation on a stabilizing sucrose gradient. The median equilibrium density of the various smooth microsomal vesicles ranged from 1.10 to 1.18. The phospholipid/protein ratio was identical in all subfractions, but cholesterol, on a phospholipid basis, was enriched in the subfractions with the highest sedimentation velocity. The enzyme distribution pattern revealed a pronounced heterogeneity; a number of NADH- and NADPH-oxidizing enzymes were concentrated in the upper part of the gradient and exhibited a certain degree of separation from G-6-Pase; Mg^{++} ATPase and AMPase were enriched in the lower part of the gradient. No specific enrichment of newly synthesized NADPH-cytochrome *c* reductase activity occurred in any of the subfractions after phenobarbital treatment. Smooth microsomes, by adequate fractionation procedure, can be separated into subfractions of heterogeneous composition.

7783 PARTIAL PURIFICATION AND KINETICS OF ESTRIOL 16α-GLUCURONYLTRANFERASE FROM THE CYTOSOL FRACTION OF HUMAN LIVER.

(E.) Rao, G. S. (Inst. Clin. Biochem., U. Bonn, Germany), M. L. Rao and H. Breuer. *Biochem J* 118(4):625-634, 1970.

An enzyme (estriol 16α-glucuronyltransferase) that conjugates the 16α-hydroxy group of estriol with glucuronic acid was purified 100-fold from human liver by 0-30% saturation of the cytosolic fraction with ammonium sulfate followed by filtration of the precipitate through Sephadex G-200. The product of the reaction, estriol 16α-monoglucuronide, was identified by paper chromatography and by crystallization of the radioactive product to constant specific radioactivity. The optimum reaction temperature was 37°C, and the activation energy was calculated to be 11.1 kcal/mole; the apparent Michaelis-Menten constants for estriol and UDP-glucuronic acid were 13.3 and 100 μM, resp. Cu^{2+}, Zn^{2+} and Hg^{2+} inhibited, whereas Mg^{2+}, Mn^{2+} and Fe^{2+} stimulated the enzyme. Substrate-specificity studies indicated that the amount of estradiol-17β, estradiol-17α and estrone conjugated was not more than about 5% of that found for estriol. Estriol 16α-monoglucuronide, a product of the reaction, did not inhibit the 16α-estriol glucuronyltransferase, whereas UDP, another product of the reaction, inhibited the enzyme competitively with respect to UDP-glucuronic acid as the substrate and non-competitively with respect to estriol as the substrate. 17-Epiestriol acted as a competitive inhibitor and 16-epiestriol and 5α-pregnane-3α-diol as non-competitive inhibitors of the glucuronidation of estriol.

7784 ELECTRON MICROSCOPIC OBSERVATIONS ON THE LARGE SUBUNIT OF THE RAT LIVER RIBOSOME. *(E.)* Haga, J.Y. (Sloan-Kettering Inst. Cancer Res., New York, N.Y.), M.G. Hamilton and M.L. Petermann. *J Cell Biol* 47(1):211-221, 1970.

Active large subunits (59S) obtained by urea treatment of rat liver ribosomes were compared (uranyl-oxalate negative stain or shadow cast electron microscopy) with large subunits in intact ribosomes and with the subunits (50S) obtained by EDTA treatment. The negatively stained 59S subunits had a slightly ovoidal form; their average dimensions, 244 ± 17 X 207 ± 18 Å, were very close to the dimensions of the large subunits in intact ribosomes, and lay between the theoretical dimensions for anhydrous and fully hydrated particles that were calculated from the physical properties of the subunits in solution. The shadowcast preparations showed particles of similar shape. The 50S subunits, which had lost their 5S RNA, were shadow-cast at the same time and they appeared to be more spread out than the 59S subunits and had threadlike extensions. In the positively stained regions of uranyl oxalate-stained preparations the 50S particles varied greatly in shape and size, with average dimensions of 330 ± 21 X 276 ± 33 Å, and showed thread-like extensions like those of the shadow-cast particles. The frictional drag of these extensions probably accounts for the low sedimentation coefficient of 50S particles in solution.

7785 BIOCHEMICAL CHARACTERIZATION OF GASTROFERRIN. *(E.)* Saltman, P. (Dept. Biochem., U. California, San Diego), J.S. Multani, C.P. Cepurneek and P.S. Davis. *Biochemistry* 9(20):3970-3976, 1970.

Gastroferrin, a glycoprotein of human gastric juice, has been purified from human gastric juice and physically and chemically characterized. Gastroferrin migrated as a single peak in the analytical ultracentrifuge, but it was fractionated using DEAE-cellulose chromatography into several macromolecular species which appeared to differ only in their sialic acid content. Gastroferrin bound up to 6% its weight of iron, and removal of sialic acid did not affect its iron binding capacity. The polypeptide portion of the glycoprotein, 15% by weight of the molecule, was rich in threonine, proline, and serine. The remaining 85% of the molecule was mostly carbohydrate and consisted of galactose, fucose and the acetyl derivatives of sialic acid, glucosamine, and galactosamine. Analytical ultracentrifugation gave a molecular weight of 2.63 X 10^5 and a sedimentation constant of 8.9 S; osmometry yielded a slightly lower value of 2.35 X 10^5 for the average molecular weight, indicating a small degree of microheterogeneity. Viscosity measurements demonstrated that gastroferrin was very asymmetric with an intrinsic viscosity of 0.39 dl/g, and a frictional ratio of 2.2. Combination of viscosity data and sedimentation constant provided another independent estimate of the molecular weight of 2.78 X 10^5.

7786 SYNAPSES IN THE RAT STOMACH AND SMALL INTESTINE. *(E.)* Gabella, G. (Dept. Anat, U. Turin, Italy). *Experientia* 26(6):619-620, 1970.

The distribution and relative frequency of synapses of the myenteric plexus in the rat glandular stomach and penultimate loop of the small intestine were studied by electron microscopy in tissue samples treated with glutaraldehyde and osmium tetroxide and stained with uranyl acetate and lead citrate. Both axo-somatic and axo-dendritic synapses were observed in the myenteric plexus of the rat stomach and small intestine. The relative number of typical (or conventional) synapses in the stomach was 6 times higher than in the small intestine, suggesting that other interneuronal connections not morphologically detectable at present or other transmitter mechanisms may exist.

7787 INTRANUCLEOLAR DENSE PARTICLES IN RAT HEPATIC CELL NUCLEOLI. *(E.)* Shinozuka, H. (U. Pittsburgh Sch. Med., Pa.). *J Ultrastruct Res* 32(5-6):430-442, 1970.

Dense particles in the hepatic cell nucleoli of normal rats were observed when the tissue was fixed in *s*-collidine buffered osmium tetroxide. The particles ranging 70-300 Å in size appeared in clusters of varying numbers and were embedded in the confined areas of amorphous matrix adjacent to the fibrillar component of nucleolonema. When tissue was fixed in phosphate-buffered osmium tetroxide or *s*-collidine-buffered glutaraldehyde the appearance of these particles was not uniform. However, the nucleoli showed distinct spherical areas of amorphous matrix which appeared to correspond to the areas of particle deposition in *s*-collidine-buffered osmium-fixed tissue. Dense particles of an identical nature were also found in the simplified forms of the nucleoli which were seen during the phase of adenine-induced or spontaneous recovery after ethionine injury; the identification of these particles was much easier in these latter nucleoli than in controls because of the simplicity of their configuration. Particles and areas of particle depositio appear to be distinct components of the nucleoli of rat hepatic cells, though the chemical nature and the functional significance of these particles remains unclear.

7788 POLYRIBOSOMAL DISAGGREGATION INDUCED BY PUROMYCIN AND ITS REVERSAL WITH TIME: AN ULTRASTRUCTURAL STUDY OF MOUSE LIVER. *(E.)* Reid, I. M. (U. Pittsburgh Sch. Med., Pa.), H. Shinozuka and H. Sidransky. *Lab Invest* 23(1):119-127, 1970.

The effect of puromycin on mouse (CF1) liver ultrastructure, particularly polyribosomal configuration, and the recovery with time from the altered polyribosomal configuration were investigated by electr microscopy. At 20 or 30 min after a puromycin (0.2 mg., i.p.) injection to fasted mice, disaggregation of polyribosomes, fragmentation and degranulation of rough endoplasmic reticulum, accumulation of numerous liposomes, and reduction in number of

Golgi secretory vacuoles were observed. Restitution of polyribosomal configuration was evident at 90 and 80 min after a single injection; however, the recovery of other cytoplasmic changes was less prominent. Multiple (3 or 5) doses of puromycin at 30 min intervals exacerbated the changes; however, no cell necrosis was seen up to 150 min. There was considerable loss of glycogen, accumulation of liposomes and lipid droplets, and disruption of rough endoplasmic reticulum with some polyribosomal disaggregation in control mice fasted overnight, in comparison to nonfasted mice. The ultrastructural changes observed in puromycin-treated mice, particularly polyribosomal disaggregation, liposome formation, and reduction in number of Golgi vacuoles, correlate well with previously reported chemical findings consisting of protein synthesis inhibition, lipid accumulation, and defective secretion of lipoproteins.

7789 NUCLEAR MEMBRANES FROM MAMMALIAN LIVER: II. LIPID COMPOSITION. *(E.)* Kleinig, H. (2nd Inst. Biol., U. Freiburg, Germany). *J Cell Biol* 46(2):396-402, 1970.

The qualitative and quantitative lipid composition of nuclei and nuclear membranes from pig and rat liver were determined and compared with the corresponding data obtained for microsomes after similar treatment (citrate method). Only traces of lysolecithin were found, and other lysoderivatives and cardiolipin were not detected. The major part of the nuclear lipids was located in the membranes of the nuclear envelope. The phospholipid pattern of the nuclear membranes and the endoplasmic reticulum membranes in general was widely identical in both species. A striking difference in the lipid composition, a 4-fold increase of esterified cholesterol in the nuclear membranes, was found. In a quantitative approach the ratio of total surface area of the nuclear lipids to the total surface area of the nuclear envelope membranes was calculated as being 3.6, a value which approximates the requirements of a bimolecular lipid leaflet model.

7790 FERRIC CITRATE ACTION ON THE EXOCRINE PANCREAS OF THE GOLDEN HAMSTER: ELECTRON MICROSCOPIC STUDIES. *(Ger.)* Putzke, H. P. (Path. Inst. U. Rostock, Germany) and A. Bienengraber. *Exp Path* 4(4):265-276, 1970.

Ferric citrate (5-20 mg in 0.5, 1.0 and 1.5% solutions) was injected i.p. into 30 hamsters (at 3 days intervals for 8-29 days) in order to study the pathogenesis of pancreatic lipomatosis. The pancreas appeared smaller after 5 administrations of 1.0 and 1.5% concentrations, but no effects were noticed from the 0.5% solutions. Light microscopy showed increasing degeneration of exocrine pancreas tissue with duration of treatment with irregular occurrence of small fatty tissue complexes in the inter- and intralobular spaces and gradual disappearance of acinar cells and canaliculi. Cytoplasmic acidophilia and formation of siderous granular lysosomal structures occurred at the peri- and supranuclear zone of the cytoplasm. Electron microscopy revealed mitochondrial alterations with occurrence of fine granular deposits in the matrix and swelling with partial or complete destruction of the cristae. Secretory granules disappeared almost completely from the altered cells, and multiple lysosomes with a fine granular dense substance surrounded by a single layer membrane were noticed mainly in the region of the Golgi apparatus. A primary metabolic disorder in the acinar epithelia appears to be associated with ferric citrate administration with subsequent cytolysis and acinolysis; the mitochondria seem to be the main site of ferric citrate action.

7791 AN ELECTRON MICROSCOPIC STUDY OF THE FENESTRATED ENDOTHELIAL LINING OF RAT LIVER SINUSOIDS. *(E.)* Wisse, E. (Lab. Electron Microscopy, U. Leiden, Netherlands). *J Ultrastruct Res* 31(1-2):125-150, 1970.

The sinusoidal lining of rat liver was described from electron microscopic studies of specimens prepared by perfusion fixation, immersion fixation and freeze etching. Endothelial cell processes bearing interextending sieve plates composed most of the sinusoidal lining; the pore size of the fenestrations was measured to be 0.1 μ, and no larger openings occurred in the lining. Rat liver sinusoids can therefore be regarded as fenestrated capillaries differing from other fenestrated capillaries by the absence of a diaphragm within the fenestrations and the absence of a basement membrane surrounding the capillary; a highly selective filtering effect can be expected in the lining *in vivo*, especially with regard to the passage of particulate material of varying size, for instance chylomicrons. The connection of the fenestrated lining to a certain type of cell present in the sinusoidal lining can be used to identify this cell as an endothelial cell as compared to a Kupffer cell.

7792 THE FINE STRUCTURAL LOCALIZATION OF ENDOGENOUS AND EXOGENOUS PEROXIDASE ACTIVITY IN KUPFFER CELLS OF RAT LIVER. *(E.)* Fahimi, H. D. (Boston City Hosp., Mass.). *J Cell Biol* 47(1): 247-262, 1970.

Endogenous peroxidase activity has been demonstrated in sections of rat liver fixed briefly by glutaraldehyde perfusion and incubated in Graham and Karnovsky's medium for cytochemical demonstration of peroxidase activity. In 24-40% of sinusoidal cells, an electron-opaque reaction product was localized in segments of the endoplasmic reticulum, including the perinuclear cisternae, a few Golgi vesicles and saccules and in some large membrane-bounded granules. This staining was abolished after prolonged fixation or boiling of tissue sections in glutaraldehyde, and in the absence of H_2O_2 or 3,3'-diaminobenzidine from the incubation medium. The reaction was inhibited completely by sodium azide (1mM) and high concentrations of H_2O_2 and partially by KCN (2%), and aminotriazole (0.1 M). Among the different cells in hepatic sinusoids, the nonphagocytic "fat-storing" cells were always peroxidase negative, whereas the lining cells in process of erythrophagocytosis were consistently peroxidase positive. Exogenous horseradish peroxidase, which in contrast to endogenous peroxidase of Kupffer cells was not inhibited by prolonged aldehyde fixation, was taken up by micropinocytosis and remained confined to the lysosomal system of Kupffer cells. The possible biological significance of endogenous peroxidase in Kupffer cells remains obscure.

7793 LIGHT AND ELECTRON MICROSCOPE OBSERVATIONS ON AUTO- AND HETEROPHAGY IN THE EXOCRINE PANCREAS OF THE HIBERNATING FROG *(RANA ESCULENTA)*.

(E.) Geuze, J. J. (Ctr. Med. Electronmicroscopy, St. U. Utrecht, Netherlands). *J Ultrastruct Res* 32(5-6):391-404, 1970.

Auto- and heterophagy in the exocrine pancreas of the hibernating frog were investigated by light and electron microscopy. In the course of hibernation the frog pancreas was subject to a progressive infiltration of eosinophils and macrophages, a decrease in the number of zymogen granules per nucleus, a decrease in the size of the granules and cell volume and an increase of concentrated mitochondria near the small Golgi area. Relatively small vacuoles with an empty appearance were found near the Golgi area and larger ones (up to 5 μ in diameter) at greater distances. The acini of hibernating frog pancreas were composed of light cells which were characterized by a sparse vesicular rough endoplasmic reticulum and small Golgi system with few vesicles and short cisternae, dark cells which made up the majority of acinar cells and contained a denser cytoplasmic matrix, abundant lamellar or saccular endoplasmic reticulum and relatively few free ribosomes. A so-called mixed exocrine-endocrine cell type was situated in the vicinity of islets of Langerhans. Numerous residual bodies (dense bodies, cytosegresomes, cytosomes and autophagic vacuoles) present during hibernation showed that considerable lysis occurred in the acinar cells. Many zymogen granules incorporated into cytosegresomes were removed from the cells by heterophagic activity of macrophages and centroacinar cells. Endoplasmic reticulum, mitochondria, and nuclei were sequestered, and the endoplasmic reticulum was abolished by autophagic vacuoles abundant in the acinar cells during hibernation.

7794 FORMATION OF CELL COAT MATERIAL FOR THE WHOLE SURFACE OF COLUMNAR CELLS IN THE RAT SMALL INTESTINE, AS VISUALIZED BY RADIOAUTOGRAPHY WITH 1-FUCOSE-^{3}H.

(E.) Bennett, G. (Dept. Anat., McGill U., Montreal, Quebec, Canada) and C. P. Leblond. *J Cell Biol* 46(2):409-416, 1970.

The ultrastructure of rat duodenal columnar cells was investigated by radioautography with fucose-^{3}H (which is quite stable and is not transformed into glycogen or amino acids). At 2.5 and 5 min after fucose-^{3}H injection (5.0 mC/animal; specific activity 4.3 mC/mmole), the light microscope showed strong reaction over the supranuclear Golgi region in columnar cells of duodenal villi. The intensity of the reaction was maximal in the cells of the lower third of the villi and gradually decreased toward the apex. With the electron microscope, silver grains (Ilford L4 emulsion) were concentrated over the Golgi apparatus, whereas few silver grains were seen over the remainder of the cell, or over the apical, lateral, and basal surface membranes. By 20 min after injection, the silver grains were seen over the microvillar border, over the lateral surface membranes, and finally, over the basal surface membrane of the cell. By 4 hr after injection, the number of silver grains over the Golgi apparatus had greatly decreased, while they remained prominent over the apical and other surfaces. Apparently in rat duodenal columnar cells, and perhaps in some other cells, glycoprotein material is synthesized in the Golgi apparatus and transported to all cell surfaces to become part of the cell coat.

7795 SOME MORPHOLOGICAL AND BIOCHEMICAL CHARACTERISTICS OF ISOLATED RAT LIVER CELLS DISSOCIATED WITH SODIUM TETRAPHENYLBORON AND CULTURED IN SUSPENSION.

(E.) Casanello, D. E. (Lab. Nucl. Med. Radiat Biol., U. California, Los Angeles) and L. E. Gerschenson. *Exp Cell Res* 59(2): 283-290, 1970.

Some morphological and biochemical characteristics of isolated rat liver cells dissociated with sodium tetraphenylboron and cultured in suspension were investigated. After 30 days in culture, the shape of the hepatocytes was more irregular, the cytoplasmic vacuoles decreasing and the cytoplasm becoming more basophilic; the nucleus-cytoplasm size relation was the same as in the zero time cells. The production of $^{14}CO_2$ from glucose by cells pooled in Krebs-Ringer-Phosphate was very poor, but improved markedly if they were maintained in a medium supplemented with serine for 18 hr. Cells incubated in the serine-supplemented medium for 18 hr incorporated ^{14}C-U-leucine linearly at least for 3 hr, and this incorporation was inhibited by the addition of 0.5 mM puromycin. The integrity of the organ specific function of these cultured cells was established by the induction of tyrosine-α-ketoglutarate transaminase by treatment with 0.05 mM dexamethasone (control activity, 1.8 nmole/min/mg; dexamethasone-treated, 16.7 nmole/min/mg).

7796 HISTIDINE DECARBOXYLASE IN GASTRIC TISSUES OF PRIMATES.

(E.) Noll, W. E. (Yale U. Sch. Med., New Haven, Conn.) and R. J. Levine. *Biochem Pharmacol* 19(3):1043-1053, 1970.

Histidine decarboxylase activity was identified in the gastric mucosa of monkeys and man and in a human gastric carcinoid tumor. Crude homogenates of gastric mucosal tissue but not of the carcinoid tumor also demonstrated 5-hydroxytryptophan decarboxylase activity; this activity disappeared completely during purification procedures that resulted in increased specific activity of histidine decarboxylase. These histidine decarboxylases had properties that were very similar to or identical with histidine decarboxylases prepared from other mammalian sources: the apparent K_m varied inversely with pH (0.3 mM at pH 6.3); the pH optimum varied inversely with substrate concentration (optimal pH of 6.3 at 2.5 mM histidine); activity of the enzyme was enhanced by pyridoxal 5'-phosphate but not by benzene and inhibited by both bromcresine and hydrazino analog of histidine but not by α-methyl-dopa. In both monkeys and men histidine decarboxylase activity was greater in the fundus than in the antrum of the stomach. The enzyme necessary for histamine biosynthesis is present in gastric tissues of primates, supporting the hypothesis that histamine may mediate gastric acid secretion in primates.

7797 AN INTERPRETATION OF LIVER CELL MEMBRANE AND JUNCTION STRUCTURE BASED ON OBSERVATION OF FREEZE FRACTURE REPLICAS OF BOTH SIDES OF THE FRACTURE. *(E.)* Chalcroft, J. P. (Dept. Cell Biol., U. Auckland, New Zealand) and S. Bullivant. *J Cell Biol* 47(1):49-60, 1970.

A modification of the freeze-fracturing technique to permit observation of replicas of both sides of the fracture was used to study mouse liver cell membrane structure. Membranes broke to give two faces with three-dimensional complementarity (although there was some small-scale mismatching) and since the two distinctive sets of membrane faces were complementary sets, they could not be the two outside surfaces. Structures (such as particles) seen on these faces were within the membrane. The fracture plane with respect to a plasma membrane appeared to be close to the interface between membrane and cytoplasm, or at the interface. Models, consistent with the appearance of the matching replicas, were derived for three regions of the plasma membrane: (a) The nonjunctional plasma membrane, which contains many scattered particles (except for these particles, the otherwise flat fracture face is not at variance with a bimolecular leaflet structure). (b) Gap junctions consisting of the two membranes containing a close-packed array of particles. (c) Tight junctions consisting of membranes with internal ridges.

7798 ISOLATION OF A GOLGI-RICH FRACTION FROM RAT LIVER. *(E.)* Leelavathi, D. E. (U. Pittsburgh Sch. Med., Pa.), L. W. Estes, D. S. Feingold and B. Lombardi. *Biochim Biophys Acta* 211(2):124-138, 1970.

A fraction rich in membranes of the Golgi apparatus was isolated from rat liver by discontinuous density gradient centrifugation. Electron microscopic analysis of the fraction revealed the presence of structures very similar to those of the Golgi apparatus in intact cells, namely stacked cisternae, secretory vesicles, and tubular elements. The Golgi-rich fraction contained over 90% of the N-acetyllactosamine synthetase, about 2% of the glucose-6-phosphatase and 12% of the AMP phosphohydrolase present in the post-nuclear supernatant of liver homogenates. The protein and RNA content of the Golgi fraction were 2.9 mg/g liver and 0.1 mg/g liver, resp., but no attempt at estimating the degree of RNA contamination was made. Less than 0.5% of the post nuclear supernatant succinate-cytochrome *c* reductase activity was found in the Golgi fraction.

7799 SEQUENTIAL MORPHOLOGICAL ALTERATIONS IN HEPATIC CELL NUCLEOLI INDUCED BY VARYING DOSES OF ACTINOMYCIN D. *(E.)* Goldblatt, P. J. (U. Pittsburgh Sch. Med., Pa.) and R. J. Sullivan. *Cancer Res* 30(5):1349-1356, 1970.

7800 STUDY OF AN ACIDIC PROTEIN EXTRACTED FROM LIVER CELL CYTOPLASM WHICH INHIBITS THE CELL-FREE SYNTHESIS OF HEMOGLOBIN. *(Fr.)* Levy, F. (Inst. Molec. Path., Paris, France), L. Tichonicky and J. Kruh. *Biochim Biophys Acta* 209(2):521-531, 1970.

7801 ELECTRON PARAMAGNETIC RESONANCE STUDY OF THE HIGH- AND LOW-SPIN FORMS OF CYTOCHROME P-450 IN LIVER AND IN LIVER MICROSOMES FROM A METHYLCHOLANTHRENE-TREATED RABBIT. *(E.)* Peisach, J. (Albert Einstein Coll. Med., Yeshiva U., Bronx, N. Y.) and W. E. Blumberg. *Proc Nat Acad Sci* 67(1):172-179, 1970.

7802 STUDIES ON PLASMA MEMBRANES: XI. INORGANIC PYROPHOSPHATASE, PP_i-GLUCOSE PHOSPHOTRANSFERASE AND GLUCOSE-6-PHOSPHATASE IN PLASMA MEMBRANES AND MICROSOMES ISOLATED FROM RAT AND MOUSE LIVERS AND HEPATOMAS. *(E.)* Emmelot, P. (Netherlands Cancer Inst., Amsterdam) and C. J. Bos. *Biochim Biophys Acta* 211(2):169-183, 1970.

7803 THE CHEMICAL COMPOSITION AND FUNCTION OF GASTROINTESTINAL MUCUS. *(E.)* Schrager, J. (Roy. Albert Edward Infirm., Wigan, Lancashire, England). *Gut* 11(5):450-456, 1970.

7804 ANATOMIC AND CLINICAL ASPECTS OF THE JUNCTION OF THE ILEUM WITH THE LARGE INTESTINE. *(E.)* Rosenberg, J. C. (Wayne St. U. Sch. Med., Detroit, Mich.) and L. J. A. DiDio. *Dis Colon Rectum* 13(3):220-224, 1970.

7805 ADAPTATIONS OF THE CECUM-COLON STRUCTURE OF RODENTS. *(E.)* Lange, R. (Inst. Marine Biol., U. Oslo, Norway) and H. Staaland. *Comp Biochem Physiol* 35(4):905-919, 1970.

7806 SEGMENTS OF THE HUMAN LIVER AND SURGICAL ACCESSES TO THEM. *(Rus.)* Serapinas, I. L. (Vilnius Med. Inst, USSR). *Vestn Khir* 104(4):48-55, 1970.

7807 THE MITOTIC CYCLE OF THE ESOPHAGEAL EPITHELIUM OF MICE UNDER HYDROCORTISONE TREATMENT. *(Rus.)* Gololobova, M. T. (Acad. Med. Sci. USSR, Moscow). *Biull Eksp Biol Med* 69(4):97-100, 1970.

7808 ELECTRON MICROSCOPIC INVESTIGATION OF THE EPITHELIUM OF COLONIC MUCOSA FOLLOWING RESECTION OF THE JEJUNUM. *(Rus.)* Zufarov, K. A. (Tashkent Med. Inst., USSR), E. K. Shishova, P. I. Tashkhodzhaev and I. M. Baibekov. *Arkh Pat* 32(4):57-62, 1970.

7809 STUDIES ON PROTEINS OF ANIMAL RIBOSOMES: IV. ANTIGENIC PROPERTIES OF RIBOSOMES AND RIBOSOMAL PROTEINS FROM LIVER AND HEPATOMA. *(Ger.)* Noll, F. (German Acad. Sci., Berlin) and H. Bielska. *Arch Geschwulstforsch* 35(4):338-346, 1970.

7810 DISTRIBUTION OF MITOCHONDRIAL ENZYMES AFTER ISOPYCNIC CENTRIFUGATION OF A RAT LIVER MITOCHONDRIAL FRACTION IN A SUCROSE GRADIENT: INFLUENCE OF THE SPEED OF CENTRIFUGATION. *(E.)* Wattiaux, R. (Lab. Physiol. Chem., U. Notre Dame de la Paix, Namur, Belgium) and S. Wattiaux- De Coninck. *Biochem Biophys Res Commun* 40(5):1185-1188, 1970.

7811 SOME RELATIONS OF LYSINE RESIDUES TO REACTIVITIES IN PANCREATIC RIBONUCLEASE. *(E.)* Glick, D. M. (Dept. Biochem., Marquette U., Milwaukee, Wisc.) and E. A. Barnard. *Biochem Biophys Acta* 214(2):326-342, 1970.

7812 PURIFICATION AND PROPERTIES OF DIHYDROURACIL DEHYDROGENASE FROM PIG LIVER. *(E.)* Goedde, H. (Inst. Human Genet., U. Hamburg, Germany), D. P. Agarwal and K. Eickhoff. *Hoppe Seyler Z Physiol Chem* 351(8):945-951, 1970.

7813 EFFECTS OF SINGLE-DOSE, WHOLE-BODY, ^{60}Co GAMMA IRRADIATION ON NUMBER OF CELLS IN DNA SYNTHESIS AND MITOSIS IN THE MOUSE DUODENAL EPITHELIUM. *(E.)* Lesher, J. (Allegheny Gen. Hosp., Pittsburgh, Pa.) and S. Lesher. *Radiat Res* 43(2):429-438, 1970.

7814 IDENTITY OF TRYPSIN INHIBITORS ISOLATED FROM BOVINE LIVER AND PANCREAS. *(E.)* Chauvet, J. (Fac. Sci., Paris, France) and R. Acher. *Int J Protein Res* 2(3):165-167, 1970.

7815 ULTRASTRUCTURAL ANALYSIS OF HEPATIC HEMATOPOIESIS IN THE FETAL MOUSE. *(E.)* Jones, R. O. (Med. Res. Counc., Berkshire, England). *J Anat* 107(2):301-314, 1970.

7816 QUANTITATIVE ESTIMATION OF FREE AND MEMBRANE-BOUND RIBOSOMES IN RAT LIVER CELLS DURING ABSOLUTE STARVATION. *(Ger.)* El Gamal, M. (Phys. Med. Inst., Alexandria, Egypt) and H. David. *Exp Path* 4(4):291-296, 1970.

7817 A PROTEIN FRACTION FROM RAT LIVER RIBOSOMES STIMULATING INITIATION OF POLYPHENYLALANINE SYNTHESIS AT LOW Mg^{++} CONCENTRATION. *(E.)* Grummt, F. (German Acad. Sci., Berlin). *Acta Biol Med German* 24(6):K55-60, 1970.

7818 PROPERTIES OF MUSCLE AND LIVER LYSOSOMES IN ADRENALECTOMIZED RATS. *(E.)* Berg, T. (Inst. Zoophysiol., U. Oslo, Norway) and J. W. C. Bird. *Acta Physiol Scand* 79(3):335-350, 1970.

7819 AN ULTRASTRUCTURAL STUDY OF MITOTIC DIVISION IN DIFFERENTIATED GASTRIC SMOOTH MUSCLE CELLS. *(E.)* Cobb, J. L. S. (Gatty Marine Lab., St. Andrews, Scotland) and T. Bennett. *Z Zellforsch* 108(2):177-189, 1970.

7820 PURIFICATION AND CHARACTERIZATION OF A CYTOPLASMIC 17-HYDROXYSTEROID:NAD(P) OXIDOREDUCTASE FROM RABBIT LIVER. *(Ger.)* Ball, P. (Inst. Clin. Biochem., U. Bonn, Germany) and H. Breuer. *Hoppe Seyler Z Physiol Chem* 351(8):1011-1025, 1970.

7821 BIOCHEMICAL AND IMMUNOCHEMICAL STUDY OF SOLUBLE ANTIGENS OF HUMAN COLONIC MUCOSA. *(Fr.)* Henry, C. (Hosp. Nord., Marseilles, France), N. Sacoman and R. Depieds. *Ann Inst Pasteur* 119(1):118-132, 1970.

7822 ON THE SPECIES-SPECIFITY OF THE ANTIGENIC ESTERASE VI A OF THE HUMAN GASTRIC MUCOUS MEMBRANE: I. COMPARATIVE STUDIES ON EXTRACTS OF THE GASTRIC MUCOUS MEMBRANE OF RABBIT, GUINEA-PIG, RAT AND MAN. *(Ger.)* Kuhlmann, W. D. (Inst. Sci. Res. Cancer, Villejuif, France) and W. Rapp. *Z Immunitaetsforsch* 140(1):9-17, 1970.

7823 STUDIES ON INTESTINAL ANTIBODIES: II. OCCURRENCE AND PROTECTIVE FUNCTION OF INTESTINAL ANTIBODIES AFTER BLOCKADE OF ANTAGONISTIC ACTIVITIES IN INTESTINAL FLUIDS. *(Ger.)* Muller-Ruchholtz, W. (Hyg. Inst. U. Kiel, Germany), J. Fullhaas and H. G. Sonntag. *Z Immunitaetsforsch* 140(1):105-114, 1970.

7824 CHARACTERISTICS OF Na^{+}-K^{+}-STIMULATED ATPAS IN RABBIT GALL BLADDER EPITHELIUM. *(E.)* Van Os, C. H. (Dept. Physiol., U. Nijmegen, Netherlands) and J. F. G. Slegers. *Pflueger Arch* 319(1):49-56, 1970.

- o P:Absorp (7827) (7840)
- o P:Motil (7853)
- o P:Secr:Stom (7864)
- o P:Secr:Hepatobil (7894) (7895) (7898) (7906) (7910) (7915) (7931) (7939) (7941) (7950) (7963) (7975) (7976)
- o P:Secr:Int (7982) (7983) (7984) (7985) (7986)
- o P:Gen (7998)
- o D:Esoph (8079)
- o D:Stomduo (8086) (8087) (8091) (8105) (8127)
- o D:S.Intest (8155)
- o D:S.Intest:Regent (8159)
- o D:Pancreas:Pancreat (8251) (8260)
- o D:Livbil (8272) (8281) (8282) (8283) (8284) (8296) (8297)
- o D:Livbil:A.Nonv.Hep (8317) (8327) (8328) (8330)
- o D:Livbil:Cirrh (8376) (8382) (8388)
- o D:Livbil:Gallb (8396) (8398) (8406)

7825 ACTIVE SUGAR ACCUMULATION BY ISOLATED INTESTINAL EPITHELIAL CELLS: A NEW MODEL FOR SODIUM-DEPENDENT METABOLITE TRANSPORT. *(E.)*

Kimmich, G. A. (U. Rochester Sch. Med. Dent., N. Y.). *Biochemistry* 9(19):3669-3677, 1970.

Active sugar transport and the sodium gradient transport hypothesis were examined in a preparation of isolated intestinal epithelial cells. The isolated cells accumulated sugars by a sodium-dependent process which was inhibited severely by ouabain (0.5 mM) or oligomycin (10 μg/ml). Cells loaded with 50 mM intracellular Na^+ were able to actively accumulate sugar within a 1-2 min interval when placed in a medium containing 20 mM Na^+; the intracellular sodium concentration was greater than 20 mM during the entire 2 min interval, and the increment in sugar uptake was as great during the first 2 min as at any subsequent 2 min interval. Finally, cells loaded with 50 mM Na^+ and 2.5 mM 3-0-methylglucose accumulated additional sugar immediately when placed in media with 20 mM Na^+ and 1.25 mM 3-0-methylglucose, and no extrusion of sugar from the cell was observed in this case. A transport model based on the premise that energy for a number of energy-dependent processes may be derived from a common intermediate which is generated by the $[Na^+ + K^+]$-activated ATPase appeared to be more consistent with the experimental observations than the sodium gradient hypothesis.

7826 BILIARY EXCRETION OF CONTRAST MEDIA. *(E.)*

Rosati, G. (Bracco Chem. Co., Milan, Italy) and P. Schiantarelli. *Invest Radiol* 5(4):232-243, 1970.

The biliary excretion, urinary excretion, and plasma protein binding of iodipamide, ioglycamic acid and B 9720 were investigated in mongrel dogs. All these compounds were excreted by the liver through completely saturable processes, although there were some remarkable differences in the maximum transport velocity between the compounds examined; the maximum mean values for ioglycamic acid, iodipamide and B 9720 were 0.72, 0.48 and 0.34 μmole/kg/min, resp. Ioglycamic acids produced lower iodine concentrations (15 mg/ml) and a greater flow of bile (0.46 ml/30 min) than iodipamide (24 mg/ml; 0.38 ml/30 min) and B 9720 (27 mg/ml; 0.30 ml/ 30 min). For blood levels of less than 0.06 μmole/ml of blood, the biliary clearance of B 9720 was about 5 ml/kg, and the urinary clearance about 1 ml/kg; with increasing blood levels, the biliary clearance dropped rapidly to about 1 ml/kg and then slowly below this value, while the urinary clearance rose gradually until it reached a peak of 1.7 ml/kg. Iodipamide and ioglycamic acid presented a threshold level (0.06 and 0.16 μmole/ml) below which the excretion of both compounds was negligible through both the liver and the kidney. But as soon as the threshold value was exceeded, the biliary clearance rose rapidly until it settled between 1.4 and 1.3 ml/kg over a wide range of blood levels; the urinary clearance increased more gradually for both compounds and reached a peak at 1.0 and 1.4 ml/kg. In rats, the amounts of product excreted in 3 hr as a function of dose did not reveal any saturation of the liver capacity for excretion. Iodipamide and ioglycamic acid were bound by a group of numerous weak binding sites and a single strong binding site; B 9720 was weakly bound by a group of several binding sites.

7827 TRANSPORT STUDIES, MORPHOLOGICAL, HISTOCHEMICAL AND MORPHOMETRIC FINDINGS ON THE EXCLUDED SMALL INTESTINAL LOOP IN THE RAT. *(Ger.)*

Menge, H. (Med. U. Clin. Marburg, Germany), R. Bloch, E. Schaumloffel and E. O. Riecken. *Z Ges Exp Med* 153(1):74-90, 1970.

Histological and functional studies were performed using blind jejunal loops of the non-filling, self-emptying type in 29 female rats, two months postoperatively. Absorption of glucose decreased from 2.7 to 1.4 mg/cm/hr, and absorption of L-tryptophan-^3H was decreased from 33 to 23%; no changes in D-xylose-^{14}C absorption were noted. The mucosa was highly atrophic with reduction in the height of the villi, the thickness of the mucosal layer, and the number of mitoses. The following enzyme reactions were histologically investigated in 10 rats: ATPase, leucineaminopeptidase, non-specific alkaline phosphatase, acid phosphatase, non-specific microsomal esterase, succinate dehydrogenase, NADH and NADPH oxidases, cytochrome oxidase and monoamine oxidase. Enzymatic activity was unchanged in 7 rats, and a slight general reduction in activity was noted in 3 animals which also showed the most pronounced mucosal atrophy. A close correlation was established between absorption of glucose and the height of the villi (r=0.83), but not between the absorption of L-tryptophan and the height of the villi (r=0.43). A normal food load appears to be important for the maintenance of both mucosal structure and function.

7828 ABSORPTION BY THE RAT OF NONVOLATILE OXIDATION PRODUCTS OF LABELED RANDOMIZED CORN OIL. *(E.)*

Perkins, E. G. (Dept. Food Sci., U. Illinois, Urbana), S. M. Vachha and F. A. Kummerow. *J Nutr* 100(7):725-731, 1970.

The extent of lymphatic absorption of the methyl esters prepared from the nonvolatile oxidation products of labeled heat-abused corn oil was determined in thoracic duct-cannulated adult male rats. Maximum absorption of esters did not occur until 24 to 48 hr after they had been fed, with only 10.2% of the radioactivity appearing in the lymph lipid within 24 hr compared to 85% of the radioactivity from U-^{14}C-labeled unheated corn oil. Selective absorption of the nonvolatile oxidation products was demonstrated by the changes in recovery of radioactivity in the lipid classes separated on thin layer plates over various time periods; the proportion of triglycerides gradually decreased (29.1% to 8.4%) as that of the polar lipids increased (4.0% to 10.7%). Only 31.2% of the methyl esters of the heat-abused oil was absorbed within 48 hr, and 18.7% was metabolized; 7.6% of the radioactivity was deposited in the carcass, 1% in the liver, 5.9% in the gastrointestinal tract, 4.5% was excreted in the urine and 62.8% in the feces. The liver lipids of animals fed the methyl esters of the heated oil contained fewer polar lipids (18.8%) and the carcass lipids contained less triglyceride (28.7%) than the animals fed unheated corn oil (39.4% and 74.1%, resp.). The free fatty acids of the nonvolatile oxidation products were more readily metabolized (25.0%) and dilution of the methyl esters with 55% unlabeled corn oil increased excreted fecal radioactivity while dilution with 90% unlabeled corn oil increased excreted radioactivity in the urine.

7829 THE EFFECT OF NEOMYCIN ON IRON ABSORPTION IN GERMFREE RATS. *(E.)* Geever, E. F. (Albert Einstein Coll. Med., Bronx, N.Y.), L. V. Crowley and S. M. Levenson. *Brit J Haemat* 18(5): 567-574, 1970.

Radioiron absorption studies were performed on two groups of adult male germfree and open animal room rats which were raised in germfree isolators and shielded from external bacterial exposure from weanling to adult life. Both groups were given a 5 day course of neomycin treatment (0.5 g/day) and 1 day later radioiron (0.23 µC in 0.25 mg) was administered by intragastric instillation. Both groups showed an increase in radioiron absorption and total serum iron level over controls at sacrifice 7 days following intragastric instillation (% absorbed: germfree controls 8.1%, neomycin-treated 12.7%; isolator-housed controls 5.9%; neomycin-treated 15.3%). These findings suggest that the neomycin effect on iron absorption is a complex one which may operate in the absence of living bacteria.

7830 THE RELEASE OF ^{45}Ca FROM MITOCHONDRIA OF CHICKEN INTESTINAL MUCOSA BY CALCIUM BINDING PROTEIN. *(E.)* Hamilton, J. W. (Biochemistry Dept. U. Tasmania, Hobart) and E. S. Holdsworth. *Biochem Biophys Res Commun* 40(6):1325-1330, 1970.

The release of Ca from mitochondria isolated from chicken intestinal mucosal cells preloaded *in vivo* with ^{45}Ca was isolated. The specific calcium binding protein prepared from vitamin D-replete chicks caused the release of Ca in a time-dependent and concentration-dependent (calcium binding protein) manner; similar extracts prepared from vitamin D deficient chicks had no effect on ^{45}Ca release. The effects of vitamin D on calcium translocation can be explained by the greater "turnover" of Ca in mitochondria when calcium binding protein is present.

7831 TRANSPORT OF 5-THIO-D-GLUCOSE IN HAMSTER SMALL INTESTINE. *(E.)* Critchley, D. R. (Rutgers Med. Sch., New Brunswick, N.J.), A. Eichholz and R. K. Crane. *Biochim Biophys Acta* 211(2):244-254, 1970.

Segments of hamster small intestine were used to study the interaction of 5-thio-D-glucose with the D-glucose transport system. Accumulation against concentration gradient, substrate inhibition, phlorizin sensitivity, Na$^+$ dependence, energy dependence and counterflow were determined; the estimated K_m value for 5-thio-D-glucose was of the order of 2.8 mM. Two interesting differences between D-glucose and 5-thio-D-glucose were found: 5-thio-D-glucose was less effective than D-glucose in inhibiting the specific binding of D-^{3}H-glucose to brush borders; 5-thio-D-glucose was also a poor substrate for hexokinase. The effect of the sulfur substitution for oxygen appears to have affected the reactivity of 5-thio-D-glucose only slightly with respect to binding and hexokinase interaction, while active transport of 5-thio-D-glucose appears to be unaffected by this molecular alteration.

7832 EFFECT OF COBALT ON IRON ABSORPTION. *(E.)* Schade, S. G. (Walter Reed Army Inst. Res., Washington, D. C.), B. F. Felsher, B. E. Glader and M. E. Conrad. *Proc Soc Exp Biol Med* 134(3):741-743, 1970.

The effect of cobalt (50 µmoles) upon the mucosal uptake of iron was investigated in rats by monitoring radioiron uptake. In animals receiving only iron, iron absorption increased in a biphasic manner with increasing doses of carrier iron. The first phase of absorption apparently represented absorption facilitated by a saturable carrier, whereas the second portion probably represented diffusion. The addition of cobalt to the test doses of iron produced a linear dose-related response similar to that seen in rats receiving high doses of iron alone. Significantly less radioactive iron was observed in both the carcass and small intestine of animals receiving 25 µmoles cobalt with test doses of radiation (0.27 µmole) as compared to animals receiving iron alone (0.69 µmole), indicating that cobalt diminished the mucosal uptake of the iron from the lumen of the gut. Cobalt was probably capable of saturating a common pathway in intestinal absorptive cells for the absorption of both metals.

7833 HYDROGEN AND SODIUM PERMEATION OF CANINE GASTRIC MUCOSA DURING HISTAMINE AND SODIUM THIOCYANATE ADMINISTRATION. *(E.)* Moody, F. G. (U. Alabama Med Ctr., Birmingham) and W. L. Davis. *Gastroenterology* 59(3):350-357, 1970.

The hydrogen-sodium diffusion barrier of canine gastric corpus epithelium was studied during rest, stimulation (in response to histamine 1 µg/kg/min), and inhibition (by thiocyanate 49 mEq for 1 hr followed by 0.2 mEq/min) of acid secretion. Isosmotic acid and mannitol solutions were instilled onto the mucosal surface of exteriorized, chambered gastric segments for this purpose. Stimulation led to an increased back diffusion of hydrogen and a decrease in sodium efflux; inhibition resulted in little further change. Thiocyanate administration, prior to stimulation, produced a 2-fold increase in hydrogen-sodium exchange. Subsequent histamine infusion further increased this exchange and led to gross disruption of the mucosal surface.

7834 STRUCTURAL REQUIREMENTS FOR ACTIVE INTESTINAL TRANSPORT: THE NATURE OF THE CARRIER-SUGAR BONDING AT C-2 AND THE RING OXYGEN OF THE SUGAR. *(E.)* Barnett, J. E. G. (Dept. Physiol., U. Southampton, England), A. Ralph and K. A. Munday. *Biochem J* 118(5):843-850, 1970.

Various sugars were incubated with slices of everted hamster intestinal tissue to determine structural requirements for transport by the Na^+-dependent sugar carrier. Sugars were assumed to be transported by this carrier if the accumulation was diminished in the absence of Na^+ and in the presence of the competitive inhibitor 1,5-anhydro-D-glucitol. The extent of accumulation was correlated with the number of hydroxyl groups in the D-gluco configuration if the ring oxygen was placed in the normal D-glucose position. 5-Thio-D-glucose, with a sulphur atom in the ring, was transported at about the same rate as D-glucose (final tissue/medium ratio of 8.2 and 5.1, resp.) and had a similar K_i for D-galactose transport (2.9 and 2.3 mM, resp.), but myoinositol was poorly accumulated (tissue/medium rate of 0.6). No sugar without a hydroxyl group in the D-gluco position at C-2 of the sugar, including D-mannose, 2-deoxy-D-glucose,2-chloro-2-deoxy-D-glucose and 2-deoxy-2-fluoro-D-glucose, was transported by the Na^+-dependent carrier, but these sugars and L-fucose weakly and competitively inhibited the accumulation of L-glucose into slices of everted hamster intestinal tissue. A possible mechanism for active intestinal transport may involve covalent carrier-sugar binding.

7835 IMPAIRED JEJUNAL ABSORPTION RATES OF ESSENTIAL AMINO ACIDS INDUCED BY EITHER DIETARY CALORIC OR PROTEIN DEPRIVATION IN MAN. *(E.)* Adibi, S. A. (Montefiore Hosp., Pittsburgh, Pa.) and E. R. Allen. *Gastroenterology* 59(3):404-413, 1970.

Changes in transport specificity and jejunal absorption rates of essential amino acids were investigated in 7 normal and 7 obese human volunteers after 2 weeks of total starvation or isocaloric protein-free dieting by an *in vivo* perfusion technique. Both starvation and protein depletion resulted in the reduction of amino acid absorption rates at higher perfusion concentrations (10-20 mM) in 12 subjects (control, 745; starved, 444 μmole/min/30 cm at 10 mM). However, the specificity of preferential amino acid absorption (methionine > leucine and isoleucine > valine > lysine > phenylalanine > tryptophan > threonine) from equimolar mixtures of all eight essential amino acids was not affected by these dietary manipulations. Moreover, there was a decrease in the absorption rates of amino acids with high (leucine) as well as low (threonine) affinity for the amino acid carrier systems. The evidence for a reduction in the capacity of the intestine to transport leucine after starvation was further supported by a lower rise in the plasma concentrations of leucine during the perfusion studies in starved subjects. In the face of reduced amino acid absorption rate, the jejunal mucosal histology and cell organelles appeared intact.

7836 STUDIES ON THE MECHANISM OF ACTION OF CALCIFEROL: III. VITAMIN D-MEDIATED INCREASE OF INTESTINAL BRUSH BORDER ALKALINE PHOSPHATASE ACTIVITY. *(E.)* Normal, A. W. (Dept. Biochem., U. California, Riverside), A. K. Mircheff, T. H. Adams and A. Spielvogel. *Biochim Biophys Acta* 215(2):348-359, 1970.

Some of the biochemical consequences of vitamin D administration, *in vivo*, in its target organ, the intestinal mucosa were investigated. Oral administration of 500 I.U. of vitamin D_3 (cholecalciferol) to vitamin D-deficient chicks caused the level of alkaline phosphatase (orthophosphoric monoester phosphohydrolase, EC 3.I.3.I.) of intestinal mucosal homogenates to increase maximally (2-3-fold) 60 hr after the administration of the vitamin. The intestinal alkaline phosphatase(s) of both vitamin D-deficient and vitamin D-treated chicks was localized exclusively in the brush border or microvilli fraction. The brush border levels of Ca^{2+}-stimulated ATPase (ATP phosphohydrolase, EC 3.6.I.3) were elevated after vitamin D administration; however, vitamin D treatment caused no change in the levels of invertase (β-D-fructofuranoside fructohydrolase, EC 3.2.I.26) and other related disaccharidases localized in the intestinal brush border fraction. The rise in intestinal brush border alkaline phosphatase mediated by vitamin D was prevented by the administration *in vivo* of cycloheximide, suggesting that the vitamin induced the *de novo* synthesis of this enzyme. The simultaneous time-course of appearance of increased levels of brush border alkaline phosphatase and the increased rate of transport of calcium, measured *in vitro* across intact segments of ileal tissue after oral vitamin D_3 administration, suggest a functional involvement of alkaline phosphatase in vitamin D-mediated calcium transport.

7837 EXCRETION OF NEUTRAL STEROID HORMONES IN HUMAN BILE. *(E.)* Laatikainen, T. (Dept. Med. Chem., U. Helsinki, Finland). *Ann Clin Res* 2(3):1-28, 1970.

7838 EFFECT OF IONIC CONCENTRATION CHANGES ON MEMBRANE POTENTIAL OF PERFUSED RAT LIVER. *(E.)* Claret, M. (Fac. Sci., Orsay, France), E. Coraboeuf and M. P. Favier. *Arch Int Physiol Biochim* 78(3):531-545, 1970.

7839 EFFECT OF FERRITIN AND FERRIC CHLORIDE ON THE *IN VIVO* UPTAKE OF ^{125}I-HSA BY MOUSE PERITONEAL CELLS. *(E.)* Rhodes, J. M. (State Serum Inst., Copenhagen, Denmark). *J Reticuloendothel Soc* 8(3):248-267, 1970.

7840 CORRELATION BETWEEN THE HISTOLOGICAL CHANGES AND GLUCOSE INTESTINAL ABSORPTION FOLLOWING A SINGLE DOSE OF 5-FLUOROURACIL. *(E.)* Roche, A. C. (St. Lazare Hosp., Paris, France), J. C. Bognel, C. Bognel and J. J. Bernier. *Digestion* 3(4):195-212, 1970.

ABSORPTION—EXCRETION—TRANSPORT

7841 THE ABSORPTION AND EXCRETION OF CARBENOXOLONE IN MAN. *(E.)* Downer, H. D. (St. Mary's Hosp. Med. Sch., London, England), R. W. Galloway, L. Horwich and D. V. Parke. *J Pharm Pharmacol* 22(7):479-487, 1970.

7842 THE MEASUREMENT OF IRON ABSORPTION BY WHOLE-BODY COUNTING. *(E.)* Cook, J. D. (Dept. Med., U. Washington, Seattle), H. E. Palmer, K. G. Pailthorp and C. A. Finch. *Phys Med Biol* 15(3):467-473, 1970.

7843 NORMAL AND PROMOTED GASTROINTESTINAL ABSORPTION OF WATER-SOLUBLE SUBSTANCES: I. INDUCED RAPIDLY REVERSIBLE HYPERABSORPTIVE STATE IN THE CANINE FUNDIC STOMACH POUCH. *(E.)* Davis, W. W. (Lilly Res. Lab., Indianapolis, Ind.), R. R. Pfeiffer and J. F. Quay. *J Pharm Sci* 59(7):960-963, 1970.

7844 ALANINE AND GLUCOSE EFFECTS ON THE INTRACELLULAR ELECTRICAL POTENTIAL OF RABBIT ILEUM. *(E.)* Rose, R. C. (U. Pittsburgh Sch. Med., Pa.) and S. G. Schultz. *Biochim Biophys Acta* 211(2):376-378, 1970.

7845 FAILURE OF THE HUMAN RECTUM TO ABSORB ELECTROLYTES AND WATER. *(E.)* Devroede, G. J. (Mayo Clin., Rochester, Minn.) and S. F. Phillips. *Gut* 11(5):438-442, 1970.

7846 PRESENT UNDERSTANDING OF THE INTERACTION OF DRUGS AND FOOD DURING ABSORPTION. *(E.)* Krondi, A. (Dept. Med., U. Toronto, Ontario, Canada). *Canad Med Ass J* 103(4):360-364, 1970.

7847 TOTAL IRON-BINDING CAPACITY OF PLASMA IN NORMALS AND HYPERTHYROID PATIENTS UNDER ORAL OVERLOADING. *(E.)* Sottano De Russo, E. (Fac. Med. Sci., Natl. U. Cuyo, Mendoza, Argentina) and J. E. Itoiz. *Amer J Clin Path* 54(1):82-89, 1970.

7848 RETENTION TIME OF PENICILLIN IN INTESTINE OF GUINEA PIGS. *(Rus.)* Toshkov, A. (Inst. Microbiol., Bulgarian Acad. Sci., Sofia), I. Abrashev and D. Georgiev. *Antibiotiki* 15(5):422-426, 1970.

7849 AGE DEPENDENT DIFFERENCES OF DIGESTION. *(Ger.)* Dietz, F. (Med. Clin. Humboldt U., Berlin, Germany) and G. Bruschke. *Deutsch Gesundh* 25(23):1065-1071, 1970.

7850 COMPARISON OF THE ABSORPTION AND METABOLIC PRODUCTS OF SUCROSE AND ITS MONOSACCHARIDES IN MAN. *(E.)* Cook, G. C. (Dept. Med., U. Zambia, Lusaka). *Clin Sci* 38(6):687-697, 1970.

7851 PHARMACOKINETIC METHODS FOR THE EVALUATION OF INTESTINAL ABSORPTION. *(Ger.)* Kubler, W. (U. Child. Clin. Kiel, Germany). *Z Kinderheilk* 108(3):187-196, 1970.

- P:Morph (7775) (7805)
- P:Motil (7853)
- P:Secr:Hepatobil (7944)
- P:Secr:Int (7989)
- D:Stomduo (8129)
- D:S.Intest:Malabs (8166) (8167)
- D:Livbil (8307) (8314)
- D:Livbil:Cirrh (8374)
- D:Gen (8483)

MOTILITY

7852 EFFECT OF ALCOHOL ON GASTRIC EMPTYING IN MAN. *(E.)* Barboriak, J. J. (Marquette Sch. Med., Milwaukee, Wisc.) and R. C. Meade. *Amer J Clin Nutr* 23(9):1151-1153, 1970.

The effect of preprandial alcohol on gastric emptying was investigated in 8 healthy men with the use of ^{51}Cr chloride (300 μC) as the marker and external counting of radioactivity. After a balanced test meal containing about 60 g fat, an exponential decrease of radioactivity from the gastric area with an average half-time of 105 min was observed. Ingestion of 4 oz whiskey before the meal increased the emptying time by 99 min. Since animal studies have shown that pure alcohol is an effective inhibitor of gastric emptying, the congeners present in the whiskey were probably of minor importance.

7853 MORPHOLOGICAL AND AUTORADIOGRAPHIC INVESTIGATION OF ALTERATIONS IN THE SMALL INTESTINAL MUCOSA OF RATS WITH BLIND LOOPS. *(Ger.)* Lohrs, U. (Path. Inst. U. Cologne, Germany), B. Wiebecke and H. J. Castrup. *Virchows Arch Path Anat* 350(2):150-165, 1970.

Changes in the jejunal mucosa of rats produced by isoperistaltic, self-filling and blind or antiperistaltic, self-emptying pouches of 4 months duration were investigated histologically and radiographically after i.p. injection of tritiated thymidine. All blind pouches showed circumscribed areas of mucosal changes, chiefly in their terminal portion; self-filling pouches presented subtotal villous atrophy and hyperregenerative atrophy associated with increased regeneration in the deepened crypts, as evident from the histological findings and autoradiographs. Marked hypertrophy of the muscularis propria, and localized inflammatory reactions were also observed. The histochemical non-specific alkaline phosphate reaction was markedly diminished, or missing, in only those areas of blind pouches which showed marked histopathology. Self-emptying pouches showed similar but considerably less changes, and mucosal hypertrophy was noted in the rest of the small intestine.

7854 METABOLIC ACTIONS IN INTESTINAL SMOOTH MUSCLE ASSOCIATED WITH RELAXATION MEDIATED BY ADRENERGIC α- AND β-RECEPTORS. *(E.)* Andersson, R. (Sch. Med., Linkoping, Sweden) and E. Mohme-Lundholm. *Acta Physiol Scand* 79(2):244-261, 1970.

The metabolic responses associated with relaxation produced by selective stimulation of adrenergic α-receptors with phenylephrine and of β-receptors with isoprenaline were studied in rabbit colonic muscle. The α-receptor-induced relaxation was not accompanied initially by any metabolic effects but a latency period of 3 min decreased the phosphorylase *a* activity, the cyclic AMP content and the concentrations of hexose phosphates and lactate and increased the concentration of high-energy phosphate compounds (ATP and CrP). These effects were inhibited by dibenamine. The relaxation induced via adrenergic β-receptors was preceded by an increase in the cyclic AMP content and the phosphorylase *a* activity, an increase in the concentration of hexose phosphates and lactate and an initial decrease of the ATP and CrP concentrations, which after 10 min was succeeded by an increase. The magnitudes of the relaxing and metabolic responses following stimulation of β-receptors were correlated with regard to time and dose. These responses were blocked by an adrenergic β-receptor blocking agent (sotalol) and were also eliminated in carbohydrate-poor muscle. The relaxing and metabolic effects of isoprenaline could be reproduced completely by cyclic AMP, only incompletely by 5'AMP and not at all by other tested cyclic nucleotides.

7855 RECENT STUDIES OF COLONIC AND RECTAL MOTOR ACTION. *(E.)* Mann, C. V. (St. Mark's Hosp. London, England) and J. D. Hardcastle. *Dis Colon Rectum* 13(3):225-230, 1970.

7856 THE SCHULTZ-DALE RESPONSE OF THE LONGITUDINAL MUSCLE STRIP PREPARATION OF GUINEA-PIG ILEUM. *(E.)* Dale, M. M. (Dept. Pharmacol., U. Coll., London, England) and L. Zilletti. *Brit J Pharmacol* 39(3):542-555, 1970.

7857 THE EFFECTS OF PAPAVERINE ON THE ELECTRICAL AND MECHANICAL ACTIVITY OF THE GUINEA PIG TAENIA COLI. *(E.)* Tashiro, N. (Dept. Physiol., Kyushu U., Fukuoka, Japan) and T. Tomita. *Brit J Pharmacol* 39(3):608-618, 1970.

7858 ADRENOCEPTORS IN THE CAT CHOLEDOCHODUODENAL JUNCTION STUDIES *IN SITU*. *(E.)* Liedberg, G. (Dept. Surg., U. Lund, Sweden) and C. G. A. Persson. *Brit J Pharmacol* 39(3):619-626, 1970.

SECRETION AND METABOLISM

Stomach

7859 THE ACTION OF CERULEIN ON GASTRIC SECRETION OF THE CHICKEN. *(E.)* Angelucci, L. (Inst. Med. Pharmacol., U. Rome, Italy) and G. Linari. *Europ J Pharmacol* 11(2):204-216, 1970.

The effect of cerulein (10-50 ng/kg i.v. or s.c.) was variable in stimulating gastric secretion of chickens. In general, cerulein increased slightly the output of the fluid and solid components of gastric juice and generally raised the concentration of pepsin 20-40%. Slight tachyphylaxis particularly on the fluid and acid components was observed; cerulein stimulation of gastric secretion was completely inhibited by atropine but unaffected by drugs altering histamine stores. Cerulein was 4 times as effective on fluid and acid secretion as human gastrin I, and 15 times as effective on pepsin secretion; porcine secretin did not affect the chicken's gastric secretion.

7860 GASTRIC ACID RESPONSE TO PENTAGASTRIN AND HISTAMINE AFTER EXTRAGASTRIC VAGOTOMY IN DOGS. *(E.)* Grossman, M. I. (VA Ctr., Los Angeles, Calif.) and G. F. Stening. *Gastroenterology* 59(3): 364-371, 1970.

The effect of extragastric vagotomy (cutting the hepatic and celiac branches) on the gastric acid response to pentagastrin (4-32 μg/kg/hr) and histamine (0.04-0.32 mg/kg/hr) was studied in dogs. An increase in the submaximal and maximal responses from vagally denervated stomach (main stomach with selective gastric vagotomy or Heidenhain pouch) was seen only with pentagastrin stimulation, not with histamine, and only in vagally denervated stomach, not in the main stomach with intact vagal innervation. This effect appears to be the result of withdrawal of an inhibitor of unknown source and nature that is released by the spontaneous activity of vagal efferent fibers.

7861 EFFECT OF CERULEIN ON HISTAMINE AND PENTAGASTRIN-INDUCED GASTRIC SECRETION IN MAN. *(E.)* Konturek, S. J. (Med. Acad. Cracow, Poland) and B. Gabrys. *Amer J Dig Dis* 15(9):791-795, 1970.

The effect of cerulein, a decapeptide isolated from frog skins, on basal and on histamine- or pentagastrin-stimulated gastric acid secretion was studied in 6 human subjects. This peptide, added in a dose of 0.1 μg/kg/hr to an i.v. infusion of pentagastrin (2.0 μg/kg/hr), produced approximately 50% inhibition of near maximal gastric acid secretion, but stimulated secretion slightly when given alone. However, it increased gastric acid response to histamine diphosphate infused i.v. in a dose of 40 μg/kg/hr. The hypothesis of hormonal interaction was applied to explain the inhibitory and stimulatory effect of cerulein on pentagastrin- and histamine-induced gastric acid secretion in man.

7862 GASTRIC AND PANCREATIC RESPONSES TO JEJUNAL DISTENTION: EFFECT OF EXTRACORPOREAL MESENTERIC VASCULAR PERFUSION. *(E.)* Chung, R. S. K. (Beth Israel Hosp., Boston, Mass.), D. Fromm, L. Trencis and W. Silen. *Gastroenterology* 59(3): 387-395, 1970.

The effects of jejunal distention on gastric and pancreatic secretion were studied in dogs with intact jejunal and ileal blood supply and in dogs with an isolated extracorporeal perfusion preparation of the jejunum and ileum. Distention of the proximal jejunum increased gastric secretion from the intact stomach and increased protein output in the pancreatic secretion of dogs given a constant infusion of secretin. When the blood supply of the jejunum and ileum were isolated and perfused extracorporeally (the autonomic nerves remaining intact as verified by electrical stimulation), distention of the jejunum produced no increase in gastric acid or pancreatic protein output. In 6 dogs the blood supply was successfully reconstituted, and distention of the jejunum again increased gastric acid or pancreatic protein output; ileal absorption of glucose against a concentration gradient remained unaltered throughout and histology of the bowel was normal. Long nervous reflex arcs apparently did not play a significant role in eliciting the gastric or pancreatic response when the small intestine was stimulated by distention, but effects were humoral and were compatible with those of gastrin or cholecystokinin-pancreozymin.

7863 EFFECTS OF ULCEROGENIC AND ANTIULCER DRUGS ON GASTRIC SECRETION IN RATS. *(E.)* Catanese, B. (Rome, Italy), R. Lisciani and B. Silvestrini. *Pharmacol Res Commun* 2(2):83-90, 1970.

The effects of benzydamine, reserpine, proxazole, banthine and indomethacin on gastric secretion in rats were investigated. Indomethacin (12.5 mg/kg s.c.) had no effect on secretion, but reserpine (5 mg/kg s.c.) increased production of HCl (control 298; treatment 416 mg HCl/100 ml gastric juice) and pepsin and decreased gastric juice and mucin slightly. Benzydamine (100 mg/kg p.o.) significantly decreased production of HCl (317 to 256 mg HCl/100 ml gastric juice) and increased mucin production (410 to 580 mg%). Proxazole (100 mg/kg p.o.) had no antisecretive action, while the mucin production was increased (468 to 609 mg%). Banthine (10 mg/kg s.c.) had a marked antisecretive action on all gastric juice components.

7864 THE PEPSINS FROM HUMAN GASTRIC MUCOSAL EXTRACTS. *(E.)* Etherington, D. J. (Agric. Res. Counc. Meat Res. Inst., Langford, Bristol, England) and W. H. Taylor. *Biochem J* 118(4):587-594, 1970.

Gastric mucosal pepsins and pepsinogens in stomach extracts of 2 normal subjects, 7 patients with gastric adenocarcinoma and 2 patients with duodenal ulcer were investigated by agar-gel electrophoresis and by ion-exchange chromatography. Of the 8 zones of proteolytic activity that have previously been reported in normal human gastric juice, 7 were detected in activated fundic mucosal extracts, 4 of which were attributed to discrete pepsins, numbered 1, 3a, 3 and 5. Zone 7 resulted from the activity of one or more alkali-stable enzymes referred to as gastric proteinases rather than as pepsins; zone 7 was more evident in mucosal extracts than in gastric juice. Zones 4 and 6 seemed to result from the activity of a pepsin-inhibitor complex and of an unactivated zymogen, resp. Pyloric mucosal extracts contained principally zone 5 but also zones 6 and 7; these zones behaved similarly to the corresponding zones of fundic extracts, but pyloric pepsin 5 migrated slightly faster on agar-gel electrophoresis than did fundic pepsin 5 and was a different enzyme (zones 1 to 4 were absent).

7865 EVIDENCE THAT HISTAMINE IS NOT THE MEDIATOR OF ACID SECRETION IN THE RAT. *(E.)* Johnson, L. R. (U. Oklahoma Med. Ctr., Oklahoma City) and D. Aures. *Proc Soc Exp Biol Med* 134(3):880-884, 1970.

In order to see whether or not histamine release takes place during the inhibition of acid secretion, 12 fasted rats were injected i.p. with either saline, pentagastrin (125 μg/kg) or pentagastrin plus secretin (75 units/kg) and killed 90 min later. Pentagastrin and the combination of pentagastrin and secretin released 50% of the histamine contained in the wall of the oxyntic gland area of the stomach. Therefore, secretin does not inhibit gastrin-stimulated secretion by inhibiting histamine release as has been hypothesized. Since this dose of secretin completely inhibits acid secretion stimulated by 125 μg/kg of pentagastrin in rats but has no effect on a comparable amount of histamine stimulated secretion, gastrin probably stimulates the parietal cell without the intervention of histamine.

7866 RESPONSE OF CANINE GASTRIC MUCOSA TO HISTAMINE FOLLOWING EXPERIMENTAL IMPAIRMENT OF THE GASTRIC MUCUS BARRIER. *(E.)* Kowalewski, K. (Surg. Med. Res. Inst., U. Alberta, Edmonton, Canada), J. F. Schier and A. Koheil. *Canad J Surg* 13(3):295-302, 1970.

Experimental impairment of the gastric mucus barrier was produced by introducing 2N NaCl into Heidenhain pouches for 2 hr and washing out large amounts of neutral glycoproteins. After maximal intra-arterial histamine stimulation for 6 hr, pouches deprived of their mucus barrier secreted gastric juice rich in mucosubstances and in protein; the mucosa of these pouches resembled acute hemorrhagic gastritis with edema, congestion, superficial submucosal and subserosal hemorrhagic spots, mucosal erosions and acute ulcers. Pouches washed with 0.15 N NaCl and stimulated with histamine for 6 hr secreted gastric juice with less mucosubstances and protein than the pouches washed with 2N NaCl and appeared macroscopically and histologically normal at the end of the experiment.

7867 THE EFFECT OF C-TERMINAL GASTRIN TETRAPEPTIDE AND ITS ANALOGUES ON THE GASTRIC FUNCTION IN CATS AND DOGS. *(Rus.)* Kimenis, A. A. (Inst. Organic Synthesis, Latvian SSR Acad. Sci., USSR) and Z. A. Atare. *Farmakol Toksik* 33(3):333-336, 1970.

7868 PARTICIPATION OF SEROTONIN IN THE GASTRIC SECRETORY FUNCTION. *(Rus.)* Grechishkin, L. L. (Acad. Med. Sci., Leningrad, USSR). *Farmakol Toksik* 33(3):328-332, 1970.

7869 UROCHOLECYSTOKININ AND GASTRIC SECRETION. *(Rus.)* Popova, E. A. (1st Moscow Med. Inst., USSR) and T. V. Goltyakova. *Ter Arkh* 42(5):34-36, 1970.

7870 STIMULATION OF GASTRIC ACID SECRETION WITH PENTAGASTRIN. *(Ger.)* Gulzow, M. (Med. U. Clin. Rostock, Germany), R. Arendt and G. Henninghausen. *Deutsch Gesundh* 25(17):771-774, 1970.

7871 THE EFFECTS ON HUMAN GASTRIC SECRETION OF PROLONGED CONTINUOUS INTRAVENOUS INFUSIONS OF MAXIMAL AND SUPRAMAXIMAL DOSES OF HISTAMINE ACID PHOSPHATE AND PENTAGASTRIN. *(E.)* Aubrey, D. A. (Welsh Natl. Sch. Med., Cardiff). *Gut* 11(5):392-394, 1970.

7872 EFFECTS OF HISTAMINE ACID PHOSPHATE AND PENTAGASTRIN ON GASTRIC SECRETION IN NORMAL HUMAN SUBJECTS. *(E.)* Aubrey, D. A. (Welsh Natl. Sch. Med., Cardiff) and A. P. M. Forrest. *Gut* 11(5):395-404, 1970.

7873 THE EFFECT OF ENTERECTOMY ON GASTRIC SECRETION IN DOGS WITH BILIARY FISTULAS. *(E.)* Landor, J. H. (Coll. Med., U. Florida, Gainesville), B. R. Behringer and R. A. Wild. *Amer J Dig Dis* 15(7):633-636, 1970.

7874 GASTRIC ACID SECRETION FROM THE MUCOSA IN RESPONSE TO SYNTHETIC GASTRIN AND PENTAGASTRIN. *(E.)* Oberhelman, H. A., Jr. (Stanford U.

Sch. Med., Palo Alto, Calif.), J. Lear and S. Kohatsu. *Amer J Dig Dis* 15(7):627-631, 1970.

7875 THE INFLUENCE OF 1-[3-(1-CYCLOHEXENYL)-3-PHENYLPROPYL]-1-METHYLPIPERIDINIUM BROMIDE (HOE 019) ON GASTRIC SECRETION IN THE RAT. *(E.)* Aust, G. (Dept. Pharmacol., Christian Albrechts U., Kiel, Germany) and P. A. Van Zwieten. *Arzneimittelforschung* 20(8):1097-1100, 1970.

7876 CHRONIC EFFECTS OF NICOTINE ON RAT GASTRIC SECRETION. *(E.)* Thompson, J. H. (U. California Los Angeles Sch. Med.), C. A. Spezia and M. Angulo. *Experientia* 26(6):615-617, 1970.

o P:Morph (7772) (7785) (7819) (7822)
o P:Secr:Int (7987)
o P:Gen (7992)
o D:Stomduo (8090) (8105)
o D:Livbil:Cirrh (8370)

SECRETION AND METABOLISM

Pancreas

7877 ACTION OF CERULEIN ON PANCREATIC SECRETION IN MAN. *(E.)* Agosti, A. (Dept. Pharmacol., U. Parma, Italy), S. Biasioli and G. Bertaccini. *Pharmacol Res Commun* 2(2):125-133, 1970.

The effect of cerulein on pancreatic secretion in 20 normal, male subjects (28-46 yr) was investigated. Cerulein given i.v. (0.10 μg/kg) caused an immediate but short-lasting (15 min) increase in duodenal juice volume (10 to 38 ml/15 min); i.m. cerulein (0.75 μg/kg) caused a more gradual but sustained volume increase (12 to 26 ml/15 min), which lasted more than 1 hr. An immediate sharp rise in amylase and trypsin concentration resulted from i.v. cerulein, but i.m. cerulein produced a lower peak effect in the second 15 min period after injection with greater decline in the last periods. Almost identical changes in concentrations of electrolytes were produced by i.v. or i.m. cerulein with Na$^+$ concentration increasing from 136 to 151 mEq/l, Cl$^-$ concentration decreasing from 115 to 99 mEq/l and HCO$_3^-$ concentration increasing from 10 to 27 mEq/l. In 3 subjects flush, mild tachycardia, sweating and nausea appeared a few min after 0.10 μg/kg cerulein i.v. and lasted approximately 10 min. Cerulein may offer some practical advantages over cholecystokinin-pancreozymin in testing of pancreatic function in man with or without simultaneous administration of secretin.

7878 THE ACTION OF CERULEIN ON PANCREATIC AND BILIARY SECRETIONS OF THE CHICKEN. *(E.)* Angelucci, L. (Inst. Med. Pharmacol., U. Rome, Italy M. Baldieri and G. Linari. *Europ J Pharmacol* 11(2): 217-232, 1970.

Cerulein strongly stimulated pancreatic secretion in chickens when administered by i.v. infusion (threshold rates of 0.1-0.25 ng/kg/min). S.c. injection proved ineffective up to 5 μg/kg; by rapid i.v. injection the action was manifest only with 50 ng/kg. Cerulein increased output of fluid, bicarbonate and enzymes, greatly enhancing the enzyme concentration; atropine inhibited the effect of cerulein on enzyme concentration only. Porcine secretin had no effect on the chicken's pancreatic secretion. Flow of hepatic bile and the output of solid biliary components were also stimulated by cerulein at threshold doses of 10 ng/kg by rapid i.v. injection, and 0.5 ng/kg/min by i.v. infusion; these actions were not inhibited by atropine. Cerulein hastened plasma clearance and biliary excretio of BSP, and it increased output of cystic bile by stimulating gall bladder motility. Tachyphylaxis to effects of cerulein on pancreatic or biliary secretions was not seen.

7879 PHARMACOLOGICAL STUDIES ON THE REGULATION OF PANCREATIC SECRETION IN PIGS. *(E.)*

Hong, S. S. (Dept. Pharmacol., Yonsei U., Seoul, Korea) and D. F. Magee. *Ann Surg* 172(1):41-48, 1970.

Gastric acid was diverted from the upper small intestine and a number of foodstuffs and HCl were introduced into the duodenum in pigs with pancreatic fistulas. The pattern of volume, amylase, lipase and protein secretion depended on the stimulus. Ethanol (20%) was a potent stimulant of amylase (900%). The application of a local anesthetic (oxethazine 2 mg/ml) to the duodenal mucosa reduced the usual increase in juice volume or enzymes following intraduodenal peptone, HCl and oleic acid. Atropine and pentolinium tartrate reduced the enzyme and volume responses to all intraduodenal stimuli, as well as to secretin and pancreozymin stimulation.

7880 ESTIMATION OF THE HALF LIFE OF CHOLECYSTOKININ. *(Ger.)*

Lehnert, P. (2nd Med. U. Clin., Munich), H. Stahlheber, M. M. Forell, F. H. Dost, H. Fritz, M. Hutzel and E. Werle. *Hoppe Seyler Z Physiol Chem* 351(8):983-989, 1970.

The $t_{1/2}$ of cholecystokinin-pancreozymin, which cannot be determined directly, was estimated by evaluation of the rate of enzyme secretion from cannulated pancreatic ducts of 10 anesthetized dogs. Comparing activity curves of trypsin, amylase and lipase with the i.v. (femoral) and intra-arterial (pancreaticoduodenal) injected dose, the $t_{1/2}$ of 1.8 min for cholecystokinin-pancreozymin was estimated from the slope of the obtained curves. The $t_{1/2}$ was not constant due to double logarithmic decrease in activity.

7881 STIMULATION OF PANCREATIC SECRETION BY INTRADUODENAL INFUSION OF BILE-SALTS. *(E.)*

Wormsley, K. G. (Mayfield Hosp., Dundee, Scotland). *Lancet* 2(7673):586-588, 1970.

The pancreatic secretory response to intraduodenal administration of bile salts was measured in 14 individuals with normal outputs of bicarbonate and of enzymes in response to i.v. secretin (0.25 U/kg/hr). After 40 min infusion of secretin, bile salts were introduced into the duodenum as a rapid injection (6 g in 20 ml) or as a continuous infusion (36 g/hr). The output of pancreatic enzymes increased to levels which were usually 75-80% of the response to i.v. infusion of secretin plus pancreozymin. Probably the mechanism of action of bile salts in stimulating the pancreas represents yet another mechanism for integrating functions of the pancreas, biliary tract and small intestine.

7882 SYNTHETIC AND SECRETORY EFFECTS OF CHOLECYSTOKININ-PANCREOZYMIN ON THE PIGEON PANCREAS. *(E.)*

Sahba, M. M. (Med. Coll. Georgia, Augusta), J. A. Morisset and P. D. Webster. *Proc Soc Exp Biol Med* 134(3):728-732, 1970.

- o P:Morph (7780) (7790) (7811)
- o P:Secr:Stom (7862)
- o D:Stomduo (8130)

SECRETION AND METABOLISM

Hepatobiliary Tract

7883 STUDIES ON THE REGULATION OF HEPATIC BILE FLOW: THE INTESTINAL PHASE OF BILIARY SECRETION. *(E.)*

Sum, P. T. (Harvard Med. Sch., Boston, Mass.), H. Ross, R. S. K. Chung, L. Trencis and W. Silen. *Amer J Surg* 120(2):160-165, 1970.

In order to elucidate the mechanism of hepatic bile flow stimulation through acidification of the proximal small intestine, 8 mongrel dogs were prepared with cholecystectomy, ligation of the minor pancreatic duct, gastric and duodenal cannulas, and Thiry-Vella fistulas of the distal duodenum and jejunum. Perfusion of the distal duodenum or jejunum with acid caused significant increases in biliary volume (from 2.4 to 3.5 ml/15 min and from 2.2 to 2.9 ml/15 min, resp.) and bicarbonate concentrations (from 22 to 40 mEq/l) as well as gastric acid output (from 0.1 to 1.7 and from 0.6 to 2.4 mEq/30 min, resp.). Acid perfusion of the jejunum also caused an increase in chloride concentration (from 59 to 68 mEq/l). Responses similar to those of jejunal perfusion were noted when cholecystokinin-pancreozymin, 2 U/kg/hr i.v. was given. Although the additional simultaneous infusion of secretin, 4 U/kg/hr, accentuated the changes in biliary volume and bicarbonate concentration, gastric acid output was reduced. Perfusion of the duodenum with a 5 per cent Bacto-Peptone solution caused no significant change in biliary flow. The physiologic effects of acid perfusion of the distal duodenum of jejunum are best explained by the simultaneous release of both secretin and cholecystokinin-pancreozymin.

7884 THE METHYLATION OF TRANSFER RIBONUCLEIC ACID DURING REGENERATION OF THE LIVER. *(E.)* Tidwell, T. (U. Texas M.D. Anderson Hosp. Tumor Inst., Houston). *J Cell Biol* 46(2):370-378, 1970.

The methylation of transfer RNA (tRNA) during regeneration (following 2/3 hepatectomy) of rat liver was investigated, and the time courses of methylation and synthesis of tRNA during rat liver regeneration were compared, using 6-orotic acid-^{14}C and ^{3}H-methyl-L-methionine as precursors in double label pulses. The amount of extractable tRNA increased (2.1-12.5%) 18-24 hr post-hepatectomy. The peaks of both ^{14}C and ^{3}H radioactivity reached a maximum before DNA synthesis reached a maximum, and increased tRNA methylation preceded tRNA synthesis by several hr during regeneration. The ratio of the relative rate of methylation to the relative rate of synthesis correlated with the rise and fall of protein synthesis during regeneration. Apparently, methylation and synthesis of tRNA are only weakly coupled, but changing methyl content of the tRNA pool resulting from differential tRNA methylase and polymerase activities may regulate the rate of protein synthesis in the cell cycle at the translational level.

7885 THE EFFECT OF PARTIAL HEPATECTOMY ON THE METABOLISM OF URETHAN IN YOUNG ADULT MICE. *(E.)* Grogan, D. E. (Dept. Biol., U. Missouri, St. Louis), M. Lane, R. A. Liebelt and F. E. Smith. *Cancer Res* 30(6):1806-1811, 1970.

Carbonyl-^{14}C urethan metabolism was studied in intact and partially hepatectomized mice 8- to 10-week-old. No major differences were noted between intact and operated mice in the urethan concentration in whole blood and liver or in subcellular fractions, DNA, and RNA of liver. Radioactivity was not detected in the blood or liver of intact and operated mice 24 hr after each of 3 injections of radioactive urethan 1 mg/g given on alternate days. Since urethan metabolism appeared to be the same in both intact and operated rats, the enhanced susceptibility of the liver after hepatectomy to the carcinogenic effect of urethan are probably due to increased rates of cell proliferation.

7886 HYDROXYLATION OF ALIPHATIC COMPOUNDS BY LIVER MICROSOMES: I. THE DISTRIBUTION PATTERN OF ISOMERIC ALCOHOLS. *(E.)* Frommer, U. (Biochem Inst. U. Giessen, Germany), V. Ullrich and H. Staudinger. *Hoppe Seyler Z Physiol Chem* 351(8):903-912, 1970.

Hydroxylation of methylcyclohexane, 2-methylbutane, 2,2-dimethylpropane, isobutane, n-pentane and n-butane was studied in liver microsomes of phenobarbital-treated rats, mice, rabbits and guinea pigs. Except for the primary alcohols of n-pentane, n-butane and isobutane all isomeric alcohols were found as hydroxylation products. Common to all substrates and independent of the species was a high ratio of the product of hydroxylation at secondary/primary CH-bonds and a preferred attack at the tertiary CH-bond compared to the secondary CH-bond. Small but significant differences were observed in the distribution of isomeric alcohols obtained by microsomal hydroxylation in different species indicating that steric differences in the active center of cytochrome P-450 do exist. Probably, due to the smallness of the substrates and their lack of functional groups, no rigid steric fixation of the compounds at the active site of the enzyme occurred, and the position of attack was influenced mainly by the reactivity of the active oxygen in microsomes.

7887 AGENTS AFFECTING LIPID METABOLISM: XXXVIII. EFFECT OF NEOMYCIN ON CHOLESTEROL BIOSYNTHESIS AND BILE ACID PREPARATION. *(E.)* Cayen, M. N. (Ayerst Res. Lab., Montreal, Quebec, Canada). *Amer J Clin Nutr* 23(9):1234-1240, 1970.

Male albino rats were fed neomycin (0.5% in the drinking water for 14 days) and liver homogenates and intestinal sections were prepared and incubated simultaneously with 2-^{14}C-acetate and ^{3}H-mevalonate and the incorporation of these precursors into cholesterol was determined. Neomycin had no effect on the incorporation of precursors into hepatic cholesterol but caused almost a twofold increase in the incorporation of ^{14}C-acetate into intestine cholesterol. A similar dose of the bile acid sequestering agent, cholestyramine, caused more than a fourfold increase in both hepatic and intestinal cholesterol formation. Neomycin had no effect on serum and liver sterols, but caused a decrease in intestine sterol levels. Buffered (pH 6.4) solutions of neomycin when added to buffered solutions of sodium salts of various bile acids formed insoluble precipitates with deoxycholate, taurodeoxycholate and taurochenodeoxycholate, but did not precipitate cholate, taurocholate, or taurodehydrocholate. The hypocholesterolemic action of neomycin in man and the chick may be mediated by precipitation of dihydroxy bile acid conjugates.

7888 METABOLISM OF ETHANOL BY RAT LIVER MICROSOMAL ENZYMES. *(E.)* Khanna, J. M. (Dept. Pharmacol., U. Toronto, Ontario, Canada), H. Kalant and G. Lin. *Biochem Pharmacol* 19(8):2493-2499, 1970.

Rat liver microsomes oxidized ethanol to acetaldehyde *in vitro* in the presence of NADPH and oxygen, at an optimal pH of 7.0-7.4. The average oxidation activity was 3.8 μmoles acetaldehyde/mg microsomal protein/min and was inhibited markedly by addition of deoxycholate, aminotriazole, cyanide and azide, but only weakly by digitonin and not at all by pyrazole or SKF 525-A (β-diethylaminoethyl-diphenylpropyl acetate). Hydrogen peroxide and barium peroxide were effective in place of NADPH and oxygen when initial reaction rates were considered; this activity was also inhibited by cyanide and by aminotriazole. Oxidation of ethanol by hepatic microsomes *in vitro* is apparently brought about by a combination of catalatic activity plus a system which generates H_2O_2 from the oxidation of NADPH, rather than by the intact mixed-function oxidase (drug-metabolizing) system.

7889 DISPLACEMENT OF ALBUMIN-BOUND BILIRUBIN BY FREE FATTY ACIDS: IMPLICATIONS FOR NEONATAL HYPERBILIRUBINEMIA. *(E.)* Starinsky, R. (Hadassah U. Hosp., Jerusalem, Israel) and E. Shafrir. *Clin Chim Acta* 29(2):311-318, 1970.

The interaction of bilirubin, linoleate and human plasma albumin was investigated in an isolated model system, designed to evaluate the competitive effect of free fatty acids on the binding of unconjugated bilirubin by albumin. Increasing amounts of linoleate were added to bilirubin-albumin solutions at a constant molar ratio, and the mixtures passed through Sephadex G-25 columns to absorb the displaced bilirubin, which was then eluted and measured. In solutions with a molar ratio of bilirubin/albumin of 0.5 or 1.0 no displacement occurred when the molar ratio of linoleate relative to albumin was below 5; above a molar ratio of linoleate/albumin of 6, free bilirubin in the system rose sharply. In solutions with a molar ratio of bilirubin/albumin of 1.8, bilirubin dissociated from albumin markedly when the molar ratio of linoleate relative to albumin approached 4. The displacement of bilirubin apparently started only after most of the free fatty acids binding sites on albumin with high association constants were saturated, and the competition involved mainly multiple binding sites with low association constants. In two groups of infants without or with hyperbilirubinemia requiring exchange transfusion, the molar ratio of free fatty acids/albumin in plasma ranged from 1.07 to 2.37. Free fatty acids in neonates, although elevated, do not seem to reach concentrations, relative to albumin, which are effective in bilirubin dissociation.

7890 THE DISTRIBUTION OF ALBUMIN SYNTHESIS THROUGHOUT THE LIVER LOBULE. *(E.)* Schreiber, G. (Inst. Biochem., U. Freiburg, Germany), R. Lesch, U. Weinssen and J. Zahringer. *J Cell Biol* 47(1):285-289, 1970.

Localization of albumin synthesis in rat liver was studied by radioautography. Injection of L-leucine-4,5-$^3H_2$(0.2 mC/100 g) into the caval vein of rats led to uniform labeling of protein throughout the liver lobule. Injection into the portal vein produced labeling of protein predominantly in the peripheral regions of the lobule. After both kinds of injection procedures, albumin was purified from liver homogenates to constant specific radioactivity. The ratio of the radioactivity incorporated into albumin to that incorporated into total protein was the same in both cases (2.8 and 3.5%); the capacity to synthesize albumin appears to be distributed equally between the peripheral and the central regions of the liver lobule.

7891 RAT LIVER OXIDATIVE N-DEALKYLASE AND N-OXIDASE ACTIVITIES AS A FUNCTION OF ANIMAL AGE. *(E.)* Das, M. L. (Dept. Chem., U. Texas, Austin) and D. M. Ziegler. *Arch Biochem Biophys* 140(1):300-306, 1970.

The enzymic NADPH and oxygen-dependent oxidations of N,N-dimethylaniline, N-methylaniline, and N-methyl-*n*-octylamine were measured in microsomes isolated from liver homogenates of rats that varied in age from 3-24 weeks. The concentration of hepatic microsomal oxidative N-dealkylase enzymes was low in weanling rats, increased to a maximum in the young adults (6.6 to 10.0 nmole/min/mg), and then remained relatively constant or decreased in the older animals. The N,N-dimethylaniline N-oxidase activity, however, was consistently highest in liver microsomes from the older animals (7.8 nmole/min/mg); microsomes from the youngest rats catalyzed N-oxidation of 30% of the total N,N-dimethylaniline oxidized, whereas 48% of the N,N-dimethylaniline oxidized was converted to the amine-oxide by microsomes obtained from the oldest animals. In normal rats, there appears to be a direct correlation between hepatic N-oxidase activity and the age of the animal whereas microsomes from all ages of animals catalyzed the oxidative N-dealkylation and N-hydroxylation of both secondary amines tested; the highest N-hydroxylase rates were observed with microsomes from the older animals.

7892 DIFFERENTIAL LONG-TERM EFFECTS OF D-CHLORAMPHENICOL ON THE BIOGENESIS OF MITOCHONDRIA IN NORMAL AND REGENERATING RAT LIVER. *(E.)* Gonzalez-Cadavid, N. F. (Fac. Sci., Central U. Venezuela, Caracas), E. M. Avila Bello and J. L. Ramirez. *Biochem J* 118(4):577-586, 1970.

D-Chloramphenicol (20 mg i.p.) was administered daily for 4 weeks to normal and partially hepatectomized rats in order to investigate whether defective mitochondria could be induced *in vivo* in higher organisms as in yeast, and to measure the degree of inhibition of the mitochondrial function thus obtained. The antibiotic did not affect growth and increased the amount of liver protein without changing the mitochondrial yield. The respiration of isolated mitochondria from regenerated liver (regeneration completed) with succinate, α-oxoglutarate, isocitrate and malate was decreased in the chloramphenicol-treated rats, whereas in normal liver the antibiotic increased the mitochondrial oxygen consumption with succinate and did not significantly change the respiration with other substrates. Mitochondrial cytochromes and respiratory enzymes were also decreased in amount in regenerated liver from the treated rats and enhanced in normal liver. The protein specific radioactivities of most mitochondrial and microsomal subfractions 30 min after an injection of ^{14}C-leucine were decreased in regenerated liver treated with chloramphenicol; the incorporation of ^{14}C-leucine into proteins of most subfractions of liver slices was enhanced in normal rats treated with the antibiotic. In regenerated liver chloramphenicol seems to induce functionally defective mitochondria by inhibiting their biogenesis, whereas in normal liver the stimulation of respiration and protein synthesis is probably a secondary detoxication response.

7893 EFFECT OF DIETARY AMINO ACIDS ON AMINO ACID-CATABOLIZING ENZYMES IN RAT LIVER. *(E.)*

Nakano, K. (Dept. Agric. Chem, Nagoya U., Japan), T. Kishi, N. Kurita and K. Ashida. *J Nutr* 100(7): 827-836, 1970.

The effect of dietary amino acids on the level of hepatic tryptophan pyrrolase, threonine dehydratase and arginase was studied by their forcible administration to rats depleted of protein. Of 12 amino acids tested, only tryptophan and methionine caused a consistent increase in enzyme activities (tryptophan pyrrolase increased from 4 to 10 μmole/hr/liver). Feeding rats an equimolar complete amino acid mixture resulted in a maximal induction of the enzyme whereas the omission of both tryptophan and methionine caused little or no induction. The administration of these 2 functional amino acids did not cause any significant increase in the level of plasma urea, compared with that caused by the feeding of the complete amino acid mixture. In adrenalectomized rats hepatic tryptophan pyrrolase, which can be increased in intact rats by feeding either tryptophan or methionine, was activated and increased by feeding tryptophan but not methionine; the feeding of tryptophan and methionine resulted in a significant increase in the level of arginase and threonine dehydratase. Administration of cortisone acetate (5 mg) produced a significant increase in the level of all three enzyme activities. The level of amino acid-catabolizing enzymes in the liver of rats fed either tryptophan or methionine apparently can be elevated by hormone (adrenal) mediated and hormone independent mechanisms.

7894 DEVELOPMENT AND REGRESSION OF MORPHOLOGICAL AND BIOCHEMICAL CHANGES IN HAMSTERS AND MICE FED A CHOLESTEROL CHOLIC ACID CONTAINING DIET. *(E.)*

Bergman, F. (Surg. Clin. U. Umea, Sweden), A. H. Juul and W. Van Der Linden. *Acta Path Microbiol Scand* 78(2):179-191, 1970.

The morphological and biochemical changes in hamsters and mice fed a cholesterol cholic acid containing diet for 1 month were hepatomegaly, steatosis of the liver and high serum cholesterol levels accompanied by a massive accumulation of intracellular lipid droplets and birefractive cholesterol crystals in the parenchymal and Kupffer cells. Gallbladders were distended with atrophy of the mucous membrane in both species. The liver histology in mice returned to normal when the diet was changed to chow, but not in hamsters. The thyroid gland became hyperplastic with tightly packed irregular follicles lined with columnar epithelium in hamsters, but hypoplastic with dilated follicles filled with strongly PAS positive colloid in mice. The anterior pituitary gland of hamsters but not of mice showed an increase of so-called thyroidectomy cells, and an increase of stainable lipids was found in the adrenal cortex of both species. Since the endocrine glandular changes disappeared in both species, while livers of hamsters remained steatotic, the theory that thyroid hyperplasia is due to stimulation by the increased metabolic needs of the liver seems unlikely. In both hamsters and mice, the diet resulted in a decrease of the chenodeoxycholic acid concentration of the bile (control, 236 and 193 mg %; diet, 79 and 37 mg %, resp.), probably due to a diminished synthesis of this bile acid as a result of the continuous supply of cholic acid to the liver. The biliary deoxycholic acid concentration rose strikingly (control 260 mg %; diet 830 mg %) in hamsters, but not in mice, probably because hamsters cannot convert deoxycholic to cholic acid. A fall of the dihydroxy/trihydroxy bile acid ratio was noticed in mice, in which species gallstones eventually formed; whereas this ratio rose in hamsters, in which gallstones were not formed. Dissolution of gallstones accompanied by a drastic shift towards cholic acid occurred when the diet was extended for a longer period and it was found that the biliary acids/cholesterol ratio fell to much lower values in mice than in hamsters. When the diet was discontinued there was an unexplained rise of the chenodeoxycholic acid concentration in hamsters but not in mice.

7895 THE ALDEHYDE REACTION WITH BILIRUBIN OF BILE AND OF BILE PIGMENT IN THE ICTERIC LIVER. *(E.)*

Lillie, R. D. (Louisiana St. U. Sch. Med., New Orleans) and P. Pizzolato. *Virchows Arch Path Anat* 350(1):52-60, 1970.

Golden brown bile promptly turned green, even under oil, by addition of various aliphatic and aromatic aldehydes, such as formaldehyde, paraldehyde, chloral hydrate, isobutyraldehyde, glyoxal, glyoxalic acid, glutaraldehyde, benzaldehyde, *p*-dimethylaminobenzaldehyde and vanillin. With formaldehyde this color change was accompanied by spectroscopic alterations and by a decrease in bilirubin assay by the Malloy-Evelyn technic. Brown yellow icteric liver tissue was similarly colored green by immersion in formaldehyde, paraldehyde, chloral hydrate, benzaldehyde and *p*-dimethylaminobenzaldehyde, and was returned to yellow by reducing agents such as sodium bisulfite or thiosulfate, ferrous salts, acetone, and alcohols such as methyl, ethyl and ethylene glycol; this color cycle may be repeated at least three times. Formaldehyde also oxidizes ferrous salts to ferric, as well as reducing ferric salts to ferrous, incompletely in both instances, so that ferroso-ferric mixtures result. The weight of ferrous ferricyanide precipitates indicated a 16% oxidation of a ferrous sulfate solution and a 30% reduction of a ferric chloride solution. These two salts resp. reduced biliverdin to bilirubin and oxidized bilirubin to biliverdin in histochemical studies.

7896 CHOLINE AND BETAINE ALDEHYDE OXIDATION BY RAT LIVER MITOCHONDRIA.

(E.) Wilken, D.R. (Va. Hosp., Madison, Wisc.), M. L. McMacken, and A. Rodriquez. *Biochim Biophys Acta* 216(2):305-317, 1970.

Betaine aldehyde dehydrogenase (7% of the postnuclear enzyme) was demonstrated in well-washed mitochondria, equally distributed between the inner membrane and the inter-membrane plus matrix fractions; none was found in the outer membrane fraction. The mitochondrial enzyme was shown to be functional under all the conditions tested; betaine aldehyde generated within the mitochondria by choline oxidation or added externally was oxidized to betaine in significant amounts. The stoichiometry for the complete oxidation of choline or externally added betaine aldehyde was confirmed to be 2 and 1 moles, respectively, of O_2 utilized per mole of substrate added. Depending on the reaction conditions employed, considerable variation in the relative amount of choline oxidase and betaine aldehyde oxidase activities of mitochondria was observed when they were allowed to oxidize only a portion of the choline added.

7897 NEONATAL DIFFERENCES IN THE INDUCTION OF HEPATIC AMINOLEVULINIC ACID SYNTHETASE.

(E.) Woods, J. S. (Sch. Med., U. Washington, Seattle) and R. L. Dixon. *Biochem Pharmacol* 19(6): 1951-1954, 1970.

The induction of hepatic aminolevulinic acid synthetase by 3,4-dicarbethoxy-1,4-dihydrocollidine (500 mg/kg s.c. for 1-3 days) was studied in neonatal and adult rabbits. The basal activity *in vitro* of the aminolevulinic acid synthetase in newborn rabbits (32 nmole/g/hr) is 6-8 times that seen in adult animals, and the neonatal animals were relatively much less responsive to the inducing agent than the adult rabbits. The basal enzyme activity in newborn animals was only doubled while, in contrast, the synthetase activity in adult animals was increased 19-fold. The regulation of the synthesis of hepatic heme in neonatal animals may be less strictly controlled than in adults, indicating that synthesis of aminolevulinic acid synthetase during the neonatal period is semiconstitutive.

7898 STUDIES ON THE MECHANISM OF ENZYME INDUCTION: XV. INDUCTION PATTERNS AND SUBMICROSCOPIC CHANGES IN THE LIVER FOLLOWING PHENYLBUTAZONE IN RATS OF DIFFERENT AGES

(E.) Klinger, W. (Inst. Pharmacol. Toxicol., Friederich Schiller U., Jena, Germany), J. Elger, H. Franke, C. Reinicke, A. Traeger, H. Volkmann, I Wahrenberg and H. Ankermann. *Acta Biol Med German* 24(4):463-482, 1970.

Enzyme induction (liver fresh weight variations, hexobarbital sleeping time, aminophenazone N-demethylation, ascorbic acid excretion) and fine structure alterations of the liver were studied in pregnant rats, their fetuses, 5-, 10-day and 7-month-old rats following 3 treatments with phenylbutazone (50 to 200 mg/kg i.p.). Seven months old rats were additionally treated with phenylbutazone (50 and 100 mg/kg daily) for 1 month, and an increase in liver weight from 12 to 15 g was noted. Hexobarbital sleeping time (100 mg/kg) decreased from 150 min to 82 min in the 10-day-old group and aminophenazone N-demethylation (9000 x g liver homogenate supernate) was doubled in the same age group (50 mg/kg dose). Liver ascorbic acid concentrations increased slightly (from 0.22 to 0.27 mg/g liver) in the 5-day-old group (50 mg/kg dose), and no changes were noticed in fetuses of treated pregnant animals. Electron microscopy revealed no liver cell alterations in fetuses, while moderate proliferation of membranes of the smooth endoplasmic reticulum was seen in the 5- and 10-day-old groups. An overall increase in smooth endoplasmic reticulum was seen in the 7-month-old rats and pregnant rats (15th and 22nd day of pregnancy) and a general increase in lysosomes and atypical mitochondrial fine structures were also noticed. Both acute and subchronic phenylbutazone treatment of new-born and adult rats produced severe intrahepatic cholestasis.

7899 EFFECT OF SIZE ON THE RELATIVE RATE OF DEGRADATION OF RAT LIVER SOLUBLE PROTEINS.

(E.) Dehlinger, P. J. (Stanford U. Sch. Med., Calif.) and R. T. Schimke. *Biochem Biophys Res Commun* 40(6):1473-1480, 1970.

The effect of size on the relative rate of degradation of rat liver soluble proteins was investigated using a double isotope method (^{3}H-L-leucine and ^{14}C-L-leucine) to determine the relative turnover rates. The proteins of the supernatant fraction were separated on Sephadex G-200 both in the presence and absence of sodium dodecylsulfate, giving a size distribution based on subunit molecular weight (with sodium dodecyl sulfate and multimeric molecular weight (buffer alone). In both cases, greater degradation rates were associated with greater molecular weights.

7900 RELATION OF STEROID STRUCTURE TO ENZYME INDUCTION IN HEPATOMA TISSUE CULTURE CELLS.

(E.) Samuels, H. H. (New York U. Sch. Med., New York) and G. M. Tomkins. *J Molec Biol* 52(1):57-74, 1970.

The relation of steroid structure to tyrosine aminotransferase induction in hepatoma tissue culture cells was investigated. A wide variety of steroids were classified into 4 groups and defined as optimal inducers, sub-optimal inducers, anti-inducers and inactive compounds. Optimal inducers were cortisol, dexamethasone and corticosterone; concentrations which induced half maximally the steady state tyrosine aminotransferase activity were 6 X 10^{-8}, 8 X 10^{-9}, 3 X 10^{-7}M, resp. Sub-optimal inducers were 11β-OH progesterone, 11-deoxycortisol and deoxycorticosterone which induced the enzyme to a submaximal but characteristic level (35, 25 and 46% of maximum, resp.). When 11β-OH progesterone (1 X 10^{-5}M) was added to cortisol (1 X 10^{-7}M), the steady-state enzyme activity was not the sum of the individual steady-state levels, but was close to that induced by the sub-optimal inducer alone (combined 43%; alone 35%), indicating that sub-optimal inducers competitively inhibited induction by optimal inducers. Anti-inducers, testosterone and 17α-methyltestosterone, could not induce the enzyme, but competitively inhibited induction by optimal inducers. Inactive steroids (epicortisol, androstenedione, 20α-hydroxycortisol) neither induced nor inhibited enzyme induction. These differences in steroid behavior apparently do not result from differences in steroid uptake or metabolism, or from an effect on general cell protein synthesis or degradation of enzyme, but are probably due to the interaction of these steroids with an allosteric receptor system concerned with the regulation of synthesis of enzyme.

7901 MECHANISM OF CHOLESTASIS: I. EFFECT OF BILE ACIDS ON MICROSOMAL CYTOCHROME P-450 DEPENDENT BIOTRANSFORMATION SYSTEM *IN VITRO*. *(E.)* Hutterer, F. (Mount Sinai Sch. Med., City U., New York, N. Y.), H. Denk, P. G. Bacchin, J. B. Sckenkman, F. Schaffner and H. Popper. *Life Sci* 9(15):877-887, 1970.

The interaction of bile acids with isolated rat liver microsomes was studied *in vitro* and the change in cytochrome P-450 activity was compared with biotransformation rates seen in cholestatic rats. A Type I spectrum was obtained when 0.1 to 0.6 mM bile acids (except trihydroxyacids) were added to isolated microsomes, and aminopyrine, a Type I substrate, was competitively inhibited by these bile acids which also increased the activity of the NADPH-cytochrome P-450 reductase. Longer exposure of microsomes to higher concentrations of bile acids caused irreversible blocking or removal of the Type I binding site and a 70% inhibition of the Type I substrate metabolism. The metabolism of aniline, a Type II substrate, and the cytochrome P-450 content of the microsomes were unaffected by bile acids although increase of the bile acid concentration to 1.2 mM caused the degradation of cytochrome P-450 and a parallel decrease in the metabolism of Type II substrates. In rats with ligated bile ducts a corresponding decrease in the metabolism of Type I substrates and then of Type II substrates as well was observed. The molecular interaction of bile acids with microsomal cytochrome P-450 is probably responsible for the decreased activity of the hepatocellular biotransformation system in cholestasis.

7902 THE DISTRIBUTION AND SYNTHESIS OF DNA IN TWO CLASSES OF RAT LIVER NUCLEI DURING AZO DYE-INDUCED HEPATOCARCINOGENESIS. *(E.)* Sneider, T. W. (Baylor Coll. Med., Houston, Tex.), D. E. Bushnell and V. R. Potter. *Cancer Res* 30(6):1867-1873, 1970.

Nuclei from homogenates of livers from rats fed the hepatocarcinogen 3-methyl-4-dimethylaminoazobenzene (0.05% of diet) were separated into class N-I (hepatocyte) nuclei and class N-II (nonhepatocyte, "stromal") nuclei by discontinuous sucrose gradient centrifugation. Although 80% of the DNA was associaed with N-I nuclei at the beginning of the experiment, only about 25% could be recovered in the N-I fraction after 14 days of dye feeding. By the end of the experiment (42 days of continuous dye administration), the total liver DNA was approximately equally distributed between N-I and N-II nuclei. Alterations in the N-I/N-II ratio prior to 14 days occurred in the absence of increased DNA synthesis. Although there was a high degree of thymidine-methyl-^{3}H-labeling of DNA of both classes of nuclei after 14 days on the dye diet, much of the labeled DNA could not be recovered from livers of rats given injections of isotope earlier in the regimen and killed after 42 days on the dye diet.

7903 THE PHYSIOLOGICAL ROLE OF LIVER ALCOHOL DEHYDROGENASE. *(E.)* Krebs, H. A. (Radcliffe Infirm., Oxford, England) and J. R. Perkins. *Biochem J* 118(4):635-644, 1970.

Endogenous ethanol levels were determined with yeast alcohol dehydrogenase in the portal and hepatic veins and alimentary canal of rats given an ethanol-free diet. The mean alcohol concentration in the portal blood of normal rats was 0.045 mm and in the hepatic vein, inferior vena cava and aorta it was about 15 times lower. The contents of all sections of the alimentary canal contained measurable amounts of ethanol with the highest values (average 3.7 mm) found in the stomach. Infusion of pyrazole (an inhibitor of alcohol dehydrogenase) raised the alcohol concentration in the portal vein 10-fold and almost removed the difference between portal and hepatic venous blood. Addition of antibiotics to the food diminished the ethanol concentration of the portal blood to less than one-quarter and that of the stomach contents to less than one-fortieth. The concentration of alcohol in the alimentary canal and in the portal blood of germ-free rats was decreased to less than one-tenth in the alimentary canal and to one-third in the portal blood, but detectable quantities remained, probably formed from acetaldehyde resulting from the normal pathways of degradation of threonine, deoxyribose phosphate and β-alanine. Significant amounts of alcohol seem to be normally formed in the gastro-intestinal tract, absorbed into the circulation and almost quantitatively removed by the liver. Thus the function, or a major function, of liver alcohol dehydrogenase is the detoxication of ethanol normally present.

7904 THE DEVELOPMENT OF A TRANSIENT FATTY LIVER AFTER RELEASE FROM A TEN DAY STAY IN HYPOXIA CORRESPONDING TO AN ALTITUDE OF 600 m. *(Ger.)* Tribukait, B. (Karolinska Inst., Stockholm, Sweden) and K. Lindberg. *Beitr Path Anat* 140(4):419-429, 1970.

The liver fat contents of mice (22g) was increased by about 40% immediately after a 10-day stay in a chamber which had a pressure of 354 mm Hg, corresponding to altitude of 6000 m. Immediately after termination of the exposure, the hepatic fat showed a striking centrilobular accumulation; the fat content continued to increase, reaching twice the norm on the 4th day, showing histologically, at this time, a diffuse distribution. The composition of the liver returned to the level of controls 10 days after termination of exposure, although its weight was still moderately increased. The mice lost 10-20% body weight during the high altitude experiment, which they regained about 14 days after return to their normal environment. The hepatic changes were attributed to hypoxia, and may be related to increased radiation resistance.

7905 THE METABOLIC RESPONSE OF THE LIVER TO PORTACAVAL SHUNT. *(E.)* Smith, G. W. (U. Virginia Sch. Med., Charlottesville) and G. I. Mouzas. *Surgery* 68(2):341-349, 1970.

The effects of side-to-side and end-to-side portacaval shunts were compared in normal dogs on body and liver weight, liver blood flow, hepatic oxygen consumption, glucose metabolism, and ammonia clearance. Total body weight and liver weight were unaffected by a side-to-side shunt but were decreased approximately 20% after end-to-side shunt. Liver blood flow was reduced by both operations, but the reduction was 25% more in the end-to-side shunt. Hepatic oxygen consumption was similarly diminished in both groups, but again the change was 22% greater after end-to-side shunt. These changes resulted in only suggestive impairment of glucose metabolism, but ammonia clearance was decreased, especially by an end-to-side shunt. All of the physiologic and biochemical alterations were sustained in both groups for 1-3 months. Either type of shunt seemingly can cause hepatic metabolic derangements and a portacaval shunt may be poorly tolerated by patients with initially good liver blood flow.

7906 TRANSFER RNA PATTERN IN LIVERS OF RATS FED DIETS CONTAINING 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE. *(E.)* Goldman, M. (U. Texas M.D. Anderson Hosp. Tumor Inst., Houston) and A. C. Griffin. *Cancer Res* 30(6):1677-1680, 1970.

Comparisons were made of the reversed phase chromatography profiles of transfer RNA's (tRNA) prepared from the livers of normal rats and of rats fed a diet containing the hepatocarcinogen 3'-methyl-4-dimethylaminoazobenzene over an 8 week period and charged with ^{14}C- and ^{3}H-labeled amino acids. Portions of the lysyl-, leucyl-, phenylalanyl-, and tyrosyl-tRNA peaks from the precancerous livers were eluted from the columns earlier than the corresponding tRNA of normal livers. Minor differences in the patterns were observed for glutamyl- and isoleucyl-tRNA, but the patterns of arginyl-, seryl-, valyl-, histidyl-, threonyl-, and methionyl-tRNA's of normal and precancerous livers were identical. *In vitro* methylation of phenylalanyl- and tyrosyl-tRNA resulted in profiles similar to those in precancerous liver, suggesting that the altered tRNA's of precancerous livers may have undergone methylation by the hepatocarcinogen; alternatively, tRNA's of other cellular types have been reported in the livers of dye-fed animals, and these tRNA's may exhibit different patterns from normal liver tRNA.

7907 THE METABOLISM OF RIBONUCLEIC ACID IN RAT LIVER AFTER PHENOBARBITAL ADMINISTRATION. *(E.)* Ruddon, R. W. (U. Michigan Med. Dent. Sch., Ann Arbor) and A. M. Cohen. *Molec Pharmacol* 6(5):540-547, 1970.

The effect of phenobarbital (75 mg/kg i.p.) on the relation between RNA metabolism and enzyme induction in rat liver was studied by following the incorporation of orotic acid-5-^{3}H (100-200 μC) into hepatic nuclear and cytoplasmic RNA extracted from purified nuclei or cytoplasmic fractions and separated on linear sucrose gradients. Pulses of 1-, 2-, 4-, and 12-hr duration were administered 2 hr after injection of phenobarbital or 0.9% NaCl in order to examine alterations in cytoplasmic RNA metabolism early in the induction process before any marked increase occurred in the levels of microsomal drug-metabolizing enzymes. A 20-30% increase above controls in the specific activity of 28 S and 18 S ribosomal RNA became apparent after a 2-hr pulse dose of labeled precursor administered 2 hr after phenobarbital treatment, and was maintained for 12 hr. The augmented labeling appeared to be restricted to ribosomal RNA species. Analysis of nuclear RNA after pulses of ½, 1, 2, and 4 hr, given 2 hr after phenobarbital, indicated that there was no detectable increase in the synthesis of ribosomal RNA or ribosomal RNA precursors. Phenobarbital may enhance the stability of hepatic ribosomal RNA or increase the "processing" and transport of this substance to the cytoplasm, and these events, which occur early in the induction process, may be involved in the elevation of microsomal oxidase activity observed after phenobarbital administration.

7908 GENETIC INFLUENCES ON RESPONSE TO CASTRATION OF LIVER GROWTH AND HEPATOMA FORMATION. *(E.)* Wolff, G. L. (Inst. Cancer Res., Fox Chase, Philadelphia, Pa.). *Cancer Res* 30(6):1726-1730, 1970.

The effect of castration on liver weight and composition was studied in various mouse genotypes which differ in their susceptibility to formation of spontaneous hepatomas. In the YS strain, the lethal yellow (A^y) gene induced an increase in fat-free dry weight of the liver in castrated males. Castration did not affect liver weight of the nonyellow (a/a) YS/ChWf males. Fat-free dry carcass weight of the A^y/a males was not affected by castration, but that of the a/a males was decreased. In livers of both genotypes, castration decreased the water content and essentially had no effect on the fat content; however, castration did increase the fat content of the carcasses markedly in both genotypes. Decreased liver weight as a result of castration was observed in all nonyellow F_1 hybrids carrying the VY strain genome, but in only one yellow

(A^{vy}/A) F_1 hybrid class (BALB/c X VY). The YS strain genome apparently eliminated this response in F_1 hybrid males carrying the hepatoma-resistant BALB/c and C57BL/6 strain genomes. Castration did retard liver weight gain in the inbred BALB/c and C57BL/6 strain males. This effect of castration was not observed in the hepatoma-susceptible C3H strain males. Ovariectomy of A^{y}/a and a/a YS females had the same effects on liver and carcass weight as castration of the yellow and nonyellow males of this strain. Apparently the effect of castration on liver weight is not directly induced by decreased levels of sex hormones, but rather by alteration of the hormonal balance.

7909 ON THE RELATIONSHIP OF LIVER MITOCHONDRIAL COENZYME Q TO HYPERTHYROIDISM IN RATS. *(E.)* Butler, M. M. T. (Dept. Biochem., Colorado St. U., Fort Collins) and I. W. Charkey. *Proc Soc Exp Biol Med* 134(3):625-629, 1970.

The effect of administration to rats of excess thyroid hormone on mitochondrial coenzyme Q and on the functional efficiency of mitochondrial oxidative phophorylation was studied. Liver mitochondria from rats with induced hyperthyroidism (0.4% dessicated thyroid in diet) were less efficient as energy transducers than controls, as judged by lower P/O ratios (0.7 and 2.9, resp.). Liver mitochondria from hyperthyroid rats contained more coenzyme Q than did controls (14.4 vs 5.4 μg/mg N). Coenzyme Q probably was not involved as an intermediate for phosphorylation, but rather in the hyperthyroid state was in an alternate pathway of electron transport by-passing phosphorylation.

7910 MESSENGER RIBONUCLEOPROTEIN COMPLEXES RELEASED FROM RAT LIVER NUCLEI BY ATP: I. CHARACTERIZATION OF THE RNA MOIETY OF MESSENGER RIBONUCLEOPROTEIN COMPLEXES. *(E.)* Ishikawa, K. (Niigata U. Sch. Med., Japan), C. Kuroda, M. Ueki and K. Ogata. *Biochim Biophys Acta* 213(2):495-504, 1970.

The chemical and metabolic properties of the RNA moiety of the 45 S component which can be released from rat liver nuclei by ATP were investigated. Disc electrophoresis of RNA from the 45 S component labeled with ^{14}C-orotic acid *in vivo* for 40 min revealed that it contained rapidly labeled RNA ranging from 18 S to 6-4 S as the main component. RNA from the 45 S component showed a high stimulatory activity for polypeptide synthesis in an *Escherichia coli* cell-free system. Base composition analysis of RNA from the 45 S component showed a high adenine + uridine/guanidine + cytosine ratio, as obtained both by the ultraviolet absorption method (1.17) and by the measurement of radioactivity after ^{32}P short-labeling (1.18). The 45 S component appears to contain mRNA as a major component.

7911 MESSENGER RIBONUCLEOPROTEIN COMPLEXES RELEASED FROM RAT LIVER NUCLEI BY ATP: II. CHEMICAL AND METABOLIC PROPERTIES OF THE PROTEIN MOIETY OF MESSENGER RIBONUCLEOPROTEIN COMPLEXES. *(E.)* Ishikawa, K. (Niigata U. Sch. Med., Japan), C. Kuroda and K. Ogata. *Biochim Biophys Acta* 213 (2):505-512, 1970.

The protein moiety of messenger ribonucleoprotein complexes, the 45 S component released from rat liver nuclei by ATP, was investigated. Polyacrylamide gel electrophoresis revealed that the 45 S component contained proteins which were less basic than ribosomal basic proteins and histones and showed 3 main bands. The amino acid composition of the protein moiety of the 45 S component indicated that the content of basic amino acids (13.8 moles/100 moles amino acid recovered) in the 45 S component was about a half of those in ribosomal sub-units. The time courses of labeling *in vivo* with the ^{14}C-labeled algal protein hydrolysate showed that the specific activity of the released fraction reached a value twice as high as that of total nuclear proteins after 1 hr; the specific activity of the 45 S component was lower than that of the 4 S component. The 45 S component, which may be an intermediate form of transport for mRNA, apparently contained specific carrier proteins, which are less basic than ribosomal structural proteins and have a rather high metabolic rate.

7912 IMPAIRED LABELING OF LIVER PHOSPHATIDYLETHANOLAMINE FROM ETHANOLAMINE-^{14}C IN CHOLINE DEFICIENCY. *(E.)* Haines, D. S. M. (Westminster Hosp., London, Ontario, Canada)and C. I. Rose. *Canad J Biochem* 48(8):885-892, 1970.

Ethanolamine-^{14}C (0.5 ml, 3.5 μC) was injected intraportally to 8 rats after 3 days of choline-deficient feeding and to choline-supplemented rats which were killed in groups of two after 4, 8, 18, and 32 min. Much less ^{14}C was incorporated into phosphatidylethanolamine and phosphatidylcholine in the choline-deficient livers, while the level of the former phospholipid was increased and the latter was decreased in these livers. In choline-deficient liver the levels of ethanolamine and its derivatives were increased 4-fold compared to choline-supplemented liver, while choline and choline phosphate were reduced 90% and 80%, resp. A lower incorporation of ethanolamine-^{14}C into cytidinediphospho-ethanolamine (15%) was seen in the deficient livers whereas the specific radioactivities of ethanolamine and ethanolamine phosphate were increased. A block at the cytidinetriphosphate:ethanolamine phosphate transferase step of phosphatidylethanolamine synthesis appears to exist in choline-deficient liver.

7913 PROSTAGLANDIN UPTAKE AND METABOLISM BY THE PERFUSED RAT LIVER. *(E.)* Ramwell, P. W. (Alza Co., Palo Alto, Calif.), W. Dawson, S. J. Jessup, W. McDonald-Gibson and J. E. Shaw. *Brit J Pharmacol* 39(3):585-598, 1970.

The removal of prostaglandin E_1 and prostaglandin $F_{1\alpha}$ from the circulating blood and their subsequent metabolism by the isolated perfused rat liver was investigated by determing the distribution of radioactivity within extracts of bile, blood and liver following i.v. administration of labeled prostaglandin. Up to 89-95% of a single injection of 1-^{14}C-prostaglandin was removed by the liver on a single passage; only 0.3-0.8% of the radioactivity was detected in the bile and 11-19% of the label was present as exchanged $^{14}CO_2$. The rest of the radioactivity was detected within the liver incorporated into fatty acids and phospholipids. Injection of 5,6-^{3}H-prostaglandin E_1 resulted in a 30-fold increase in the % radioactivity excreted in the bile, suggesting that biliary excretion may be a major route for elimination of compounds smaller than C20 prostaglandin; similar biliary excretion of 9-^{3}H-prostaglandin F_1 occurred. A rapid uptake of circulating prostaglandins by the rat liver, followed by decarboxylation (and inactivation) apparently serves to curtail the duration of effects of prostaglandin.

7914 EFFECT OF FLUORIDE ON GLYCOLYTIC AND CITRIC ACID CYCLE METABOLITES IN RAT LIVER.

(E.) Shearer, T. R. (U. Oregon Dent. Sch., Portland) and J. W. Suttie. *J Nutr* 100(7):749-756, 1970.

The effect of an i.p. injection of 2 mg of fluoride or the ingestion of diets containing 450 or 600 ppm fluoride on the concentrations of various rat liver glycolytic and citric acid cycle metabolites was studied. Fluoride injection substantially increased liver fluoride (treated 7.4, control 0.15 ppm); and caused a large fall in metabolites between 2-phosphoglycerate and phosphoenolpyruvate and a crossover between phosphoenolpyruvate and pyruvate. The ingestion of dietary fluoride caused a decrease in the level of most glycolytic intermediates, particularly pyruvate (0.2 to 0.07 µmole/g wet wt) and lactate (1.93 to 0.84 µmole/g wet wt), and a large increase in liver citrate (0.32 to 0.85 µmole/g wet wt). Fluoride ingestion appeared to be associated with a decreased activity of liver pyruvic kinase, but it did not influence liver enolase activity. With the exception of the increase in citrate, the changes seen were shown to be secondary to a primary effect of dietary fluoride on the amount and pattern of food intake.

7915 CLEAVAGE OF HIGH-MOLECULAR WEIGHT DNA-LIKE RNA BY A NUCLEASE PRESENT IN 30 S RIBONUCLEOPROTEIN PARTICLES OF RAT LIVER NUCLEI.

(E.) Niessing, J. (Physiol. Chem. Inst., Phillips U., Marburg, Germany) and C. E. Sekeris. *Biochim Biophys Acta* 209(2):484-492, 1970

High molecular weight DNA-like RNA (50-80 S) was labeled by injection of radioactive orotic acid into rats 15 min prior to sacrifice and isolated from the livers by thermal phenol fractionation and incubated with the protein component of 30 S nuclear ribonucleoprotein particles. At a pH optimum around 8.0, low concentrations of protein (5 µg/ml) caused an almost complete conversion of the high-molecular-weight RNA into material mainly sedimenting at 30 S; prolongation of the incubation time had no effect on the rate of RNA breakdown. By increasing the concentration of the protein (30-40 µg/ml) most of the RNA present in the 30 S region was degraded to 18 S RNA and further to molecules sedimenting between 4 and 16 S. As shown by phenol extraction, no protein was attached to the degraded RNA. The cleavage of high molecular weight RNA was strongly promoted by inorganic orthophosphate. The protein from 30 S nuclear particles seemed to contain an endonuclease which *in vivo* might be involved in the cleavage of high molecular weight DNA-like RNA.

7916 INCORPORATION OF NUCLEAR RNA INTO POLYSOMES IN A RECONSTITUTED SYSTEM OF RAT LIVER.

(E.) Ishikawa, K. (Niigata U. Sch. Med., Japan), M. Ueki, K. Nagai and K. Ogata. *Biochim Biophys Acta* 213(2):542-544, 1970.

The mechanism of the incorporation of messenger RNA from the nucleus into cytoplasmic polysomes was studied in rat liver cells using a reconstructed system of isolated liver nuclei containing rapidly labeled RNA and the postmitochondrial fraction. An incubation mixture containing 40-min labeled nuclei (^{3}H-orotic acid at 100 µC/100 g body weight for 40 min), ATP, GTP, and an energy regenerating system was analyzed on sucrose density gradients after 30 min at 30°C; the rapidly labeled RNA was released from the nuclei mainly as the 45 S component when incubated with the 150,000 x g supernatant fraction and mainly in the polysome area when incubated with the postmitochondrial fraction. Without the ATP, GTP, and energy-regenerating system, neither the 45 S component release nor the polysomal incorporation occurred. Cesium chloride gradients have indicated that the rapidly labeled RNA in mammalian polysomes exist as ribonucleoprotein complexes of low bouyant density and about half of the RNA can be separated from the ribosomes with EDTA treatment.

7917 RELEASE OF CHOLINESTERASE FROM RAT LIVER BY NICOTINAMIDE AND CARBON TETRACHLORIDE.

(E.) Bhatnagar, S. P. (Food Drug Res. Lab., Ottawa, Canada). *Biochem Pharmacol* 19(6):2009-2016, 1970.

The influence of CCl_4 and nicotinamide on the concentration of cholinesterase in liver and plasma was studied in normal and ethyl-*p*-nitrophenyl thiobenzene phosphonate-treated female rats. The cholinesterase content of liver declined by about 80 per cent in 18 hr after oral administration of CCl_4 (1.25 ml/kg) to normal rats, whereas the plasma cholinesterase levels increased substantially within 8 hr, but then declined rapidly to reach the basal values within a 24-hr period. Nicotinamide failed to prevent the CCl_4-induced release of cholinesterase from liver at doses (500 mg/kg i.p. twice at 8-hr intervals) known to be effective against the hepatotoxic action of CCl_4. Instead, it caused about 50% reduction in the content of liver with the consequent elevation of the plasma enzymic levels; these effects were dose related and reversible. The decline in plasma cholinesterase activity subsequent to ethyl-*p*-nitrophenyl thiobenzene phosphonate treatment was significantly less in nicotinamide-treated animals and almost negligible in CCl_4-treated ones. Nicotinamide had no effect *in vitro* on cholinesterase activity, nor did it reactivate the enzyme inhibited *in vivo* as a result of ethyl-*p*-nitrophenyl thiobenzene phosphonate administration. The protective effect of nicotinamide was characterized by a 2- to 3-fold increase in the LD_{50} value and some prolongation of the survival time, whereas CCl_4, while failing to influence the LD_{50} value, exerted greater effect on the survival time.

7918 STUDIES ON THE INHIBITORY EFFECTS OF VARIOUS SUBSTANCES ON DRUG METABOLISM BY LIVER MICROSOMES: THE EFFECT OF NICOTINAMIDE IN ALTERING THE APPARENT MECHANISM OF INHIBITION.

(E.) Sasame, H. A. (Natl. Heart Inst., Bethesda, Md.) and J. R. Gillette. *Biochem Pharmacol* 19(3):1025-1041, 1970.

The inhibitory effects of nicotinamide, 2,4-dichloro-6-phenylphenoxyethylamine, and aminoethyldiphenylpropylacetate on the hydroxylation of aniline, and the N-demethylation of aminopyrine and ethylmorphine by liver microsomes were studied and were found to vary with the species and the substrate. Nicotinamide blocked the aminopyrine demethylating enzyme in rat liver microsomes competitively, and that in mouse liver microsomes by a mixed mechanism. The aniline hydroxylating enzyme in mouse liver microsomes was blocked competitively by nicotinamide, uncompetitively by aminoethyldiphenylpropylacetate and partially uncompetitively by 2,4-dichloro-6-phenylphenoxyethylamine. The ethylmorphine demethylating enzyme in mouse liver microsomes was inhibited by nicotinamide, 2,4-dichloro-6-phenylphenoxyethylamine, and aminoethyldiphenylpropylacetate by dual mechanisms. At low concentrations, the inhibitors blocked the reaction noncompetitively, but at high concentrations they block it both competitively and noncompetitively; nicotinamide modified the apparent mechanism of inhibition by these inhibitors. In the presence of nicotinamide, aminoethyldiphenylpropylacetate apparently inhibits the N-demethylation of ethylmorphine by a competitive mechanism.

7919 ABNORMALITIES IN HEPATIC ENZYME ACTIVITIES DURING DEVELOPMENT OF DIABETES IN Db MICE.

(E.) Chang, A. Y. (Upjohn Co., Kalamazoo, Mich.) and D. I. Schneider. *Diabetologia* 6(3):274-278, 1970.

Changes in 7 hepatic enzymes during the development of diabetes in C57BL/Ks mice were determined at 1, 2, and 4 1/2 month. An elevation in phosphoenolpyruvate carboxykinase and glucose-6-phosphatase was observed before the onset of hyperglycemia in db mice at the age of 1 month. At 2 months, these mice had hyperglycemia, hyperinsulinemia and high levels of phosphoenolpyruvate carboxykinase, glucose-6-phosphatase, fructose-1,6-diphosphatase, pyruvate kinase and 6-phosphogluconate dehydrogenase. The 4 1/2-month-old db mice had normal plasma insulin, severe hyperglycemia, exorbitant amount of hepatic gluconeogenic enzymes and reduced quantity of glycolytic and pentose-phosphate shunt enzymes. The disturbance in enzyme activities and blood sugar was partially controlled by placing the animals on a limited diet beginning at the age of 1 month. *In vivo* studies indicated that hyperglycemia resulted, at least in part, from an accelerated rate of gluconeogenesis.

7920 EFFECT OF DRUG PRETREATMENT ON CARBON TETRACHLORIDE-INDUCED LIPID PEROXIDATION IN RAT LIVER MICROSOMES.

(E.) Rao, K. S. (Sch. Med., Case Western Reserve U., Cleveland, O.), E. A. Glende, Jr. and R. O. Recknagel. *Exp Molec Path* 12(3):324-331, 1970.

The effect of drug pretreatment on CCl_4-induced lipid peroxidation of rat liver microsomal lipids was studied in rats treated with phenobarbital sodium (80 mg/day for 3 days). A 50% increase in liver microsomal lipid peroxidation *in vivo* as a response to intragastric administration of CCl_4 was observed. Pretreatment (30 min) of rats with SKF-525A (100 mg/kg) markedly reduced by 50% the liver microsomal lipid peroxidation elicited by CCl_4 poisoning. Malonic dialdehyde production in a microsome-supernatant system derived from rat liver was inhibited 35% by 0.10 mM SKF-525A and completely inhibited by 1.0 mM SKF-525A.

7921 HYDROXYLATION OF ALIPHATIC COMPOUNDS BY LIVER MICROSOMES: II. EFFECT OF PHENOBARBITAL INDUCTION IN RATS ON SPECIFIC ACTIVITY AND CYTOCHROME P-450 SUBSTRATE BINDING SPECTRA.

(E.) Frommer, U. (Biochem. Inst. U. Giessen, Germany), V. Ullrich and H. Staudinger. *Hoppe Seyler Z Physiol Chem* 351(8):913-918, 1970.

The phenobarbitol induction of the hydroxylation activity of rat liver microsomes was quantitated by a time course determination of the hydroxylation reaction with methylcyclohexane, 2-methylbutane, n-pentane, n-butane and isobutane. The isomeric alcohols were formed by identical non-linear kinetics. The specific activity was about the same for all substrates and was enhanced 4-5 fold by pretreatment of rats with phenobarbital; the binding of the substrates to cytochrome P-450 was increased similarly. 2,2-Dimethylpropane which only has primary CH- bonds was hydroxylated with the same specific activity as the other substrates having more reactive secondary and tertiary CH-bonds. The n-butane-induced difference spectrum was considerabl diminished by bubbling argon through the reaction mixture, indicating that substrate binding to cytochrome P-450 is reversible.

7922 NICKEL CARBONYL INHIBITION OF INDUCTION OF AMINOPYRINE DEMETHYLASE ACTIVITY IN LIVER AND LUNG.

(E.) Sunderman, F. W., Jr. (U. Connecticut Sch. Med., Hartford) and K. C. Leibman. *Cancer Res* 30(6):1645-1650, 1970.

The inhibition of hepatic aminopyrine demethylase basal activity and induced activity by nickel carbonyl $[Ni(CO)_4]$ was studied in rats. The maximum inhibition of hepatic aminopyrine demethylase occurred on the 2nd day after an injection of $Ni(CO)_4$ (2.2 mg Ni/100 g i.v.), and aminopyrine demethylase activity returned to normal levels by the 4th day after $Ni(CO)_4$. Administration of $Ni(CO)_4$ also inhibited hepatic aminopyrine demethylase activity in rats that had received daily injections of phenobarbital beginning 5 days before the Ni(CO)$_4$. However, in the phenobarbital-treated rats, maximum inhibition of hepatic aminopyrine demethylase did not occur until the 5th day after Ni(CO)$_4$ and aminopyrine demethylase activity did not return to normal levels until the 9th day after Ni(CO)$_4$. These experiments and other related studies indicate that Ni(CO)$_4$ inhibition of hepatic aminopyrine demethylase activity follows a distinctly different temporal sequence in noninduced and phenobarbital-treated rats. The mean activity of aminopyrine demethylase activity in rat lungs was increased 2 days after ingestion of phenothiazine. Exposure of rats to Ni(CO)$_4$ inhibited the phenothiazine induction of pulmonary aminopyrine demethylase activity.

7923 L-HOMOARGININE: AN INHIBITOR OF SERUM "BONE AND LIVER" ALKALINE PHOSPHATASE. *(E.)* Fishman, W. H. (Tufts U. Sch. Med., Boston, Mass.) and H. G. Sie. *Clin Chim Acta* 29(2):339-341, 1970.

7924 EXPERIMENTAL DRUG EFFECTS ON HEPATIC BLOOD FLOW AND CHOLERESIS. *(Ger.)* Schnack, H. (Med. U. Clin. Vienna, Austria) and N. Stefenelli. *Therapiewoche* 20(32):1586-1587, 1970.

7925 THE INHIBITORY EFFECTS OF ENDOGENOUS NADPH-PYROPHOSPHATASE ON THE REDUCTION OF CYTOCHROME c AND THE OXIDATION OF DRUGS BY LIVER MICROSOMES. *(E.)* Sasame, H. A. (Natl. Heart Lung Inst., Natl. Inst. Hlth., Bethesda, Md.) and J. R. Gillette. *Arch Biochem Biophys* 140(1):113-121, 1970.

7926 EFFECTS OF N^1-ALKYLNICOTINAMIDE CHLORIDES ON NADH OXIDATION IN RAT LIVER SUBMITOCHONDRIAL PARTICLES. *(E.)* Goodge, B. J. (Ft. Sanders Presbyterian Hosp., Knoxville, Tenn.) and B. M. Anderson. *Arch Biochem Biophys* 140(1):190-196, 1970.

7927 BREAKDOWN OF RAT LIVER POLYRIBOSOMES BY BENZENE. *(E.)* Tryfiates, G. P. (West Virginia U. Med. Ctr., Morgantown). *Proc Soc Exp Biol Med* 134(3):644-646, 1970.

7928 BENZO(a)PYRENE-METABOLIZING ENZYME ACTIVITY OF LIVERS OF VARIOUS STRAINS OF MICE. *(E.)* Kodama, Y. (Fac. Med., Kyushu U., Fukuoka, Japan) and F. G. Bock. *Cancer Res* 30(6):1846-1849, 1970.

7929 NATURE OF THE WATER-SOLUBLE METABOLITES OF 7,12-DIMETHYLBENZ(a)ANTHRACENE FORMED BY LIVER MICROSOMES OF NORMAL AND 3-METHYLCHOLANTHRENE-TREATED RATS. *(E.)* Jellinck, P. H. (Dept. Biochem., Queen's U., Kingston, Ontario, Canada), G. Smith and R. Fletcher. *Cancer Res* 30(6):1715-1721, 1970.

7930 A MODEL FOR GALLBLADDER FUNCTION AND CHOLESTEROL GALLSTONE FORMATION. *(E.)* Cussler, E. L. (Dept. Chem. Engineering, Carnegie-Mellon U., Pittsburgh, Pa.), D. F. Evans and R. G. DePalma. *Proc Nat Acad Sci* 67(1):400-407, 1970.

7931 STUDY ON THE EVOLUTION OF MITOCHONDRIAL ENZYME ACTIVITIES IN HEPATOCYTE DURING RAT DEVELOPMENT. *(Fr.)* Levy, M. (Lab. Physiol. Nutr., Paris, France) and R. Toury. *Biochim Biophys Acta* 216(2):318-327, 1970.

7932 THE EFFECT OF PHENOBARBITAL ON THE BIOSYNTHESIS AND DISTRIBUTION OF CHOLESTEROL IN THE MOUSE. *(Ger.)* Glogner, P. (Med. U. Polyclin., Marburg, Germany) and H. Kronert. *Z Klin Chem* 8(4):406-408, 1970.

7933 EFFECT OF ABSORBIC ACID ON THE INDUCTION OF MONOOXYGENASE IN RAT LIVER MICROSOMES. *(Ger.)* Leber, H. W. (Biochem Inst., U. Giessen, Germany), E. Degkwitz and H. Staudinger. *Hoppe Seyler Z Physiol Chem* 351(8):995-1001, 1970.

7934 INVESTIGATIONS ON ISOLATED AND PERFUSED LIVER FUNCTION. *(It.)* Massari, N. (Med. Clin. U. Milan, Italy), L. Tenconi, F. Civardi, C. Santambrogio, S. Negri, S. Procaccia and U. Samaja. *Minerva Med* 61(56):3121-3126, 1970.

7935 SYNTHESIS OF CHICKEN LIVER PYRUVATE HOLOCARBOXYLASE *IN VIVO* AND *IN VITRO*. *(E.)* Madappally, M. M. (U. Nebraska Coll. Med., Omaha) and S. P. Mistry. *Biochim Biophys Acta* 215(2):316-322, 1970.

7936 EFFECT OF HISTONES ON INDUCTION OF TYROSINE AMINOTRANSFERASE BY HYDROCORTISONE IN ISOLATED PERFUSED RAT LIVER. *(E.)* Reuter, A. M. (Nucl. Energy Study Ctr., Mol, Belgium), G. B. Gerber, O. Mathieu and J. Remy-Defraigne. *Arch Int Physiol Biochim* 78(3):489-493, 1970.

7937 THE EFFECT OF MAGNESIUM OROTATE AND OROTIC ACID ON THE ENZYME ACTIVITY OF THE LIVER. EXPERIMENTAL STUDIES. *(Ger.)* Szelenyi, I. (Inst. Pathol., Semmelweis U., Budapest, Hungary), M. Surtya and E. Anyok. *Munchen Med Wschr* 112(34):1516-1519, 1970.

7938 STIMULATION OF TWO ADAPTIVE RAT LIVER ENZYMES BY QUINOLINIC ACID AS A FUNCTION OF TIME. *(E.)* Hardeland, B. (1st Zool. Inst., U. Gottingen, Germany). *Life Sci* 9(16):901-905, 1970.

7939 THE EFFECT OF RIFAMPICIN ON MITOCHONDRIAL RNA POLYMERASE FROM RAT LIVER. *(E.)* Gadaleta, M. N. (Inst. Biol. Chem., Bari, Italy),

M. Greco and C. Saccone. *FEBS Letters* 10(1):54-56, 1970.

7940 THE EFFECT OF NIALAMIDE, PARGYLINE AND TRANYLCYPROMINE ON THE REMOVAL OF AMPHETAMINE BY THE PERFUSED LIVER. *(E.)* Trinker, F. R. (Baker Med. Res. Inst., Victoria, Australia) and M. J. Rand. *J Pharm Pharmacol* 22(7):496-499, 1970.

7941 EVIDENCE FOR SPIRONOLACTONE AS A POSSIBLE INDUCER OF LIVER MICROSOMAL ENZYMES IN MICE. *(E.)* Gerald, M. (Coll. Phar., Ohio St. U., Columbus) and D. R. Feller. *Biochem Pharmacol* 19(8):2529-2532, 1970.

7942 COMPARATIVE METABOLISM OF SELECTED N-METHYLCARBAMATES BY HUMAN AND RAT LIVER FRACTIONS. *(E.)* Strother, A. (Sch. Med., Loma Linda U., Calif.). *Biochem Pharmacol* 19(8):2525-2529, 1970.

7943 EFFECTS OF THE 1-KETO AND 1-HYDROXY DERIVATIVES OF 3-METHYLCHOLANTHRENE UPON LIVER DRUG METABOLIZING ENZYME ACTIVITY. *(E.)* Bresnick, E. (Baylor Coll. Med., Houston, Tex.), S. Smith and R. A. Seibert. *Biochem Pharmacol* 19(8):2469-2474, 1970.

7944 METABOLISM AND BILIARY EXCRETION OF THE LIPOPHILIC DRUG MOLECULES, IMIPRAMINE AND DESMETHYLIMIPRAMINE IN THE RAT: II. UPTAKE INTO BILE MICELLES. *(E.)* Bickel, M. H. (Med. Chem. Inst., U. Bern, Switzerland) and R. Minder. *Biochem Pharmacol* 19(8):2437-2443, 1970.

7945 THE ENZYMATIC REDUCTION OF HYDROXYUREA TO UREA BY MOUSE LIVER. *(E.)* Colvin, M. (Natl. Cancer Inst., Bethesda, Md.) and V. H. Bono, Jr. *Cancer Res* 30(5):1516-1519, 1970.

7946 ARGININE INCORPORATION INTO PROTEINS BY SUPERNATANT FRACTIONS OF RAT LIVER AND NOVIKOFF HEPATOMA. *(E.)* Dupras, M. (Hosp. Notre Dame, Montreal, Quebec, Canada) and G. De Lamirande. *Cancer Res* 30(5):1506-1511, 1970.

7947 DRUG-STEROID INTERACTION IN THE PREGNANT RAT, FETUS AND NEONATE. *(E.)* Fahim, M. S. (U. Missouri Sch. Med., Columbia), D. G. Hall, T. M. Jones, Z. Fahim and F. D. Whitt. *Amer J Obstet Gynec* 107(8):1250-1258, 1970.

7948 HEPATIC AND ADRENAL DEGRADATION OF CHOLESTEROL DURING REST AND MUSCULAR ACTIVITY. *(E.)* Malinow, M. R. (U. Oregon Med. Sch., Portland), P. McLaughlin, A. Perley, L. Laastuen and E. Van Hook. *J Appl Physiol* 29(3):323-327, 1970.

7949 PROTECTION OF CHICKEN LIVER PYRUVATE CARBOXYLASE BY SULFATE IONS AGAINST AVIDIN INHIBITION. *(E.)* Madappally, M. M. (U. Nebraska Coll. Med., Omaha) and S. P. Mistry. *Life Sci* 9(14):833-839, 1970.

7950 THE BIOSYNTHESIS OF PROTEIN BY LIVER RIBOSOMES. *(E.)* Campbell, P. N. (Dept. Biochem., U. Leeds, England). *Sci Basis Med Annual Rev* 173-188, 1970.

7951 THE HORMONAL CONTROL OF HEPATIC GLUCONEOGENESIS. *(E.)* Exton, J. H. (Vanderbilt U. Sch. Med., Nashville, Tenn.), L. E. Malette, L. S. Jefferson, E. H. A. Wong, N. Friedmann, T. B. Miller, Jr. and C. R. Park. *Recent Progr Hormone Res* 26:411-461, 1970.

7952 HISTONE METHYLASE ACTIVITY OF ADULT, EMBRYONIC AND NEOPLASTIC LIVER TISSUES. *(E.)* Turner, G. (Jackson Lab., Bar Harbor, Me.) and R. L. Hancock. *Life Sci* 9(16):917-922, 1970.

7953 6β-HYDROXYLATION OF TRIAMCINOLONE ACETONIDE BY A HEPATIC ENZYME SYSTEM: THE EFFECT OF PHENOBARBITAL AND 1-BENZYL-2-THIO-5,6-DIHYDROURACIL. *(E.)* Kupfer, D. (American Cyanamid, Pearl River, N. Y.) and R. Partridge. *Arch Biochem Biophys* 140(1):23-28, 1970.

7954 THE TIME OF HISTONE SYNTHESIS IN REGENERATING RAT LIVER. *(E.)* Orlova, L. V. (USSR Acad. Med. Sci., Moscow) and V. M. Rodionov. *Exp Cell Res* 59(2):329-333, 1970.

7955 THYMIDINE AND URIDINE METABOLISM AT CELL GROWTH INHIBITION OF HeLa CELLS BY HUMAN LIVER EXTRACT. *(E.)* Nilsson, G. (Res. Inst. Natl. Def., Sundbyberg, Sweden). *Exp Cell Res* 59(2):207-216, 1970.

7956 BILIRUBIN METABOLISM: RESEARCH ASPECTS. *(E.)* Arias, I. M. (Albert Einstein Coll. Med., Bronx, N. Y.). *Hosp Pract* 5(1):27-33, 1970.

7957 RELATIONSHIP OF Cx-REACTIVE PROTEIN RESPONSE TO INDUCTION OF LIVER AND KIDNEY CATALASES FOLLOWING HEMATIN ADMINISTRATION INTO RABBITS. *(E.)* Hokama, Y. (U. Hawaii Sch. Med., Honolulu), K. Yamada, C. Scheller and E. T. Nishimura. *Cancer Res* 30(5):1319-1326, 1970.

7958 PROLIFERATION KINETICS OF LIVER ERYTHROPOIESIS IN GROWING RATS. *(Ger.)* Haas, R. J. (Dept. Clin. Physiol., U. Ulm, Germany), E. Sparrer and T. M. Fliedner. *Acta Haemat* 43(4):232-241, 1970.

7959 A COMPARATIVE STUDY ON THE INFLUENCE OF FAST NEUTRONS (14MeV) AND X-RAYS ON THE GLYCOGEN CONTENT IN MOUSE LIVER. *(E.)* Berndt, J. (Radiol. Inst., U. Freiburg, Germany), M. Langendorff and E. Kofler. *Int J Radiat Biol* 18(2):193-196, 1970.

7960 DECREASE IN THE SUBSTRATE INTERACTION WITH CYTOCHROME P-450 IN DRUG HYDROXYLATION BY LIVER MICROSOMES FROM RATS BEARING WALKER 256 CARCINOMA. *(E.)* Kato, R. (Natl. Inst. Hyg. Sci., Tokyo, Japan), A. Takanaka and A. Takahashi. *GANN* 61(4):359-365, 1970.

7961 EFFECT OF XANTINOL NICOTINATE ON LIVER METABOLISM. *(Ger.)* Brenner, G. (Johann A. Wulfing Co. Dusseldorf, Germany). *Therapiewoche* 20(32):1566-1579, 1970.

7962 BIOSYNTHESIS OF LIVER MICROSOMAL PHOSPHATIDYL CHOLINES DURING THE DEVELOPMENT OF CHOLINE DEFICIENCY. *(E.)* Rytter, D. J. (U. North Dakota Sch. Med., Grand Fords) and W. E. Cornatzer. *Proc Soc Exp Biol Med* 134(3):630-633, 1970.

7963 EFFECT OF SOUND ON RAT LIVER ERYTHROCYTES AND TRANSKETOLASE ACTIVITY. *(Rus.)* Maidanova, N. V. (Zaporozhie Med. Inst., USSR). *Biull Eksp Biol Med* 69(2):47-49, 1970.

7964 VASCULAR BASEMENT MEMBRANE THICKNESS IN MUSCLE OF SPINY MICE AND ACTIVITIES OF GLYCOLYSIS AND GLUCONEOGENESIS IN THE LIVER OF ANIMALS WITH SPONTANEOUS AND EXPERIMENTAL DIABETES AND OF UNTREATED HUMAN DIABETICS. *(E.)* Creutzfeldt, W. (Dept. Med., U. Gottingen, Germany), D. Mende, B. Willms and H. D. Soling. *Diabetologia* 6(3):356-360, 1970.

7965 BRAIN AND LIVER TRYPTOPHAN PATHWAYS AND ADRENOCORTICAL ACTIVATION DURING RESTRAINT STRESS. *(E.)* Nistico, G. (Fac. Med., U. Naples, Italy) and P. Preziosi. *Pharmacol Res Commun* 1(4):363-368, 1969.

7966 GLUCONEOGENESIS FROM PYRUVATE IN ISOLATED PERFUSED RAT LIVER. *(E.)* Veneziale, C. M. (Mayo Clin., Rochester, Minn.), F. Gabrielli and H. A. Lardy. *Biochemistry* 9(20):3960-3970, 1970.

7967 STUDIES ON THE REGULATION OF THE ACTIVITY OF DRUG OXIDATION IN RAT LIVER MICROSOMES BY ANDROGEN AND ESTROGEN. *(E.)* Kato, R. (Natl. Inst. Hyg. Sci., Tokyo, Japan) and K. Onoda. *Biochem Pharmacol* 19(5):1649-1660, 1970.

7968 THE DEPENDENCE OF OXIDATIVE PHOSPHORYLATION AND ATP-ASE OF LIVER MITOCHONDRIA ON BOUND Mg^{++}. *(E.)* Lee, N. M. (U. California, San Francisco Med. Ctr.), I. Wiedemann, K. L. Johnson, D. N. Skilleter and E. Kun. *Biochem Biophys Res Commun* 40(5):1058-1062, 1970.

7969 DIFFERENTIAL INDUCTION OF CYTOPLASMIC GUANINE DEAMINASE ISOZYMES UNDER GUANINE STRESS IN RAT LIVER AND BRAIN. *(E.)* Sree Kumar, K. (Dept. Biochem, Lucknow U., India), A. Sitaramayya and P. S. Krishnan. *Biochem Biophys Res Commun* 40(5):1002-1007, 1970.

7970 ASPECTS OF CARNITINE ESTER METABOLISM IN SHEEP LIVER. *(E.)* Snoswell, A. M. (Waite Agric. Res. Inst., U. Adelaide, Glen Osmond, Australia) and G. D. Henderson. *Biochem J* 119(1):59-65, 1970.

7971 EFFECT OF CHRONIC INTAKE OF ETHANOL ON PYRIDINE NUCLEOTIDE LEVELS IN RAT LIVER AND KIDNEY. *(E.)* Kalant, H. (Dept. Pharmacol, U. Toronto, Ontario, Canada), J. M. Khanna and J. Loth. *Canad J Physiol Pharmacol* 48(8):542-549, 1970.

7972 EFFECT OF GLUCAGON ON THE METABOLISM OF ETHANOL IN RAT LIVER. *(E.)* Rawat, A. K. (Dept. Biochem., U. Copenhagen, Denmark). *Acta Chem Scand* 24(4):1163-1167, 1970.

7973 METHANOL ACTIVITY OF ALCOHOL DEHYDROGENASES FROM HUMAN LIVER, HORSE LIVER AND YEAST. *(E.)* Mani, J. C. (Natl. Ctr. Sci. Res., Montpelier, France), R. Pietruszko and H. Theorell. *Arch Biochem Biophys* 140(1):52-59, 1970.

7974 TRANSPORT INTO CYTOPLASM OF NUCLEAR DNA SIMILAR TO RNA IN THE PROCESS OF LIVER REGENERATION AND CHEMICAL HEPATOCARCINOGENESIS. *(Ukr.)* Platonov, O. M. (Acad. Sci. Ukrainian SSR, Kiev), V. P. Korotkoruchko, A. S. Polishchuk and V. G. Pinchuk. *Ukr Biokhim Zh* 42(1):16-19, 1970.

7975 STUDIES ON THE DAYTIME DEPENDENT CHANGES OF MEMBRANE PERMEABILITY IN LIVER CELL NUCLEI OF THE RAT. *(Ger.)* Kittlick, P. D. (Path. Inst., Friedrich Schiller U., Jena, Germany). *Exp Path* 4(2-3):143-154, 1970.

7976 CIRCADIAN CHANGES IN THE PERMEABILITY OF NUCLEAR MEMBRANES OF RAT LIVER CELLS FOLLOWING DIETHYLNITROSAMINE ADMINISTRATION. *(Ger.)* Kittlick, P. D. (Path. Inst., Friedrich Schiller U., Jena, Germany). *Exp Path* 4(2-3):201-206, 1970.

7977 THE EFFECT OF SPLENECTOMY ON THE REGENERATION OF THE LIVER IN DOGS. *(Rus.)* Beresnev, A. V. (Kharkov Med. Inst., USSR). *Biull Eksp Biol Med* 69(4):94-97, 1970.

7978 THE INFLUENCE OF *CHOLERA VIBRIO* ENDOTOXINS ON THE RESPIRATION OF HEPATIC MITOCHONDRIA IN THE PRESENCE OF KREBS CYCLE SUBSTRATES. *(Rus.)* Dzhaparidze, M. N. (Sci. Res. Antiplague Microbe Inst., Saratov, USSR), L. A. Martens and V. D. Egorova. *Biull Eksp Biol Med* 69(4):66-69, 1970.

7979 GLYCOGEN CHANGES IN THE LIVER UNDER THE EFFECT OF SOME PESTICIDES. *(Rus.)* Gadzhieva, Z. M. (Acad. Med. Sci. USSR, Moscow). *Farmakol Toksik* 33(3):376-377, 1970.

7980 THE EFFECT OF THIOPENTAL SODIUM ANESTHESIA ON THE LIVER. *(Rus.)* Danilyak, V. Ya. (Kalinin Med. Inst., USSR). *Farmakol Toksik* 33(3):282-284, 1970.

7981 STIMULATION OF THE SYNTHETIC PROCESSES IN THE RABBIT REGENERATING LIVER BY STIMULATING CO_2 FIXATION. *(Ukr.)* Zhurbin, G. I. (Acad. Sci. Ukraine SSR, Kiev), M. F. Guly and N. A. Stogny. *Ukr Biokhim Zh* 42(1):71-75, 1970.

o P:Morph (7771) (7773) (7776) (7782) (7795) (7799) (7800) (7815) (7817) (7820) (7824)
o P:Absorp (7837) (7838)
o P:Secr:Panc (7878)
o P:Gen (7994) (7995)
o D:Livbil (8264) (8265) (8266) (8269) (8270) (8280) (8281) (8295) (8305)
o D:Livbil:A.Nonv.Hep (8317) (8318) (8323) (8331) (8338) (8340) (8341) (8344) (8345)
o D:Livbil:Cirrh (8373) (8376)
o D:Livbil:Gallb (8395)
o D:Gen:Parasit (8491)

SECRETION AND METABOLISM

Intestine

7982 PREPARATION AND PROPERTIES OF MUCOSAL EPITHELIAL CELLS ISOLATED FROM SMALL INTESTINE OF THE CHICKEN. *(E.)* Kimmich, G.A. (U. Rochester Sch. Med. Dent., N.Y.) *Biochemistry* 9(19):3659-3668, 1970.

A procedure was described for preparing suspensions of isolated intestinal epithelial cells in high yield and with good retention of morphological, metabolic, and transport properties. Photomicrographs showed the cells were structurally intact and retained the brush borders typical of intestinal cells *in vivo*. The isolated cells produced lactic acid and carbon dioxide from glucose at a linear rate for at least a 2-hr interval, and retained sensitivity to oligomycin and dinitrophenol, indicating normal energy conservation processes have been maintained. Galactose and valine were accumulated against concentration gradients by a process which was inhibited by dinitrophenol, ouabain, and oligomycin. Galactose transport was completely inhibited by phlorizin, but valine accumulation was unchanged or slightly stimulated. Once a metabolite has been accumulated, any of the inhibitors caused a discharge by the cells which proceeded until the concentration in the intracellular space was equal to that in the bathing medium. At substrate concentrations of 1.25 mM, gradients from 4- to 8-fold were normally generated; gradients of 30-fold were produced at lower substrate levels. K_m for galactose and valine are 2.5 and 4.2 mM, resp., in good agreement with values reported for everted sacs, but V_{max} was significantly higher than data reported for sacs.

7983 STUDIES ON INTESTINAL ANTIBODIES: I. ANTIBODY DESTROYING EFFECT OF INTESTINAL JUICE AND ITS ELIMINATION. *(Ger.)* Sonntag, H. G. (Hyg. Inst. U. Kiel. Germany), J. Fullhaas and W. Muller-Ruchholtz. *Z Immunitaetsforsch* 140(1):94-104, 1970.

Mouse intestine perfusates were tested for their destructive effect on agglutinating antibodies agains *S. Typhimurium* in the presence and absence of a proteinase inhibitor (trasylol). The destructive effect was inhibited for 3-4 hr by both *in vitro* or *in vivo* treatment with trasylol, whereby combined (i.v. and p.o.) administration of 280,000 units/kg turned out to be the most effective. Intestinal antibodies of orally immunized mice revealed a 10-fold increase following *in vivo* treatment with proteinase inhibitor An *in vivo* inhibition of antibody degradation by the intestinal proteolytic enzymes may be possible.

7984 CULTURES OF SEGMENTS OF HUMAN FETAL INTESTINE: APPLICATIONS TO CYTOLOGIC AND VIROLOGIC INVESTIGATIONS. *(E.)* Mitus, A. (Harvard Med. Sch., Boston, Mass), J. Folkman, J. F. Enders and S. Driscoll. *Proc Soc Exp Biol Med* 134(3):800-806, 1970.

Organ cultures of human fetal intestine were established and the capacity of a variety of viruses to induce cytopathic changes in cells derived from this tissue was determined. The primary organ culture was characterized by easily distinguishable villi and blood vessels; progressive flattening and thinning of the intestinal segment occurred as cultivation was extended and was accompanied by shedding of dead cells into the media. Before the segments completely degenerated, a new population of cells, both fibroblastoid and epithelioid cells, became apparent adjacent to the cut edges, and spread rapidly along the glass rod and more slowly along the walls of the vessel. Smooth monolayers were established at these sites within 7-14 days after the beginning of migration. In contrast to the above proliferation, replication of lymphocytes did not occur in primary organ culture without phytohemagglutinin. The addition of several viruses (measles, herpes simplex, adenovirus I, cytomegalo, rubella, varicella-zoster) to the primary organ culture or the secondary monolayer outgrowth induced the characteristic cytopathic effects of the virus.

7985 DEMONSTRATION OF ANTIBODY IN RABBIT FECES AFTER ACTIVE OR PASSIVE PARENTERAL IMMUNIZATION. *(E.)* McCleery, J. L. (Dept. Med., U. Chicago, Ill.), S. C. Kraft and R. M. Rothberg. *Digestion* 3(4):213-221, 1970.

Specific antibody to bovine serum albumin (BSA) was measured in the feces, gastrointestinal contents, and serum of rabbits immunized either actively (i.v. or s.c. injection of crystallized BSA) or passively (i.v. injection of hyperimmune rabbit anti-BSA). Anti-BSA was detected in the feces of actively immunized rabbits and there was no correlation between the amount of circulating anti-BSA and that detected in the feces. Anti-BSA was also detected in the gastric, ileal, cecal and descending colon contents of two actively immunized rabbits. Fecal content of anti-BSA was lower in rabbits actively immunized s.c. than i.v. Serum anti-BSA levels occurred in 4 passively immunized rabbits 5 min after antibody injection and the disappearance curve of this circulating anti-BSA indicated a half-life of 5.0 days. Detectable amounts of anti-BSA occurred in the feces of 214 passively immunized rabbits 6-24 hr after passive antibody injection and in 314 rabbits by day 6 after injection. Circulating antibody to a soluble protein antigen seemingly does pass into the gastrointestinal lumen.

7986 METABOLIC ASPECTS OF ISOLATED CELLS FROM RAT SMALL INTESTINAL EPITHELIUM. *(E.)* Iemhoff, W. G. J. (Rotterdam Med. Sch., Netherlands), J. W. O. Van Den Berg, A. M. De Pijper and W. C. Hulsmann. *Biochim Biophys Acta* 215(2):229-241, 1970.

Epithelial cells from the small intestine of the rat were isolated according to mechanical procedures as described by Sjöstrand and Harrison and Webster, resp., and the two methods compared with regard to yield and integrity of the cells obtained. While the cells in the suspension prepared by the method of Sjöstrand showed signs of appreciable morphological and biochemical damage, the cells harvested according to the principle of Harrison and Webster appeared essentially intact and displayed a glycolytic activity, in the absence of added cofactors, of the same order as intestinal mucosa *in situ*. The cells isolated by the second method were homogenized and the homogenate subjected to differential centrifugation, and a mitochondrial preparation was obtained which showed intact oxidative phosphorylation. The stimulation of respiration by the addition of ADP was small; ATPase activity, stimulated by Mg^{2+} or 2,4-dinitrophenol was present. Analysis of adenine nucleotide concentrations in intestinal mucosa revealed a high AMP+ADP to ATP concentration ratio, which may be the reason for the high rate of aerobic glycolysis of rat small intestinal epithelium.

7987 OSMOLALITY OF DUODENAL ASPIRATE FOLLOWING SECRETIN INFUSION IN MAN. *(E.)* Pascal, J. P. (Hosp. Purpan, Toulouse, France), R. Guiraud, N. Vayesse and D. Augier. *Digestion* 3(4):222-230, 1970.

7988 DEGRADATION OF PARTIALLY DENATURED ALBUMIN IN ISOLATED PERFUSED INTESTINE OF NORMAL AND IRRADIATED RATS. *(Ger.)* Gerber, G. B. (Dept. Radiobiol., C.E.N.-S.C.K., Mol, Belgium), J. Remy-Defraigne and D. Kocmierska-Grodzka. *Strahlentherapie* 139(6):744-749, 1970.

7989 THE HYDROLYSIS AND ABSORPTION OF CARBOHYDRATES BY THE EPITHELIAL CELL OF THE SMALL INTESTINE. *(E.)* Prichard, J. S. (Radcliffe Infirm., Oxford). *Oxford Med Sch Gazz* 23(1):30-35, 1970.

7990 VITAMIN A AND RIBONUCLEIC ACID SYNTHESIS IN RAT INTESTINE. *(E.)* Zile, M. (Dept. Biochem., U. Wisconsin, Madison) and H. F. DeLuca. *Arch Biochem Biophys* 140(1):210-214, 1970.

o P:Morph (7775) (7803) (7813) (7821) (7823)
o P:Absorp (7837) (7844) (7848)
o P:Motil (7853) (7854)
o P:Secr:Stom (7873)
o P:Secr:Hepatobil (7883) (7887)
o D:Livbil (8273)

7991 EFFECT OF COPROPHAGY PREVENTION AND ANTIBIOTICS ON CHOLINE DEGRADATION IN RATS.

(E.) Kwong, E. (Grad. Sch. Nutr., Cornell U., Ithaca, N.Y.) and R. H. Barnes. *J Nutr* 100(7): 711-714, 1970.

The relative effectiveness or prevention of coprophagy in altering intestinal microflora was evaluated in rats by measuring the total trimethylamine in urine arising from intestinal microflora acting upon a test dose of choline given by gastric intubation. Preventing coprophagy lowered the urinary total trimethylamine by approximately 30%; dietary supplements of chlortetracycline or phthalylsulfathiazole reduced total trimethylamine slightly more effectively than coprophagy prevention. A combination of chlortetracycline and phthalylsulfathiazole was more effective (60%) in lowering trimethylamine than either compound alone. Penicillin alone had little or no effect upon choline degradation; however, a combination of penicillin and phthalylsulfathiazole showed remarkable synergistic effect for the inhibition of total trimethylamine excretion (83%), an effect greater than for any other treatment studied. Microbial degradation of choline in the rat probably takes place mostly in the lower part of the intestine but the extent of this degradation may be greatly modified by changes in the bacterial population of the upper intestinal tract.

7992 BACTERIAL HISTIDINE DECARBOXYLASE IN RAT STOMACH.

(E.) Beaven, M. A. (Natl. Heart Lung Inst., Natl. Inst. Hlth., Bethesda, Md.), Z. Horakova and W. B. Severs. *Europ J Pharmacol* 11(2):233-240, 1970.

One of two histidine decarboxylase activities found in rat stomach was present in the supernatant fraction of stomach homogenate, had optimum activity at pH 7 and appeared similar to the specific mammalian L-histidine decarboxylase (EC 4.1.1.22) described by other workers. The second, in the insoluble residue of stomach homogenate, had a pH optimum of 5 and resembled the *Lactobacillus* L-histidine decarboxylase (EC 4.1.1.22). This second, residue enzyme was located in the upper part of normal rat stomach, an area which supported a heavy growth of *Lactobacillus*. The residue histidine decarboxylase activity was absent in germ-free rat stomach and was therefore thought to be of bacterial origin. In view of the coprophagic activity of rats, feces could serve as an inoculum of *Lactobacillus* in stomach, and the levels of activity of the residue enzyme were found to be related to the state of cleanliness of the animal cages; other factors, such as starvation and drug treatment also affected levels of the residue enzyme. The histamine content of stomach appeared to be related in part to the activity of the residue histidine decarboxylase.

7993 EXPERIMENTAL MESENTERIC VENOGRAPHY.

(E.) Gyepes, M. T. (UCLA Sch. Med., Los Angeles, Calif.) and J. Rosch. *Invest Radiol* 5(4):257-260, 1970.

Transjugular mesenteric venography with obstruction of the superior mesenteric vein by a balloon catheter allowed excellent visualization of the mesenteric veins. The method was a combination of two techniques: first, a portacaval shunt was created by transhepatic puncture of the portal vein with a modified Ross needle which was introduced via the jugular vein. The puncture tract in the liver was then dilated by coaxial catheters and a large catheter was left in the portal vein. Thereafter a double-lumen balloon catheter was introduced through the transjugular catheter and was positioned in the superior mesenteric vein. By inflating the balloon, runoff into the liver was stopped temporarily, and contrast material was injected through the second lumen. Excellent visualization of the mesenteric venous bed was obtained consistently; visualization of the small venous branches was further enhanced by superselective catheterization.

7994 THE REACTION OF LIVER BLOOD FLOW DURING AN INCREASE IN LIVER OXYGEN CONSUMPTION.

(Ger.) Scholtholt, J. (Physiol. Inst. U. Dusseldorf, Germany). *Pflueger Arch* 318(3):202-216, 1970.

The effect of increased hepatic oxygen consumption on blood flow in the hepatic artery and portal vein was determined in anesthetized mongrel dogs; oxygen consumption was increased by portal infusion of casein hydrolysate (amino acids), and artificial respiration was used to maintain constant alveolar CO_2 pressure. The infusion increased the O_2 consumption/100 g liver from 1.99 ml/min to 3.88 ml/min, and accelerated the arterial hepatic blood flow from 19.8 to 34.4 ml/min/100 g. The portal vein flow rate increased 16% during infusion, and the oxygen fractio given off to the liver by this vessel increased from 2.57 to 3.72 ml O_2/min/100 g. The flow rate of both hepatic vessels was related to the metabolic activity and oxygen consumption by the liver.

7995 THE REACTION OF LIVER AND INTESTINAL BLOOD FLOW TO A GENERAL HYPOXIA, HYPOCAPNIA AND HYPERCAPNIA IN THE ANESTHETIZED DOG.

(Ger.) Scholtholt, J. (Physiol. Inst. U. Dusseldorf, Germany and T. Shiraishi. *Pflueger Arch* 318(3):185-201, 1970

Blood flow was determined in hepatic arteries and portal veins of 18 anesthetized dogs in which spontaneous breathing was blocked with succinyl choline and artificial respiration was maintained using various concentrations of oxygen and CO_2. Lowering the arterial oxygen pressure from 132 mm Hg to 44 mm Hg (hypoxia) did not affect blood flow in either vessel, since the observed increased resistance of the mesenteric vessels was compensated by increased perfusion pressure. Hypercapnia produced by elevating the arterial CO_2 pressure from 42 mm Hg to 65 mm Hg caused a 42.8% acceleration of the mesenteric blood flow an a 17.6% increase of the hepatic arterial flow. A direct relationship between CO_2 pressure and blood flow in hepatic arteries and in mesenteric vessels was postulated.

7996 SOURCES OF INNERVATION OF HEPATIC VEINS. *(Rus.)* Sapozhkova, M. Ya. (Med. Inst. Kemerovo, USSR). *Arkh Anat* 58(5):107-110, 1970.

7997 MODEL OF HEMODYNAMIC RELATIONS IN THE MICROCIRCULATORY BED OF SMALL INTESTINE MESENTERY IN THE GUINEA PIG. *(Rus.)* Kozlov, V. I. (Pirogov 2nd Med. Inst., Moscow, USSR). *Arch Anat* 58(5):61-69, 1970.

7998 VIRUS MULTIPLICATION IN ORGAN CULTURES OF HUMAN EMBRYO SMALL INTESTINE. *(E.)* Stenhouse, A. C. (Leahi Hosp., Honolulu, Hawaii). *J Gen Virol* 8(3):235-239, 1970.

7999 CONTRACTIONS OF INTESTINAL VASCULAR SMOOTH MUSCLE *IN SITU* AT CONSTANT PRESSURE OR CONSTANT FLOW PERFUSION AND THEIR DEPENDENCE ON THE RESTING PRESSURE. *(Ger.)* Lutz, J. (Physiol. Inst. U. Wurzburg, Germany) and H. Henrich. *Pfluger Arch* 319(1):68-81, 1970.

8000 MYCOBACTERIA IN HUMAN FECES. *(Ger.)* Nassal, J. (St. Pharm. Testing Office, Heidelberg, Germany) and B. Warner-Schieck. *Prax Pneumol* 24(8):473-478, 1970.

8001 PERFUSION OF THE ISOLATED PIG LIVER: I. MECHANICAL CHARACTERISTICS OF THE CIRCUIT. *(E.)* Hickman, R. (Groote Schuur Hosp., Cape Town, Union of South Africa), S. J. Saunders and J. Terblanche. *S Afr Med J* 44(30):868-872, 1970.

8002 EXPERIENCE WITH MATHEMATICAL ANALYSIS OF CAPILLARY-NEUROCELLULAR RELATIONS IN THE INTESTINE. *(Rus.)* Melman, E. P. (Ivano-Frankousk Med. Inst., USSR), L. D. Maslennikova and E. I. Atamanchuk. *Vestn Akad Med Nauk SSSR* 25(2):56-62, 1970.

o P:Secr:Hepatobil (7905) (7924)
o P:Secr:Int (7983)
o D:Gen (8461) (8477)

DIAGNOSTIC PROCEDURES

8003 INTRALUMINAL SMALL-INTESTINAL UTILIZATION OF d-XYLOSE BY BACTERIA: A LIMITATION OF THE d-XYLOSE ABSORPTION TEST. *(E.)* Goldstein, F. (Lankenau Hosp., Philadelphia, Pa.), S. Karacadag, C. W. Wirts and O. D. Kowlessar. *Gastroenterology* 59(3):380-386, 1970.

Poor correlation between tests of fat absorption and the *d*-xylose test was noted in patients with variants of the blind loop syndrome. In such patients manifesting inordinately low *d*-xylose urinary excretion, coliform bacteria were recovered from the upper small intestine which on *in vitro* incubation manifested the ability to utilize *d*-xylose for their own metabolism. Perfusion of the duodenum and about 1 ft of jejunum with 25 g of *d*-xylose was performed in 3 volunteers and in 1 suitably selected patient before and after the eradication of heavy coliform growth. Phenol red was used as a nonabsorbable marker during the perfusion studies. The results of the perfusion tests and the clinical correlations indicated that multigram quantities of xylose may disappear from the lumen of the small intestine in patients with excessive coliform growth, presumably because bacteria metabolize xylose as substrate for their own metabolism. In such patients urinary xylose measurements may lead to erroneously low estimates of xylose absorption.

8004 RETROGRADE PANCREATOGRAPHY AND CHOLANGIOGRAPHY BY FIBER DUODENOSCOPE. *(E.)* Takagi, K (Cancer Isnt. Hosp., Tokyo, Japan), S. Ikeda, Y. Nakagawa, N. Sakaguchi, T. Takahashi, K. Kumakura, M. Maruyama, N. Someya, H. Nakano, T. Takada, T. Takekoshi and T. Kin. *Gastroenterology* 59(3):445-452, 1970.

Simultaneous pancreatography and cholangiography after cannulation of the ampulla of Vater was performed on patients with choledocholithiasis, diagnosed by retrograde cholangiography. A fiber duodenoscope was inserted under direct vision into the descending part of the duodenum of patients under general anesthesia. The ampulla of Vater was observed in 4 of 7 patients and cannulation of the ampulla was successful in 2 cases. Cholangiography was performed along with pancreatography by the infusion of 60% urografin. The relation of the formation of a common channel between the common bile and pancreatic ducts and changes in the ampulla of Vater caused by disease were studied radiographically by the cannulation of the ampulla of Vater. Serum amylase level increased abruptly (from 105 to 2890 Smith Roe units the 1st day after pancreatography) but returned to the normal level within 1 week in the subject whose entire pancreas was visualized by radiography.

8005 THE ASHING TECHNIQUE AS A MORE PRECISE METHOD FOR THE RADIOASSAY OF ^{51}Cr IN FECES. *(E.)* Kuiper, D. H. (Coll. Human Med., Michigan St. U., East Lansing), D. J. Fall and H. M. Pollard. *J Nucl Med* 11(9):527-529, 1970.

Two methods for the radioassay of stool for blood loss using ^{51}Cr tagged erythrocytes were compared. One method assayed a sample of the 24-hr stool homogenate, while the other method assayed the ash of the entire 24-hr fecal collection. The ashing technique revealed better precision in recovery as shown by standard deviation of 3.0 as compared to a standard deviation of 32.0 using the wet technique. The ashing method concentrates a large volume of stool, thereby yielding higher counts per sample and thus reducing the error in counting.

8006 AN IMPROVED COMPRESSED AIR APPARATUS FOR EXFOLIATIVE CYTOLOGY OF THE STOMACH. *(E.)* Wenger, J. (VA Hosp., Atlanta, Ga.) and E. Penfold. *Gastroenterology* 59(3):358-363, 1970.

Exfoliative cytology of the stomach was simplified by a collection method which used a compressed air apparatus to deliver 300 ml of fluid to the gastric mucosa in 15 to 30 sec with a pressure of 15 to 20 psi; retrieval of the fluid was accomplished within 30 to 60 sec with slight negative pressure. The mucosa was lavaged 8 to 12 times within a period of 10 to 12 min while the patient was seated comfortabl The test can be performed by technicians instructed in gastric intubation techniques but without cytolog training. No adverse reactions followed the use of this method in more than 500 tests; its simplicity results in greater use of gastric exfoliative cytology without loss of diagnostic accuracy.

8007 THE SPECIFICITY OF SERUM IMMUNOGLOBULIN LEVELS IN THE DIAGNOSIS OF ACUTE HEPATITIS COMPARED WITH OTHER BIOCHEMICAL RESULTS. *(Ger.)* Kindler, U. (1st Med. Clin. U. Dusseldorf, Germany) and D. Koch. *Deutsch Med Wschr* 95(28):1483-1486, 1970.

The specific behavior of immunoglobulin in hepatitis was investigated in 47 patients with hepatitis by comparison of the results with other laboratory findings. The following determinations were made at the same time: total bilirubin; serum transaminase; total protein and paper-electrophoretic serum protei fractionation. IgG, IgA and IgM (measured by radial immunodiffusion) were of little diagnostic value and could not replace determination of transaminase and bilirubin levels in serum. There was no definit correlation between immunoglobulin content and pape electrophoretic serum protein fractionation. Nonetheless, the latter gave similar results as immunoglobulin in the evaluation of the course of hepatiti

8008 ANGIOSCANOGRAPHY IN MALIGNANCY. *(E.)* Katsube, Y. (Tottori U. Sch. Med., Japan) H. Ishikawa, M. Shishido and M. Shimizu. *Yonago Ac Med* 14(1):33-39, 1970.

A technique of positive scanning or angioscanograph employing injections of ^{131}I-macroaggregated albumi into the artery through the same catheter used in arteriography was used in 43 patients with proven malignancy (including liver and pancreatic tumors). With this method, high concentrations of ^{131}I-macroaggregated albumin corresponded to neovascularity associated with neoplasms on arteriograms. Clinical results showed that arteriography and angioscanography diagnosed diseases in 28 of 43 patients on day 1 of scanning. On day 2 of testing, only 6 malignancies were diagnosed by arteriography alone, while on day 3, 4 malignancies were observed by angioscanography alone. Five cases were not diagnosed on day 4 by either method. Angioscanography, when combined with selective arteriography would appear to be valuable in evaluation of malignancy.

8009 COMPUTED NORMAL VALUES FOR PEAK ACID OUTPUT BASED ON AGE, SEX, AND WEIGHT. *(E.)* Martin, H. F. (Rhode Island Hosp., Providence), A. H. Blackman, D. L. Lambert and W. R. Thayer. *Amer J Dig Dis* 15(9):783-789, 1970.

A table of computed normal ranges for histamine acid phosphate stimulated peak acid output was constructed by deriving an empirical equation for peak acid output according to age, sex and weight, utilizing previous data on gastric acid output available in the literature. The reliability of this table was substantiated by results of the peak acid output obtained in 64 patients (54 males and 10 females) with proven duodenal ulcer and in 38 normal subjects (26 males and 12 females). When compared to the computed normal values based on sex, age and body weight, 90% of patients with duodenal ulcers fell outside the expected normal range and 92% of the normal subjects fell within the computed normal range. This does not mean that everyone outside the expected normal has a duodenal ulcer but it suggests that the individual may be a potential candidate for development of ulcer disease.

8010 CORRELATION OF MEASURED VOLUME WITH RADIOLOGIC APPEARANCE OF INTESTINAL GAS IN NORMAL SUBJECTS. *(E.)* Wittenberg, J. (Boston U. Sch. Med., Mass.) and M. D. Levitt. *Invest Radiol* 5(4):244-249, 1970.

Measurements of the volume of intestinal gas by a washout technique in 9 normal subjects were correlated with the appearance of this gas on abdominal roentgenograms. The total volume of intestinal gas ranged from a low of 30 ml to a high of 199 ml with an average of 86 ml. Three experienced radiologists, after being shown the roentgenograms of subjects with high (199 ml), medium (70 ml), and low (30 ml) quantities of gas and informed of the measured volume of gas for each of these 3 subjects, estimated the gas volume of the remaining 6 subjects with errors of 9, 18 and 20%, resp. The ability to evaluate semiquantitatively normal gas volumes can probably be achieved with a minimum of training by experienced radiologists.

8011 SCANNING ELECTRON MICROSCOPY: A NEW METHOD IN THE STUDY OF RECTAL MUCOSA. *(E.)* Kavin, H. (U. Witwatersrand Med. Sch., Johannesburg, Union of South Africa), D. G. Hamilton, R. E. Greasley, J. D. Eckert and G. Zuidema. *Gastroenterology* 59(3):426-432, 1970.

The use of the scanning electron microscope in studying the surface structure of the rectum was described. The surface of normal rectal mucosa presented a remarkably neat and geometrical pattern comprising numerous polygonal units, each with a central crypt surrounded by epithelial cells and goblet cells; the units were delineated by shallow furrows. The rectal mucosal surface of patients with chronic ulcerative colitis in remission was distorted by irregular corrugations probably due to bands of irregularly regenerating epithelial cells. The hemispherical projections corresponding to the surfaces of columnar epithelial cells or goblet cells were not evident, but the surface appeared irregular and flattened. Scanning electron microscopy may be a valuable additional tool in the investigation of the surface pathology of the rectal mucous membrane.

8012 LOCALIZATION OF RECORDING SITE IN THE ESOPHAGUS BY MEANS OF CARDIAC ARTIFACTS. *(E.)* Trop, D. (Acad. Hosp. St. Rafael, Louven, Belgium), R. Peeters and K. P. Woestijne. *J Appl Physiol* 29(3):283-287, 1970.

The modifications of esophageal pressure (recorded by a balloon system) caused by cardiac oscillation were mapped and found to have a typical morphology at every level of the esophagus. Comparison of these artifacts at different esophageal heights and various respiratory levels, demonstrated that pressure was recorded at the top of the long balloon, in the sitting position, when there was a continuous pressure gradient in the esophagus. However, when the top of the balloon was located in a region of the esophagus with a more positive pressure than at a next lower level, the pressure and the artifact was recorded at that lower level. Shifts of the pressure recording site inside the long balloon were particularly frequent in the supine position. The better reproducibility of the lung compliance value at different levels in the esophagus, observed with the long balloon, was a consequence of these shifts in pressure recording site; similar shifts occurred depending on the state of inflation of the lungs. The regular sequence of the cardiac artifacts along the esophagus allows for comparison between regionally equivalent pressures in different individuals.

8013 ROENTGEN AND RADIOACTIVE ISOTOPE INVESTIGATION IN SUBDIAPHRAGMATIC LIVER ECHINOCOCCOSIS. *(Rus.)* Deineka, I. Ya. (Pirogoy Med. Inst., Odessa, USSR), E. D. Dubovyi and V. V. Demidas. *Klin Khir* (2):27-32, 1970.

8014 DIAGNOSTIC STAGES OF JAUNDICE. *(Fr.)* Hecht, Y. (no affil). *Concours Med* 92(22):4953-4967, 1970.

8015 PANCREATIC SCINTILLOGRAPHY: USE AND DRAWBACKS IN SURGERY. *(Fr.)* Doutre, L. P. (Hosp. St. Andre, Bordeaux, France), P. Blanquet, J. Perissat, C. Beck and J. C. Beaulieu. *Chirurgie* 96(7):500-505, 1970.

8016 INDOCYANINE-GREEN TEST IN THE DIAGNOSIS OF COMPENSATED LIVER CIRRHOSIS. *(Ger.)* Janecki, J. (Med. Acad. Warsaw, Poland) and B. Milewski. *Z Ges Inn Med* 25(11):505-508, 1970.

8017 FLUORESCENT IMMUNO TEST FOR ENTEROPATHOGENIC *COLI* STRAINS. *(Ger.)* Trub, C. L. P. (no affil), W. Boese and J. Posch. *Med Monatsschr* 24(8):347-353, 1970.

8018 THE VALUE OF OPERATIVE CHOLANGIOGRAPHY. *(E.)* Lawson, R. A. M. (Shotley Bridge Hosp., Durham, Scotland) and A. A. Gunn. *J Roy Coll Surg Edinb* 15(4):222-227, 1970.

8019 Vi HEMAGGLUTINATION TEST FOR THE IDENTIFICATION OF TYPHOID CARRIERS. *(E.)* Anderson, K. (Inst. Med. Vetr. Sci., Adelaide, Australia). *Guys Hosp Rep* 119(2):111-117, 1970.

8020 LIVER AND SPLEEN SCANNING WITH RADIOACTIVE COLLOIDAL GOLD IN CHRONIC LIVER DISEASES. *(Ger.)* Cotul, S. (3rd Med. Clin. U. Cluj, Rumania), O. Fodor, G. Nicoara and I. Szantay. *Z Gastroent* 8(4):223-226, 1970.

8021 THE INTRADERMAL REACTION IN AMEBIASIS. *(E.)* Miller, M. J. (Dept. Trop. Med., Tulane U., New Orleans, La.) and F. Scott. *Canad Med Ass J* 103(3):253-257, 1970.

8022 DIAGNOSIS OF ESOPHAGITIS. *(Ger.)* Stadelmann, O. (Med. U. Polyclin. Bonn, Germany). *Deutsch Med Wschr* 95(30):1568-1570, 1970.

8023 QUANTITATIVE IMMUNOGLOBULIN DETERMINATIONS IN PATIENTS WITH HEPATIC DISEASES. *(Ger.)* Roser, H. (no affil.). *Munchen Med Wschr* 112(30):1392-1394, 1970.

8024 HOW TO ACHIEVE OPTIMAL IMAGE CONDITIONS IN APPARATUS FOR EXAMINATIONS OF THE STOMACH. *(Ger.)* Gajewski, H. (no affil.) and H. Kuhn. *Roentgenblatter* 23(7):298-309, 1970.

8025 COMPLICATIONS OF THE HISTALOG TEST OF GASTRIC ACID SECRETION. *(E.)* Stoller, J. L. (Vancouver Gen. Hosp., Canada), I. B. Holubitsky, R. C. Harrison and A. I. Munro. *Amer J Dig Dis* 15(7):647-651, 1970.

8026 DUODENAL BULB VISUALIZATION WITH THE HIRSCHOWITZ GASTRODUODENAL FIBERSCOPE AND THE HIRSCHOWITZ GASTRODUODENAL FIBERSCOPE WITH DEFLECTING TIP: A COMPARATIVE STUDY. *(E.)* Belber, J. P. (Martinez, Calif.). *Gastroint Endosc* 17(1):34-35, 1970.

8027 COMPARISON OF RANDOM CYTOLOGIC WASHING AND INTRAGASTRIC BRUSHING UNDER DIRECT VISION. *(E.)* Harper, D. T., Jr. (Johns Hopkins U. Sch. Med., Baltimore, Md.), N. L. Christopher, A. E. Cocco and Y. S. Erozan. *Gastroint Endosc* 17(1):36-37, 1970.

8028 DIAGNOSIS AND MANAGEMENT OF HEPATIC TRAUMA. *(E.)* McClennand, R. N. (U. Texas Southwestern Med. Sch., Dallas) and G. T. Shires. *Postgra Med* 48(3):200-205, 1970.

8029 STOOL TRYPSIN ASSAY. *(E.)* Tarlow, O. (Inst Child Hlth., London, England) and M. J. Tarlow. *Lancet* 2(7673):617-618, 1970.

8030 ESOPHAGEAL MANOMETRY IN CLINICAL MEDICINE. *(E.)* Manier, J. W. (Marshfield Clin., Wisc.) and D. D. Mulholland. *Amer J Gastroent* 54(2):101-111, 1970.

8031 DIAGNOSTIC MODALITIES IN JAUNDICE. *(E.)* Coodley, E. L. (Hahnemann Med. Coll., Philadelphia, Pa.). *Amer J Gastroent* 54(2):112-125, 1970.

8032 AN ASSESSMENT OF THE VALUE OF THE ABDOMINA EXPLORATORY LAPAROTOMY. *(E.)* Griffin, B. G. (Baylor U. Sch. Med., Houston, Texas). *Amer J Gastroent* 54(2):134-140, 1970.

8033 THE CLINICAL USE OF GASTRIC FUNCTION TESTS *(E.)* Baron, J. H. (Roy. Postgrad. Med. Sch., London, England). *Scand J Gastroent* 5(suppl. 6):9-46, 1970.

8034 PROBLEMS OF DIFFERENTIAL DIAGNOSIS IN ANGIOGRAPHY OF THE PANCREAS. *(E.)* Benko, G. (Med. U. Pecs, Hungary). *Radiol Clin Biol* 39(4):334-347, 1970.

8035 IMMUNOGLOBULIN LEVELS IN DETECTION OF VIRAL HEPATITIS. *(E.)* Peters, R. L. (U. Southern California Sch. Med., Los Angeles) and M. Ashcaval. *Amer J Clin Path* 54(1):102-109, 1970.

8036 IMPROVEMENTS IN INTRAVENOUS CHOLANGIOGRAP *(E.)* Nolan, D. J. (United Bristol Hosp., England) and M. J. Gibson. *Brit J Radiol* 43(513):652-657, 1970.

8037 DIRECT VISION GASTRIC BIOPSY USING THE MACHIDA FGS-B_6 GASTROSCOPE. *(E.)* Weiss, J. B. (St. Luke's Hosp. Ctr., New York, N. Y.), M. J. Gang, T. J. Ekkers, H. P. Goetz and R. S. McCray *Gastroint Endosc* 17(1):23-27, 1970.

8038 SCINTILLATION SCANNING IN THE DIAGNOSIS OF HEPATIC ABSCESS IN CHILDREN. *(E.)* O'Mara, R. E. (Upstate Med. Ctr., State U. New York, Syracuse) and J. G. McAfee. *J Pediat* 77(2):211-215, 1970.

8039 THE DIAGNOSIS OF CARCINOMA OF THE PANCREAS. *(E.)* Walker, R. J. (Dept. Med., U. Edinburgh, Scotland). *J Roy Coll Surg Edinb* 15(4):185-190, 1970.

8040 TESTS OF PANCREATIC FUNCTION. *(E.)* Wormsley, K. G. (Roy. Infirm., Sheffield, England). *Brit J Clin Pract* 24(7):271-275, 1970.

8041 CLINICAL SIGNIFICANCE OF CHOLEDOCHOPANCREATIC REFLUX IN OPERATIVE CHOLANGIOGRAPHY. *(Rus.)* Kurygin, A. A. (Kirov Med. Acad., Leningrad, USSR) and K. V. Novikov. *Klin Khir* (2):15-18, 1970.

8042 RADIOISOTOPE INVESTIGATION OF THE LIVER FUNCTION UNDER CYCLOPHOSPHAN TREATMENT OF LUNG CANCER. *(Rus.)* Starinsky, V. V. (P. A. Gertsen Sci. Res. Inst. Oncology, Moscow, USSR), A. Kh. Trakhtenberg and I. N. Batinov. *Med Radiol* 15(4):32-38, 1970.

8043 SIGNIFICANCE OF THE PYRILENE TEST IN ROENTGENDIAGNOSIS OF PEPTIC ULCER. *(Rus.)* Kanischev, P. A. (Dnepropetrousk Sci. Res. Inst. USSR), V. G. Kuznetsov and V. D. Guivik. *Ter Arkh* 42(5):29-30, 1970.

8044 PANCREAS SCANNING WITH SELENIUM METHIONINE IN ACUTE PANCREATITIS: DIAGNOSTIC AND PROGNOSTIC VALUE. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), J. C. Roucayrol and J. P. Lenriot. *Chirurgie* 96(8):573-576, 1970.

8045 WHEN IS GASTROSCOPY NEEDED? *(Fr.)* Leymarios, J. (no affil). *Concours Med* 92(26):5867-5874, 1970.

8046 THE DIAGNOSTIC ERRORS IN ACUTE GASTRIC DILATATION. *(Rus.)* Murlaga, S. E. (A. V. Vishnevski Inst. Surg., USSR). *Vestn Khir* 104(3):111-114, 1970.

8047 PERORAL CHOLECYSTOGRAPHY AND CODEINE BLOCKING OF THE SPHINCTER OF ODDI. *(It.)* Leonardi, M. (Civ. Hosp. Udine, Italy) and T. Tassini. *Quad Radiol* 35(1):59-72, 1970.

8048 DIFFERENTIAL DIAGNOSIS OF ULCERATIVE COLITIS. *(E.)* Andreassen, M. (U. Hosp. Copenhagen, Denmark). *Bibliothec Gastroent* 9:104-105,1970.

8049 I^{131} ROSE BENGAL EXCRETION IN NUTRITIONAL ANEMIA. *(E.)* Sharma, B. N. (no affil) and G. C. Mookerjee. *J Ass Physicians India* 18(6):557-562, 1970.

8050 LIVER BIOPSY IN HEPATOMEGALY: ANALYSIS OF 525 CASES OF HEPATOMEGALY. *(E.)* Victor, G. (Stanley Med. Coll., Madras, India). *J Ass Physicians India* 18(6):567-572, 1970.

8051 ^{99m}Tc-TECHNETIUM DIOXIDE FOR LIVER SCANNING. *(E.)* Johnson, A. E. (U. Miami Sch. Med., Fla.) and F. Gollan. *J Nucl Med* 11(9):564-565, 1970.

8052 CORRELATION OF VARIOUS ABSORPTION TESTS AND THEIR UTILITY IN THE DIAGNOSIS OF MALABSORPTION SYNDROMES. *(E.)* Pimparkar, B. D. (Seth C. S. Med. Coll., Parel, India), U. M. Dondo, R. K. Anjaria and P. Raghavan. *J Ass Physicians India* 18(6):539-550, 1970.

8053 ULTRASOUND IN THE DIAGNOSIS OF MALIGNANT PANCREATIC TUMORS. *(E.)* Engelhart, G. (U. Hosp. Basel, Switzerland) and U. W. Blauenstein. *Gut* 11(5):443-449, 1970.

8054 EXPERIENCES WITH A RAT BIO-ASSAY IN THE DIAGNOSIS OF THE ZOLLINGER-ELLISON SYNDROME. *(E.)* Thomson, C. G. (Western Gen. Hosp., Edinburgh, Scotland), I. G. M. Cleator and W. Sircus. *Gut* 11(5):409-419, 1970.

o P:Morph (7779)
o P:Absorp (7826)
o P:Gen (7993)
o D:Esoph (8081)
o D:Stomduo:Peptulc (8141)
o D:L.Intest:Grancol (8219)
o D:Livbil (8266) (8293) (8312)
o D:Gen:Parasit (8493)

GASTROINTESTINAL DISEASES

ESOPHAGUS

8055 CONTROLLED PRODUCTION OF ACUTE ESOPHAGITIS: EXPERIMENTAL ANIMAL MODEL. *(E.)* Goldberg, H. I. (U. California San Francisco Med. Ctr.), W. J. Dodds, C. Montgomery, S. A. Baskin, F. F. Zboralske. *Invest Radiol* 5(4):254-256, 1970.

The reproducibility of esophagitis severity and depth of injury for different acid-pepsin infusion times were investigated in unanesthetized, adult cats. The depth of esophageal injury was limited to the mucosa and was accompanied by some epithelial erosion and edema in all 9 cats which received a 1 hr infusion and only 1 of these animals had complete erosion of the epithelium. The depth of injury extended into the submucosa accompanied by complete epithelial erosion and proteolytic changes in 4 of 11 animals which received a 2 hr infusion. Of 7 cats with injury confined to the mucosa, 6 had complete epithelial erosion. No significant difference in the severity of the esophagitis existed between animals infused with the acid-pepsin solution for 1 hr and animals infused with the acid-pepsin solution for 1 hr and 3 additional hr with saline solution, whereas a significant difference was seen between animals infused for 4 hr with the acid-pepsin solution and the group infused for 1 hr with the acid-pepsin solution and for 3 additional hr with saline solution. The depth of esophageal injury can be determined reliably by selection of the appropriate infusion time.

8056 EXPERIMENTAL REPLACEMENT OF THE THORACIC SEGMENT OF THE ESOPHAGUS WITH A PLASTIC PROSTHESIS. *(Rus.)* Gogolashvily, G. D. (Tsalendzhirh Hosp., Georgian SSR, USSR). *Eksp Khir Anest* 15(3):15-19, 1970.

8057 ILEOCECAL VALVE IN TOTAL ESOPHAGEAL HOMOGRAFT. *(Rus.)* Filin, V. I. (Dzhanelidze Emerg. Sci. Res. Inst., Leningrad, USSR). *Vestn Khir* 104(2):44-47, 1970.

8058 A VARIANT OF DYSPHAGIA LUSORIA. *(E.)* Hootkin, L. A. (Johns Hopkins U. Sch. Med., Baltimore, Md.) and A. E. Cocco. *Gastroint Endosc* 17(1):45-46, 1970.

8059 THERAPY OF ESOPHAGITIS. *(Ger.)* Stadelmann, O. (Med. U. Polyclin. Bonn, Germany). *Deutsch Med Wschr* 95(30):1570-1572, 1970.

8060 PROSTHESIS IN INOPERABLE MALIGNANT STENOSES OF THE UPPER GASTROINTESTINAL TRACT. *(Ger.)* Moschinski, D. (Essen Clin. Ruhr U. Bochum, Germany) and R. Sailer. *Bruns Beitr Klin Chir* 218(2):126-130, 1970.

8061 TREATMENT OF HIATAL HERNIA BY GASTROPEXY: DELAYED RESULTS. *(Fr.)* Henrion, C. (Boussu, Belgium). *Chirurgie* 96(8):553-556, 1970.

8062 IDIOPATHIC MEGA-ESOPHAGUS: STATISTICAL ANALYSIS OF 53 OPERATIONS ACCORDING TO HELLER'S PROCEDURE. *(Fr.)* Lagache, G. (City Hosp. Lille, France), B. Combemale and S. El Hassar. *Lille Med* 15(4):647-651, 1970.

8063 CATHETERIZATION TECHNIQUE IN THE MANAGEMENT OF STARVATION THROUGH ESOPHAGEAL STENOSIS. *(Ger.)* Gradaus, D. (Med. Clin. Polyclin. U. Munster, Germany), D. Kienecker, F. Bender and E. Schmidt. *Med Welt* 21(30):1349-1353, 1970.

8064 ESOPHAGITIS: PATHOLOGY AND CLINICAL FINDINGS. *(E.)* Stadelmann, O. (Munic. Hosp. Bayreuth, Germany), K. Elster and R. Ottenjann. *Bibliothec Gastroent* 9:2-45, 1970.

8065 ESOPHAGEAL RUPTURE: A CATASTROPHIC COMPLICATION OF VOMITING. *(E.)* Hiebert, C. A. (Portland, Maine) and E. Gorayer. *J Maine Med Ass* 61(9):175-176, 1970.

8066 PEPTIC ESOPHAGITIS AND ESOPHAGEAL STRICTURE. *(E.)* Allison, P. R. (Radcliffe Infirm., Oxford, England). *Lancet* 2(7665):199-201, 1970.

8067 CLINICAL CONDITIONS ASSOCIATED WITH COLUMNAR LINED ESOPHAGUS. *(E.)* Burns, W. A. (VA Hosp., Washington, D. C.), P. A. Flores, A. Moshyedi and R. A. Albacete. *Amer J Dig Dis* 15(7):607-615, 1970.

8068 ACHALASIA OF THE ESOPHAGUS. *(E.)* Grimes, O. F. (Dept. Surg., U. California, San Francisco), H. B. Stephens and A. R. Margulis. *Amer J Surg* 120(2):198-202, 1970.

8069 CONGENITAL SHORT ESOPHAGUS IN THE NEWBORN. *(E.)* Brown, R. E. (Med. Coll. Virginia, Richmond), G. E. Madge and T. R. Howell. *Amer J Dig Dis* 15(9):863-868, 1970.

8070 THE ESOPHAGUS: 1967 TO 1969 -- PART I. *(E.)* Pope, C. E., II (VA Hosp., Seattle, Wash.). *Gastroenterology* 59(3):460-476, 1970.

8071 EXPERIENCES WITH MANAGEMENT OF MALIGNANT ESOPHAGORESPIRATORY FISTULA BY PERORAL ESOPHAGEAL PROSTHESIS. *(E.)* Palmer, E. D. (New Jersey Coll. Med., East Orange). *Gastroint Endosc* 17(1):12-16, 1970.

8072 NEW THERAPY OF ESOPHAGEAL AND GASTRODUODENAL DISEASES. *(Fr.)* Gazaix, M. (Pasteur Hosp., Nice, France) and J. P. Vedel. *Therapeutique* 46(h.s.):49-51, 1970.

8073 ESOPHAGEAL CANDIDIASIS. *(Fr.)* Lemaitre, G. (C. H. U. Lille, France), C. L'Hermine, C. Proye, A. Rembert and J. C. Beylot. *Lille Med* 15(3):464-467, 1970.

8074 DYSPHAGIA RESULTING FROM ESOPHAGEAL RING. *(E.)* Gerami, S. (U. Tennessee Coll. Med., Memphis) and F. H. Cole. *Ann Thorac Surg* 10(3):223-226, 1970.

8075 ATYPICAL LESIONS OF THE UPPER GASTROINTESTINAL TRACT. *(Ger.)* Lechner, G. (1st Surg. U. Clin. Vienna, Austria), H. Pokieser and W. Zaunbauer. *Wien Z Inn Med* 51(6):274-278, 1970.

8076 CLINICAL PICTURE OF DIFFUSE ESOPHAGEAL SPASM. *(Ger.)* Muller, E. (Essen Clin., Ruhr U., Bochum, Germany) and K. Kremer. *Zbl Chir* 95(34):1025-1028, 1970.

8077 THE NEUROLOGICAL LESION IN ACHALASIA OF THE CARDIA. *(E.)* Smith, B. (St. Bartholomew's Hosp. Med. Coll., London, England). *Gut* 11(5):388-391, 1970.

8078 USE OF PERICARDIUM FOR ESOPHAGOPLASTY IN CONGENITAL ESOPHAGEAL STENOSIS. *(E.)* Vidne, B. (U. Tel-Aviv Med. Sch., Israel) and M. J. Levy. *Surgery* 68(2):389-392, 1970.

8079 SEQUENTIAL GROSS,MICROSCOPIC AND ROENTGENOGRAPHIC FEATURES OF ACUTE FELINE ESOPHAGITIS. *(E.)* Dodds, W. J. (Marquette U. Sch. Med., Milwaukee, Wisc.), H. I. Goldberg, C. Montgomery, W. Ludemann and F. F. Zboralske. *Invest Radiol* 5(4):209-219, 1970.

8080 UNUSUAL ESOPHAGEAL HIATUS HERNIA. *(E.)* Gautam, H. P. (Roy. Infirm., U. Manchester, England). *Brit J Clin Pract* 24(7):301-302, 1970.

8081 SLIDING HIATUS HERNIA ASSESSED BY ESOPHAGOGASTRIC pH AND MANOMETRIC MEASUREMENTS. *(E.)* Aune, S. (Ulleval Hosp., Oslo, Norway) and E. Normann. *Acta Chir Scand* 136(4):319-322, 1970.

8082 ESOPHAGITIS: COMPLICATIONS TREATED BY TOTAL BYPASS WITHOUT ESOPHAGEAL RESECTION. *(E.)* Heimlich, H. J. (Jewish Hosp., Cincinnati, O.). *Ann Thorac Surg* 10(3):203-212, 1970.

8083 ESOPHAGOGASTRECTOMY VERSUS RADIATION THERAPY FOR MIDESOPHAGEAL CARCINOMA. *(E.)* Wilson, S. E. (Wadsworth Hosp., VA Ctr., Los Angeles, Calif.), W. G. Plested and J. S. Carey. *Ann Thorac Surg* 10(3):195-202, 1970.

8084 EXPERIENCE WITH THE THAL GASTROESOPHAGOPLASTY. *(E.)* Read, R. C. (VA Hosp., Little Rock, Ark.), W. S. Wise, C. H. Rivarola, G. D. Williams and W. J. Fink. *Ann Thorac Surg* 10(3):213-222, 1970.

8085 THE MALLORY-WEISS SYNDROME. *(E.)* Nielsen, P. E. (Bispebjerg Hosp., Copenhagen, Denmark) and F. Zachariae. *Acta Path Microbiol Scand* (suppl. 212):166-175, 1970.

o Diagproc (8022) (8030)
o D:Gen (8457)

STOMACH AND DUODENUM

8086 ADENOCARCINOMA OF GLANDULAR STOMACH AND DUODENUM IN WISTAR RATS INGESTING N-METHYL-N'-NITRO-N-NITROSOGUANIDINE, HISTOPATHOLOGY AND ASSOCIATED SECRETORY CHANGES. *(E.)* Bralow, S. P. (Jefferson Med. Coll., Philadelphia, Pa.), M. Gruenstein, D. R. Meranze, A. Bonakdarpour and M. B. Shimkin. *Cancer Res* 30(5):1215-1222, 1970.

Histopathology and secretory changes associated with adenocarcinoma of glandular stomach and duodenum in rats given N-methyl-N'-nitro-N-nitrosoguanidine (in drinking water at a concentration of 83 mg/l) were investigated. After 3 days of treatment, microcysts in the antral and fundal areas and submucosal edema and fibrosis of the basal portion of the mucosa were observed. By the 41st week, mucosal atrophy was marked and occurred predominantly in the pyloroduodenal areas. Multiple superficial ulcerations were found in the antrum and to a lesser degree in the mucosa of the body with great numbers of microcysts and occasional patches of intestinalization and glandular atypism. Tumors were found in 80% of the animals by the 52nd week, 75% of which were adenocarcinomatous lesions of the antrum or duodenum which were either ulcerating, nodular, or polypoid. The volume of gastric secretion and titratable acidity remained at control levels (% of control: range 80-110%) until late (52 weeks) in the course of mucosal atrophy and cancer development. Pepsin concentration and secretion increased (19% and 41%) from day 3, but gradually returned to control levels by the end of the year of carcinogen exposure. N-methyl-N'-nitro-N-nitrosoguanidine appears to be highly suitable for use in experimental models studying gastric carcinogenesis because of the high frequency of tumor formation and minimal toxicity associated with it.

8087 AN ENZYME HISTOCHEMICAL CLASSIFICATION OF GASTRIC CARCINOMA AND ITS SIGNIFICANCE IN PROGNOSIS. *(E.)* Kawashima, T. (Okayama U. Med. Sch., Japan), T. Ogata, T. Matsumoto, F. Murata, H. Tsuda and S. Tanaka. *Gann* 61(4):299-310, 1970.

The activity patterns of aminopeptidase, β-esterase, succinic dehydrogenase and glucose-6-phosphate dehydrogenase in gastric cancers were used to classify the cansers into 7 types. Based on the histochemical findings, a new classification of gastric carcinoma was proposed, and this classification revealed a close correlation between the enzymic pattern and the mode of spreading of the cancer; a correlation in the prognosis of the cancer and the enzymic pattern classification was observed.

8088 PRODUCTION OF TUMORS IN GLANDULAR STOMACH OF HAMSTERS BY N-METHYL-N'-NITRO-N-NITROSOGUANIDINE. *(E.)* Fujimura, S. (Natl. Cancer Ctr., Res. Inst., Tokyo, Japan), K. Kogure, S. Oboshi and T. Sugimura. *Cancer Res* 30(5):1444-1448, 1970.

The gross and histological findings in hamsters administered N-methyl-N'-nitro-N-nitrosoguanidine in drinking water (83 μg/ml) for 6 months or longer were described. Twenty fibrosarcomas in the glandular stomach and 3 adenocarcinomas and 2 fibrosarcomas in the duodenum were observed in animals that died after 6 to 10 months. Almost all the tumors in the glandular stomach were located at the pylorus region; these tumors grew roughly in the mucosa and some almost obstructed the whole cavity of the glandular stomach or infiltrated to adjacent organs. In almost all the cases of fibrosarcomas in the glandular stomach, atypical glandular epithelial proliferation infiltrating into submucosa or muscle layer was also present; no metastasis was found. Adenosarcomas in the duodenum were poor in cellular atypia, but infiltrated the muscle layer and the serosa.

8089 EFFECTS OF ANTRECTOMY ON THE FUNDIC MUCOSA OF THE RAT. *(E.)* Macleod, I. B. (U. Med. Sch., Edinburgh, Scotland), F. Martin and W. Sircus. *Gastroenterology* 59(3):437-444, 1970.

In order to elucidate the relation between antral gastrin and acid and pepsin secretion, antrectomy followed by gastroduodenostomy was performed on 45 adult femal rats, and the size of the gastric mucosa and parietal and peptic cell populations were measured 6 and 9 weeks after operation, and the results were compared with the observations made on matched controls. In addition to an over-all reduction in the size of the fundic mucosa after antrectomy and the consequent reduction in the total cell populations, a reduction in the secretory cell densities was observed. Other morphological changes included mononuclear infiltration and flattening of the mucosa indicative of atrophic gastritis. The slightly more marked changes observed 9 weeks postantrectomy when compared with 6 weeks suggest a progressive phenomenon. The experiments establish a useful experimental model for the production of gastric mucosal hypoplasia.

8090 EFFECT OF ETHANOL ON THE GASTRIC MUCOSA OF THE HEIDENHAIN POUCH OF DOGS. *(E.)* Dinoso, V. P. (Temple U.Hlth. Sci. Ctr., Philadelphia, Pa.), W. Y. Chey, H. Siplet and S. H. Lorber. *Amer J Dig Dis* 15(9):809-817, 1970.

The effect of ethanol on the mucosa of the Heidenhain pouch in dogs was studied by instilling ethanol in concentrations of 10, 20 and 40% using changes in ionic fluxes of an acid solution and mucosal alterations to measure the effects of ethanol. The instillation of 20 or 40% ethanol resulted in increased insorption of H+ and increased exorption of Na+ into the pouch lumen. Following the administration of 20 and 40% ethanol, the mucous layer and mucin content of the lining epithelial cells decreased markedly. The surface of epithelial cells appeared swollen and areas of cellular exfoliation were observed. Hourly bathing with the acid test solution (30 min at hourly intervals for 5 hr) aggravated the injury and induced bleeding, but hourly instillation of a phosphate buffer solution minimized the damage. Ionic fluxes returned to pre-ethanol levels 2 hr after 20% ethanol and 3-4 hr after 40% ethanol. Partial restoration of mucosal damage occurred in 4-6 hr and was complete in 24 hr.

8091 MYELIN FIGURES IN CHRONIC GASTRITIS OBSERVED BY ELECTRON MICROSCOPE. *(Ger.)* Otto, H. F. (Path. Inst. U. Hamburg, Germany). *Beitr Path Anat* 140(4):407-418, 1970.

Myelin figures noted in many forms of cellular pathology were described in gastric mucosal cells obtained from biopsy material of 19 patients with chronic gastritis of various severity. The myelin figures were present in peptic, acid and enterochromaffin cells, as well as in chronic inflammatory cells of the tunica propria. Myelin figures in mitochondrial membranes and cristae suggested that these figures may have originated from damaged mitochondria, especially since signs of cytoplasmic damage were rarely seen. The myelin figures may possibly be caused by impairment of oxidative processes.

8092 HEALTH RESORT TREATMENT OF PATIENTS WITH CHRONIC GASTRITIS AT THE SOUTHERN COAST OF CRIMEA. *(Rus.)* Yastreb, N. I. (V. V. Kuybyshev Sanatorium, Yalta, USSR). *Vrach Delo* (4):132-136, 1970.

8093 SURGICAL TREATMENT OF DUODENAL ULCER. *(Fr.)* Paris, J. (no affil), A. Gerard, J. C. Paris and A. Aoun. *Lille Med* 15(3):457-463, 1970.

8094 GASTRIC SURGERY: A REVIEW. *(Fr.)* Guivarc'h, M. (Hosp. Foch, Suresnes, France). *Rev Prat* 20(16):2613-2633, 1970.

8095 LOCAL COMPLICATIONS IN GASTRIC SURGERY. *(Fr.)* Hillemand, B. (Hosp. Charles Nicolle, Rouen, France). *Rev Prat* 20(16):2661-2675, 1970.

8096 GASTRIC ANTRUM: II. TUMOR AND ULCER PATHOLOGY. *(Fr.)* Guerre, J. (no affil). *Concours Med* 92(22):4981-4989, 1970.

8097 DUODENO-BILIARY DYSKINETIC ATRESIA OF GASTRIC ANTRUM: SURGICAL TREATMENT. *(Fr.)* Kapandji, M. (Hosp. Broussais, Paris, France). *Chirurgie* 96(5):378-385, 1970.

8098 PRIMARY GASTRIC SARCOMA. *(Ger.)* Hoffmann, E. (Surg. Clin. U. Dusseldorf, Germany) and A. Junemann. *Bruns Beitr Klin Chir* 218(2):119-125, 1970.

8099 DIET AND GASTRIC SURGERY. *(Fr.)* Le Quintrec, M. (Hosp. Bichat, Paris, France) and Y. Le Quintrec. *Rev Prat* 20(16):2729-2745, 1970.

8100 GENERAL AND METABOLIC COMPLICATIONS OF GASTRECTOMY. *(Fr.)* Paris, J. (Lille, France). *Rev Prat* 20(16):2703-2716, 1970.

8101 GLYCOREGULATION DISORDERS IN GASTRECTOMIZED PATIENTS. *(Fr.)* Vallin, J. (no affil). *Rev Prat* 20(16):2689-2694, 1970.

8102 DIARRHEA ASSOCIATED WITH GASTRIC SURGERY. *(Fr.)* Dorf, G. (Hotel Dieu Hosp., Paris, France). *Rev Prat* 20(16):2697-2698, 1970.

8103 COMPLICATIONS OF VAGOTOMY. *(Fr.)* Hollender, L. F. (C. H. U. Strasbourg, France) and J. J. Kohler. *Rev Prat* 20(16):2719-2727, 1970.

8104 CHRONIC GASTRITIS. *(Ger.)* Ottenjann, R. (Med. Clin. Polyclin., U. Erlangen-Nuremberg, Germany). *Deutsch Med Wschr* 95(22):1235-1240, 1970.

8105 IMMUNOPATHOLOGICAL ALTERATIONS OF THE GASTRIC MUCOSA. *(Ger.)* Klein, H. J. (Med. Clin. U. Cologne, Germany), T. Gheorghiu and M. Eder. *Z Gastroent* 8(4):201-207, 1970.

8106 HYPERTROPHIC STENOSIS OF THE PYLORUS: TREATMENT OF 351 INFANTS FROM 1945 TO 1964. *(Ger.)* Dean, D. (Canton Hosp. Aarau, Switzerland). *Arch Kinderheilk* 181(1):32-39, 1970.

8107 A METHOD FOR TEMPORARY GASTROSTOMA. *(E.)* Thomas, C. G., Jr. (U. North Carolina Sch. Med., Chapel Hill) and R. D. Croom, III. *Surg Gynec Obstet* 131(2):292-294, 1970.

8108 CONGENITAL EXTRINSIC OBSTRUCTION OF THE DUODENOJEJUNAL JUNCTION. *(E.)* Soper, R. T. (U. Iowa Coll. Med., Iowa City) and A. C. Selke. *J Pediat Surg* 5(4):437-443, 1970.

8109 DUODENITIS: SIGNIFICANCE AND FREQUENCY. *(E.)* Classen, M. (Dept. Med., U. Erlangen-Nuremberg, Germany), H. Koch and L. Demling. *Bibliothec Gastroent* 9:48-69, 1970.

8110 GASTRIC CANCER: A DECRESCENT MALIGNANCY. *(E.)* Crumb, C. K. (Wayne County Gen. Hosp., Detroit, Mich.), P. F. Willetts, Jr. and H. E. Stephenson. *Surgery* 68(2):277-282, 1970.

8111 RESULTS OF OPERATION FOR DUODENAL ULCER. *(E.)* Price, W. E. (Oklahoma City, Okla.), J. E. Grizzle, R. W. Postlethwait, W. D. Johnson and P. Grabicki. *Surg Gynec Obstet* 131(2):233-244, 1970.

8112 VILLOUS TUMOR OF THE STOMACH. *(E.)* Michaels, M. (Albert Einstein Med. Ctr., Philadelphia, Pa.) and R. Rachman. *J Albert Einstein Med Ctr* 18(2):79-81, 1970.

8113 A METHOD OF TOTAL GASTRECTOMY. *(E.)* Daido, R. (Maizuru Natl. Hosp., Kyoto, Japan). *Abdom Surg* 12(9):162-166, 1970.

8114 A CASE OF GASTRIC TUBERCULOSIS. *(It.)* Berizzi, G. F. (Dept. Surg., U. Pavia, Italy), R. Bragheri and A. Scotti. *Minerva Chir* 25(15):1083-1089, 1970.

8115 LEIOMYOBLASTOMA: AN UNUSUAL TUMOR OF THE STOMACH. *(E.)* Broderick, P. A. (St. Joseph Hosp., Providence, R. I.) and S. R. Allegra. *Rhode Island Med J* 53(7):386-389, 1970.

8116 A VERY RARE TYPE OF DUODENAL DIVERTICULUM. *(Ger.)* Hak-Hagir, A. (1st Surg. U. Clin. Vienna, Austria) and J. Pavlas. *Roentgenblaetter* 23(8):378-381, 1970.

8117 SURVEY OF VAGOTOMY AND PYLOROPLASTY IN INFANTS AND CHILDREN. *(E.)* Johnston, P. W. (Pasadena, Calif.) and W. H. Snyder. *Amer J Surg* 120(2):173-181, 1970.

8118 MYOGENIC TUMORS OF THE STOMACH: GASTROSCOPIC AND PATHOLOGIC OBSERVATIONS. *(E.)* Fagin, R. R. (Dept. Med., U. Chicago, Ill.), J. D. Levinson, J. C. Prolla, S. Kobayashi and H. C. Singer. *Gastroint Endosc* 17(1):30-33, 1970.

8119 PRIMARY TUMORS OF THE STOMACH AFTER SURGERY. *(It.)* Pavlica, P. (Major Hosp. Bologna, Italy) and S. Sartoni Galloni. *Quad Radiol* 35(1):7-22, 1970.

8120 VOLVULUS OF THE STOMACH. *(E.)* Ahsan, I. (Liaquat Med. Coll., Hyderabad, India). *J Roy Coll Surg Edinb* 15(4):232-233, 1970.

8121 LEIOMYOBLASTOMA OF THE STOMACH. *(E.)* McBee, J. W. (Kelsey-Seybold Clin., Houston, Texas) and M. H. Aboumrad. *Gastroint Endosc* 17(1):17-18,46, 1970.

8122 PHLEGMONOUS GASTRITIS MIMICKING GASTRIC NEOPLASM. *(E.)* Bandler, M. (Kingsbrook Jewish Med. Ctr., Brooklyn, N. Y.). *Gastroint Endosc* 17(1):41-44, 1970.

8123 VITAMIN D DEFICIENCY AFTER GASTRECTOMY. *(E.)* Thompson, G. R. (Roy. Postgrad. Med. Sch., London, England). *Sci Basis Med Annual Rev* 260-275, 1970.

8124 GASTROSTOMY IN ACUTE GASTRECTASIA. *(Rus.)* Finik, V. I. (Staritsk Ciy Hosp., Kalinin Region, USSR) and I. I. Davydov. *Vestn Khir* 104(3):114-116, 1970.

8125 MORPHOLOGY OF PERIPHERAL BLOOD UNDER INTRA-ARTERIAL INFUSION OF 5-FLUOROURACIL AND ALKYLATING AGENTS IN GASTRIC CANCER. *(Rus.)* Cherny, V. A.(Res. Inst. Exp. Clin. Oncol., Kiev, USSR). *Vop Oncol* 16(4):61-64, 1970.

8126 COMBINED SURGERY OF EXTRAHEPATIC AND PANCREATIC DUCTS DURING GASTRIC RESECTION. *(Rus.)* Vitebsky, Ya. D. (Kurgan Reg Hosp., USSR). *Klin Khir* (3):18-22, 1970.

8127 MORPHOLOGY OF GASTRIC CARCINOMA RELATED TO PATIENT'S LIFE EXPECTANCY AFTER SURGERY. *(Rus.)* Urban, A. (Inst. Oncology, Krakow, Poland), J. Oszacki and M. Lenczyk. *Arkh Pat* 32(10):71-76, 1970.

8128 CLINICAL AND MORPHOLOGICAL CHARACTERISTICS OF FUNCTIONAL DISORDERS OF THE STOMACH IN YOUNG PATIENTS. *(Rus.)* Lebedev, V. P. (Novosibirsk, USSR). *Ter Arkh* 42(5):31-33, 1970.

8129 INTESTINAL ABSORPTION IN PATIENTS WITH GASTRITIS PRIOR AND AFTER MINERAL WATER CURE AT THE RESORT OF MORSHIN. *(Rus.)* Denisyuk, V. G. (Ivano-Frankovsk Med. Inst., USSR) and R. P. Makos. *Vop Pitan* 29(1):12-15, 1970.

8130 EXOCRINE AND ENDOCRINE FUNCTION OF THE PANCREAS IN PATIENTS WITH DUMPING SYNDROME FOLLOWING GASTRIC RESECTION FOR ULCER. *(Rus.)* Loranskaya, T. I. (Acad. Med. Sci., Moscow, USSR) and I. S. Volkova. *Vrach Delo* (5):144-145, 1970.

o P:Absorp (7866)
o Diagproc (8024) (8025) (8026) (8027) (8033) (8037)
  (8045) (8046)
o D:Esoph (8060) (8072) (8075) (8085)
o D:Stomduo:Peptulc (8135) (8140) (8141)
o D:S.Intest:Malabs (8174)
o D:Pancreas (8229)
o D:Livbil:Gallb (8411)
o D:Gen (8457) (8459)

STOMACH AND DUODENUM

Peptic Ulcers

8131 MUCOSAL SUSCEPTIBILITY IN PEPTIC ULCERATION: A METHOD FOR TESTING. *(E.)* LeVeen, H. H. (St. U. New York Downstate Med. Ctr., Brooklyn), G. Falk, H. O. Douglass, Jr. and L. J. Spingola. *Proc Soc Exp Biol Med* 134(3):793-796, 1970.

In the presence of induced (histamine, 1 mg in beeswax daily) gastric hypersecretion of a magnitude insufficient to produce an ulcer, factors (androgenic nitrogen retaining anabolic agents) which lower mucosal resistance to peptic digestion were investigated. Addition of hydrocortisone to the histamine regimen raised the mortality due to duodenal ulcer perforation from 16 to 59%; 13 of 22 guinea pigs died of this cause in an average of 6 days. Disruption of the stomach wall caused the deaths of 6 histamine and 6 histamine-hydrocortisone treated animals, with lesions involving a ragged linear rupture of a long segment (more than 1/2) of the gastric wall. Addition of an anabolic injectable agent to the regimen had an unfavorable effect on survival (100% died, 53% of perforated duodenal ulcer in an average time of 6.3 days). Of the 60 guinea pigs treated with anabolic agents, there were only 6 deaths due to fundic disruption, whereas 4 of 17 guinea pigs treated with histamine-cortisone without anabolic agents died of this cause.

8132 EFFECTS OF BENZYDAMINE ON EXPERIMENTAL GASTRIC ULCERS PRODUCED BY INDOMETHACIN AND RESERPINE. *(E.)* Burberi, S. (Fac. Pharm., U. Rome, Italy), V. Cioli and D. Piccinelli. *Pharmacol Res Commun* 2(2):91-95, 1970.

The effect of benzydamine (p.o.) on gastric ulcers experimentally induced in rats by indomethacin (12.5 mg/kg s.c.) and reserpine (5 mg/kg i.p.) was studied. Spontaneous lesions occurred in 9.3% of the animals whereas indomethacin caused lesions in 52%; benzydamine (100 mg/kg) reduced this to 26.6% in one study, and spontaneous lesions in 26.6% of the animals and indomethacin-induced lesions in 67% dropped to 29% with benzydamine (50 mg/kg) in a second study. The spontaneous incidence of 7% and the reserpine-induced ulcers (67%) in a third study was lowered to 40% by benzydamine (100 mg/kg). Benzydamine (50-100 mg/kg) possesses no ulcerogenic action in rats when administered alone, but when administered with indomethacin or reserpine has a significant anti-ulcer effect.

8133 ZINC BALANCE IN PATIENTS WITH ULCER DISEASE. *(Rus.)* Parashchak, A. P. (Ivano-Frankovsk Med. Inst., USSR). *Vrach Delo* (4):115-118, 1970.

8134 "GASTROPULGITE", AN ANTIACID GASTRIC COATING: A STUDY BY GASTRIC pH-RADIOMETRY. *(Fr.)* Andre, L. J. (Central Teaching Hosp. A. N. P., Algiers, Algeria) and M. Touhami. *Therapeutique* 46(h.s.):31-35, 1970.

8135 SURGICAL MANAGEMENT OF HEMORRHAGIC GASTRODUODENAL STRESS ULCER. *(Ger.)* Roth, H. (Thurgau Canton Hosp., Munsterlingen, Switzerland). *Schweiz Med Wschr* 100(29):1278-1281, 1970.

8136 GASTRIC STASIS, A CAUSE OF GASTRIC ULCER: QUADRENNIAL REVIEW. *(E.)* Dragstedt, L. R. (Coll. Med., U. Florida, Gainesville) and E. R. Woodward. *Scand J Gastroent* 5(suppl. 6):243-252, 1970.

8137 ACUTE GASTRODUODENAL "STRESS" ULCERATION: BARRIER DISRUPTION OF VARIED PATHOGENESIS. *(E.)* Skillman, J. A. (Beth Israel Hosp., Boston, Mass.) and W. Silen. *Gastroenterology* 59(3):478-482, 1970.

8138 GASTROSCOPIC APPEARANCE OF MULTIPLE GASTRIC ULCERS ASSOCIATED WITH LYMPHATIC LEUKEMIA. *(E.)* Bynum, T. E. (U. Oklahoma Med. Ctr., Oklahoma City). *Gastroint Endosc* 17(1):38-40, 1970.

8139 PERFORATED PEPTIC ULCER IN AN ISOLATED ISLAND COMMUNITY. *(E.)* McKay, R. T. (Colonial War Mem. Hosp., Suva, Fiji). *J Roy Coll Surg Edinb* 15(4):228-231, 1970.

8140 ANASTOMOTIC ULCERS. *(Fr.)* Moreau, J. (Hosp. Bichat, Paris, France) and Y. Le Quintrec. *Rev Prat* 20(16):2635-2659, 1970.

8141 RECURRENT ULCER AFTER VAGOTOMY AND PYLOROPLASTY: THE X-RAY APPEARANCES AND THEIR VALUE IN DIAGNOSIS. *(E.)* Williams, J. A. (Gen. Hosp., Birmingham, England) and D. K. M. Toye. *Gut* 11(5):405-408, 1970.

- o P:Secr:Stom (7863) (7876)
- o Diagproc (8009) (8043)
- o D:Esoph (8075)
- o D:Stomduo (8093) (8096) (8111) (8117) (8130)

8142 GAS IN THE PORTAL VEIN OF ADULTS WITH NECROTIZING ENTEROPATHY. *(E.)* Berne, T. V. (U. Southern California Sch. Med., Los Angeles), H. I. Meyers and A. J. Donovan. *Amer J Surg* 120(2): 203-209, 1970.

The radiological detection of gas in the portal vein of 12 adults with necrotizing enteropathy which principally involved the small intestine was reported. Demonstrable mesenteric vascular occlusion was not present in any patient. Three patients survived, 2 with enteric necrosis which was not panmural and one with panmural necrosis. In the majority of these patients, the necrotizing enteropathy was probably consequent to impaired splanchnic blood flow with enteric ischemia. A primary necrotizing enteropathy could not be excluded in a few of these patients. Usually gas in the hepatic portal venous system is indicative of intestinal necrosis and demands prompt operative treatment.

8143 A CASE OF PEUTZ-JEGHERS SYNDROME. *(Fr.)* Huchet, R. (Vannes, France). *Bull Mem Soc Chir Paris* 60(1):53-60, 1970.

8144 PIGGY-BACK ADENOPAPILLOMAS OVER LIPOMATOSIS OF THE ILEOCECAL VALVE. *(E.)* Knechtges, T. C. (Wayne St. U. Sch. Med., Detroit, Mich.) and C. Carrasquilla. *Dis Colon Rectum* 13(3):255-258, 1970.

8145 BENIGN LYMPHOID HYPERPLASIA OF THE TERMINAL ILEUM. *(E.)* Charlesworth, D. (Manchester Roy. Infirm., England), H. Fox and A. R. Mainwaring. *Amer J Gastroent* 53(6):579-584, 1970.

8146 MULTIPLE JEJUNAL DIVERTICULA WITH VOLVULUS. *(E.)* Ghosh, D. K. (Med. Coll. Hosp., Calcutta) and A. K. Dattagupta. *J Indian Med Ass* 54(7):329-330, 1970.

8147 SURGICAL REPAIR OF EXTRAMURAL SYNAPTIC JUNCTIONS OF THE SMALL INTESTINE DURING ITS TRANSPLANTATION. *(Rus.)* Maximenkova, A. N. (Acad. Med. Sci., Moscow, USSR) and V. P. Kulik. *Klin Khir* (3):4-10, 1970.

8148 A CASE OF INTESTINAL OCCLUSION THROUGH A LEFT SIDE PARADUODENAL HERNIA. *(Fr.)* Gillet, M. (Civ. Hosp., Strasbourg, France), D. Jaeck and J. Doremieux. *Chirurgie* 96(6):431-435, 1970.

8149 SARCOMA AND CARCINOMA OF THE SMALL INTESTINE. *(Ger.)* Theisinger, W. (Tech. Coll. Munich, Germany) and H. Scherer. *Internist Prax* 10(2):237-244, 1970.

8150 SEVEN CASES OF GALLSTONE ILEUS. *(Rus.)* Gredjev, A. F. (no affil), V. V. Minin, V. I. Yaropolov, N. S. Anishin, I. I. Zinovyev and P. P. Konoplia. *Klin Khir* (3):10-13, 1970.

8151 ELASTIC VASCULAR SCLEROSIS OF MESENTERIC BLOOD VESSELS IN ARGENTAFFIN CARCINOMA. *(E.)* Anthony, P. P. (Makerere U. Coll., Kampala, Uganda) and R. A. B. Drury. *J Clin Path* 23(2):110-118, 1970.

8152 MONITORING THE SURGICAL PATIENT WITH SEPTIC SHOCK. *(E.)* Berliner, S. D. (Long Island Jewish Hosp., New Hyde Park, N. Y.), L. C. Burson and P. E. Lear. *Amer J Gastroent* 53(6):576-578, 1970.

8153 PEUTZ-JEGHERS SYNDROME. *(Ger.)* Nitschke, M. (Dist. Hosp. Cottbus, Germany), W. Kettner and J. Horntrich. *Deutsch Gesundh* 25(32):1517-1522, 1970.

8154 INTESTINAL OBSTRUCTION FROM IMPACTED ANTACID TABLETS. *(E.)* Potyk, D. (Southern California Permanente Med. Group, Panorama City). *New Eng J Med* 283(3):134-135, 1970.

8155 ULTRASTRUCTURAL CHARACTERISTICS OF THE SMALL INTESTINAL MUCOSA IN PATIENTS WITH CHRONIC ENTEROCOLITIS. *(Rus.)* Zufarov, K. A. (Tashkent Med. Inst., Tashkent, USSR), P. I. Tashkhodzhaev, E. K. Shishova and V. V. Vaisbrot. *Arkh Pat* 32(1):45-52, 1970.

- P:Morph (7808)
- D:Stomduo (8108)
- D:S.Intest:Regent (8163)
- D:S.Intest:Malabs (8165)
- D:Gen (8456) (8464) (8466)
- D:Gen:Parasit (8489)

Regional Enteritis

156 MICRODIVERTICULA AND SUBMUCOSAL EPI-
THELIAL ELEMENTS IN ULCERATIVE AND
RANULOMATOUS DISEASES OF THE ILEUM AND COLON.
E.) Clark, R. M. (Oshawa Gen. Hosp., Ontario,
anada). *Canad Med Ass J* 103(1):24-28, 1970.

ections of the segments of bowel received from
7 cases of regional enteritis and 16 cases of
lcerative colitis were re-examined for the
resence of microdiverticula and submucosal epi-
nelial elements. These structures were present
n 5 cases of regional enteritis and in 14 of ul-
erative colitis. A granulomatous type of inflamma-
ory response was found in the bowel and lymph nodes
n 14 of the 17 cases of regional enteritis, and in
one of the cases diagnosed as ulcerative colitis.
n spite of this, difficulty was experienced in
lacing some cases in one or the other diagnostic
ategory suggesting that the two conditions may not
e etiologically discrete, and that both may be, in
act, related to the presence of microdiverticula.
n addition, it may be that colitis cystica pro-
unda is a result of microdiverticulosis in which
ne submucosal glandular structures attain unusually
arge proportions.

157 AGENT TRANSMISSIBLE FROM CROHN'S DISEASE
TISSUE. *(E.)* Mitchell, D.N. (Brompton
osp., London, England) and R.J.W. Rees. *Lancet*
(7665):168-171, 1970.

n attempt to transmit Crohn's disease by inocula-
ion of homogenates from Crohn gut or lymph-node
issue and from non-Crohn lymph-node into the foot-
ads of normal and immunologically deficient mice
as reported. A significant proportion of the
ootpads of mice receiving homogenates prepared
rom Crohn's disease tissues showed the histologi-
al characteristics typical of the focal granulomas
f Crohn's disease in man 6-24 months after inocu-
ation. Conversely, the early inflammatory reactions
een in a small proportion of the footpads of mice
noculated with non-Crohn's homogenates could no
onger be seen in the late examination. Positive
veim tests were found in 30% of the mice given
omogenates from Crohn's disease tissues and all
ere associated with granulomas in the footpads,
ut all Kveim tests were negative in mice given
on-Crohn's homogenates.

158 PERITONITIS INDUCED BY ILEAL PERFORATION
DUE TO INITIAL STAGE OF CROHN'S DISEASE.
Fr.) Paris, J. C. (no affil), J. Baillet, B.
rognon and J. P. Capron. *Lille Med* 15(3):495-501,
970.

8159 ULTRAMICROSCOPIC STUDY OF INTRACELLULAR DIGESTION IN EPITHELIOID AND GIANT CELLS IN CROHN'S DISEASE. *(Fr.)* Albot, G. (no affil), M. Parturier-Albot, J. P. Camilleri and J. Diebold. *Bull Acad Natl Med* 154(15-16):322-326, 1970.

8160 PATHOLOGY OF CROHN'S DISEASE. *(E.)* Morson, B. C. (St. Mark's Hosp., London, England). *Bibliothec Gastroent* 9:90-93, 1970.

8161 CROHN'S DISEASE. *(E.)* Failes, D. (Sydney, Australia). *Med J Aust* 57(6):265-268, 1970.

8162 SENSITIVITY TO ATYPICAL MYCOBACTERIAL ANTIGENS IN PATIENTS WITH CROHN'S DISEASE. *(E.)* Watson, D. W. (U. Michigan Med. Ctr., Ann Arbor) and J. Morganroth. *Amer J Dig Dis* 15(7):653-657, 1970.

8163 ADENOCARCINOMA ARISING IN AN EXCLUDED LOOP OF ILEUM. *(E.)* Schuman, B. M. (Henry Ford Hosp., Detroit, Mich.). *New Eng J Med* 283(3):136-137, 1970.

8164 CROHN'S DISEASE (REGIONAL ENTERITIS): A LOOK AT THE LAST FOUR YEARS. *(E.)* Thayer, W. R. (Rhode Island Hosp., Providence). *Scand J Gastroent* 5(suppl. 6):165-181, 1970.

o D:L.Intest (8180)
o D:l.Intest:Grancol (8219) (8220) (8221) (8222) (8224) (8225)

SMALL INTESTINE

Malabsorption

8165 IMMUNOCHEMICAL STUDIES OF THE SERUM, INTESTINAL SECRETIONS AND INTESTINAL MUCOSA IN PATIENTS WITH ADULT CELIAC DISEASE AND OTHER FORMS OF THE CELIAC SYNDROME. *(E.)* Douglas, A. P. (Massachusetts Gen. Hosp., Boston), P. A. Crabbe and J. R. Hobbs. *Gastroenterology* 59(3):414-425, 1970.

The densities of immunoglobulin-containing plasma cells in the intestinal tract in relation to the concentrations of immunoglobulins in serum, intestinal secretions, and bone marrow were investigated in a group of patients with adult celiac disease (treated and untreated) and compared with values observed in normal subjects and in patients with abnormalities of the small intestinal mucosa due to tropical sprue, Whipple's disease, and dermatitis herpetiformis and in subjects with normal intestinal mucosa but with low serum levels of either IgA or IgM. In the majority of jejunal mucosal specimens plasma cells of the IgA class were the predominant variety and IgA was the predominant immunoglobulin found in jejunal juice and saliva. Celiac patients differed from the norm, however, in having increased values for the population densities of the IgM plasma cells in jejunal mucosa (normal 50, celiac 105-244 mg/ml), even those with low levels of serum IgM; this was paralleled by an increase in the concentration of IgM in jejunal juice. However, salivary IgM concentration was normal in these patients and the proportion of IgM cells was normal in the rectal mucosa and reduced in the bone marrow. In several celiac patients (who did not have IgA deficiency) the predominant immunocyte in the jejunal mucosa was of the IgM class. The population densities of IgM plasma cells returned toward normal with prolonged gluten restriction. Increased density of IgM immunocytes was not found in patients with tropical sprue, dermatitis herpetiformis or Whipple's disease; in subjects with low serum IgA or IgM, the jejunal mucosa was rich in IgM or IgA, resp.

8166 INTESTINAL ABSORPTION OF TWO DIPEPTIDES IN HARTNUP DISEASE. *(E.)* Asatoor, A. M. (Westminster Med. Sch., London, England), B. Cheng, K. D. G. Edwards, A. F. Lant, D. M. Matthews, M. D. Milne, F. Navab and A. J. Richards. *Gut* 11(5):380-387, 1970.

Oral tolerance tests of 2 dipeptides and of their constituent amino acids were compared in normal subjects and in a case of Hartnup disease. The rate of absorption of phenylalanine from phenylalanylphenylalanine and of tryptophan from glycyl-tryptophan was slower than after the equivalent amount of the free amino acids in the normal subjects, whereas absorption of the two essential amino acids (tryptophan and phenylalanine) in the patient was almost zero after administration in the free form, but was much greater after the dipeptide (the dipeptides themselves were not detected in the serum of the normal subjects or of the patient). Absorption of tryptophan and phenylalanine as the free acids was greater than from the 2 dipeptides in the rat small intestine, and peptidase activity was higher in the intestinal mucosal cells than in the lumen. Normal subjects apparently absorb essential amino acids by a dual mechanism of mucosal uptake of free amino acids and oligopeptides, whereas nutrition in Hartnup disease is largely dependent on uptake of oligopeptides containing the amino acids affected by the intestinal transport defect of the disease.

8167 STUDIES ON INFANT DIARRHEA: IV. SUGAR TRANSIT AND ABSORPTION IN SMALL INTESTINE AFTER A FEEDING. *(E.)* Rodriguez-de-Curet, H. (U. Puerto Rico Sch. Med., San Juan), C. Lugo-de-Rivera and R. Torres-Pinedo. *Gastroenterology* 59(3):396-403, 1970.

Sugar transport and absorption were studied in 22 infants with acute diarrhea by intubation and collection of intestinal contents after ingestion of a mixture containing either 0.4 M glucose, 0.4 M fructose, 0.2 M lactose, or 0.2 M maltose. Delay in gastric emptying, increase in transit time in the intestinal segment studied, significant malabsorption of the four sugars with minimal impairment for glucose and maximal for lactose absorption, and a definite impairment of lactose hydrolysis were observed. The finding of malabsorption for sugars in the presence of increased transit time suggests that alterations of transport processes and/or of the permeability characteristics of the small intestinal mucosa are probably the most important factors in the pathogenesis of acute diarrhea in infants. The finding of better absorption for glucose as compared with fructose suggests that permeability is altered to a greater degree than are the transport processes.

8168 FAT AND GLUCOSE MALABSORPTION AFTER HYPERTONIC MANNITOL. *(E.)* Nasrallah, S. M. (Johns Hopkins Sch. Med., Baltimore, Md.), S. Margolis and F. L. Iber. *Johns Hopkins Med J* 127 (1):38-45, 1970.

The effects of perfusion with hypertonic mannitol (10%) on the absorption of a ^{14}C-labeled triolein emulsion (2 μC in a 2 ml solution instilled into the intestine over a 5 min period) and of glucose (5 mg in a 2 ml solution) were studied *in vivo* in rat isolated jejunal loops. An average of 82% of the administered neutral fat was absorbed in the control (saline perfusion) rats as opposed to only 48% in the mannitol-perfused rats and 33% of the administered triolein was recovered as di- and triglycerides after mannitol perfusion (indicating an impairment in lipolysis) compared to 8% in control rats. There was a significantly greater amount of unabsorbed fatty acid and monoglyceride in the mannitol-treated rats. An average of 89% of the administered glucose dose was absorbed in saline-perfused rats and only 32% in hypertonic mannitol-perfused rats. Reduction in triolein and glucose absorption associated with hypertonic mannitol was accompanied by injury to intestinal tissue characterized by blunt short villi, epithelial cells lacking polarity, and necrosis at the tips of the villi. When hypertonic mannitol-treated rats were studied 7 days after cessation of hypertonic manitol treatment both intestinal absorptive capacity and the histolo-

ogical appearance of intestinal tissue returned to
ormal.

169 EXOCRINE PANCREAS INSUFFICIENCY SECONDARY TO GLUTENENTEROPATHY. *(E.)* Bustos Fernanez, . (Hosp. Rawson, Buenos Aires, Argentina), A. De aula, R. Prizont, O. M. Tiscornia, J. Braguinsky, . Carreras and D. Hojman. *Amer J Gastroent* 3(6):564-569, 1970.

170 STUDIES ON INTESTINAL ABSORPTION OF AMINO ACIDS AND A DIPEPTIDE IN A CASE OF HARTNUP SEASE. *(E.)* Navab, F. (Westminster Hosp. Med. Sch., ondon, England) and A. M. Asatoor. *Gut* (5):373-379, 1970.

71 INTESTINAL PROTEIN ABSORPTION IN ENTEROCOLITIS. *(Rus.)* Kharat'yan, A. M. (Tashent Med. Inst., Tashkent, USSR), and F. Mavlanov. *d Zh Uzbek* (4):43-48, 1970.

72 HYPOCALCEMIA THROUGH DIGESTIVE LOSSES. *(Fr.)* Simon, J. (Albert Chenevier Hosp., eteil, France) and J. P. Bader. *Rev Prat* (17):2895-2904, 1970.

73 ISOLATED MESENTERIC LIPODYSTROPHY. *(E.)* Jhung, J. W. (St. Vincent's Hosp., rcester, Mass.) and F. F. Ferguson. *J Maine Med s* 61(9):177-178, 1970.

74 BLOOD CALCIUM DEFICIENCY, DUE TO INTESTINAL MALABSORPTION, AND VITAMIN B_{12} REABSORPTION. *er.)* Huberhus, H. (Mannheim Clin. U. Heidelberg, rmany). *Med Klin* 65(21):1031-1034, 1970.

75 PRIMARY LACTASE DEFICIENCY: GENETIC OR ACQUIRED? *(E.)* Bolin, T. D. (Prince enry Hosp., Sydney, Australia) and A. E. Davis. *er J Dig Dis* 15(7):679-692, 1970.

8176 PATHOGENESIS OF CELIAC DISEASE IN ADULTS: COMPATIBILITY OF IMMUNOLOGIC AND ENZYME-DEFECT THEORIES. *(E.)* Reed, L. S. (Riverdale, N. Y.). *New York J Med* 70(16):2095-2102, 1970.

8177 PHARMACOKINETIC INVESTIGATIONS IN DISACCHARIDE INTOLERANCE. *(Ger.)* Rind, H. (St. Hosp. Fulda, Germany). *Z Kinderheilk* 108(3):197-200, 1970.

8178 EFFECT OF DIET ON MALABSORPTION AFTER SMALL BOWEL BY-PASS. *(E.)* Mulcare, D. B. (VA Ctr. U. California, Los Angeles), H. F. Dennin and E. J. Drenick. *J Amer Diet Ass* 57(4):331-334, 1970.

8179 DRUG PRODUCTION OF INTESTINAL MALABSORPTION. *(E.)* Faloon, W. W. (Sansum Clin. Res. Found., Santa Barbara, Calif.). *New York J Med* 70(17):2189-2192, 1970.

o P:Absorp (7849)
o Diagproc (8003) (8052)
o D:Livbil:Gallb (8412)
o D:Gen (8465)

LARGE INTESTINE

180 ACUTE REGIONAL COLITIS - ISCHEMIC COLITIS? *(Ger.)* Egger, G. (Central Middlesex Hosp., ondon, England) and T. D. Kellock. *Scweiz Med Wschr* 0(29):1264-1272, 1970.

e symptomatology of non-necrotizing ischemic colis has been described in a retrospective study of cases of regional colitis (4 men, 12 women with mean age of 60 yr). The specific history was sually between 6 hr and 30 days before hospital admission when the following symptoms were recorded: abdominal pain (all patients), anal bleeding (13), diarrhea (8), nausea and vomiting (6), palpable tumor (2), and relapse of a previous similar attack (2). Segmental colonic lesions were demonstrated roentgenologically or by surgery in all cases. The course of the disease permitted conservative treatment (fluids, electrolytes, diet) in 6 patients, exploratory laparotomy in 6 patients with an ileostomy in 1 of them and a resection 5 yr later. Of the remaining 4 patients, 1 died of oliguria and uremia after a colostomy, 1 had a unilateral resection, and in the remaining 2 patients, segment resections and subsequent re-anastomoses were performed following ileostomy or colostomy. A large number of cases of non-necrotizing ischemic colitis can be diagnosed on the basis of characteristic clinical manifestations, in combination with contrast enemas.

8181 CARCINOIDS OF THE LARGE INTESTINE. *(E.)* Rosato, F. E. (Harrison Dept. Surg. Res., U. Pennsylvania, Philadelphia), J. R. Anderson and P. Andrus. *Dis Colon Rectum* 13(3):211-214, 1970.

8182 THE PLACE OF CECOSTOMY IN THE RELIEF OF OBSTRUCTIVE CARCINOMA OF THE COLON. *(E.)* Balsley, I. (Commun. Hosp., Copenhagen, Denmark), H. E. Jensen and J. Nielsen. *Dis Colon Rectum* 13(3):207-210, 1970.

8183 ENDORECTAL ("PULL-THROUGH") RESECTION FOR TUMORS OF THE RECTUM. *(E.)* Wenckert, A. (Allmanna Hosp., U. Lund, Malmo, Sweden). *Acta Chir Scand* 136(4):337-339, 1970.

8184 CANCER OF THE ANUS AND ANAL CANAL. *(E.)* Moller, C. (U. Hosp. Helsinki, Finland) and E. Saksela. *Acta Chir Scand* 136(4):340-348, 1970.

8185 SUBCUTANEOUS SURGICAL EMPHYSEMA AND ABSCESS IN COLONIC CARCINOMA. *(E.)* Das, N. P. (Singapore). *Brit J Clin Pract* 24(7):277-283, 1970.

8186 MASSIVE PROLAPSE OF THE RECTUM. *(Por.)* Fraga, F. (St. Teresa Hosp., Petropolis, Brazil). *Folha Med* 60(5):493-498, 1970.

8187 JUVENILE POLYPS OF THE COLON AND THEIR RELATIONSHIP TO ALLERGY. *(E.)* Alexander, R. H. (U. Washington Sch. Med., Seattle), J. B. Beckwith, A. Morgan and A. H. Bill. *Amer J Surg* 120(2):222-225, 1970.

8188 FURTHER CRITERIA FOR ANASTOMOSIS IN DIVERTICULITIS OF THE SIGMOID COLON. *(E.)* Garnjobst, W. (Providence Hosp., Portland, Ore.) and C. Hardwick. *Amer J Surg* 120(2):264-269, 1970.

8189 "JUVENILE" RETENTION POLYPS OF THE COLON AND RECTUM. *(E.)* Silverberg, S. G. (Med. Coll. Virginia, Richmond). *Amer J Dig Dis* 15(7):617-625, 1970.

8190 PRIMARY LINITIS PLASTICA CARCINOMA OF THE COLON. *(E.)* Jacobi, M. A. (Holy Family Hosp., Manitowoc, Wisc.). *Wisconsin Med J* 60(9):211-213, 1970.

8191 GIANT APPENDICOLITH. *(E.)* Seshanarayana, K. N. (U. Virginia Sch. Med., Charlottesville) and T. E. Keats. *Virginia Med Month* 97(9):544-545, 1970.

8192 AGANGLIONIC MEGACOLON IN INFANCY. *(E.)* Leenders, E. (U. Pittsburgh Sch. Med., Pa.), W. K. Sieber, B. R. Girdany and W. B. Kiesewetter. *Surg Gyned Obstet* 131(3):424-430, 1970.

8193 VOLVULUS OF THE CECUM. *(E.)* Collie, R. J. (Lander, Wyo.). *Rocky Mountain Med J* 67(7):46-50, 1970.

8194 CECAL PERFORATION DUE TO ADYNAMIC ILEUS. *(E.)* Carrasquilla, C. (Wayne St. U. Sch. Med., Detroit, Mich.), A. Arbulu, S. Fromm and C. Lucas. *Dis Colon Rectum* 13(3):252-254, 1970.

8195 IMPERFORATE ANUS IN THE ADULT. *(E.)* Toyama, W. M. (Marshfield Clin., Wisc.). *Dis Colon Rectum* 13(3):247-251, 1970.

8196 CHARACTERISTICS OF VARIANTS OF COLORECTAL CARCINOMA THAT DO NOT METASTASIZE TO LYMPH NODES. *(E.)* Spratt, J. S., Jr. (Ellis Fischel St. Cancer Hosp., Columbia, Mo.), F. R. Watson and J. L. Pratt. *Dis Colon Rectum* 13(3):243-246, 1970.

8197 EMERGENCY SURGICAL OPERATIONS FOR DIVERTICULAR DISEASES. *(E.)* Ponka, J. L. (Henry Ford Hosp., Detroit, Mich.). *Dis Colon Rectum* 13(3):235-242, 1970.

8198 DIVERTICULITIS OF THE COLON IN A COMMUNITY HOSPITAL. *(E.)* Kratzer, G. L. (Allentown, Pa.) and J. Hernandez. *Dis Colon Rectum* 13(3):231-234, 1970.

8199 PROGNOSTIC SIGNIFICANCE OF ABDOMINAL WALL INVOLVEMENT IN CARCINOMA OF CECUM. *(E.)* Whiteley, H. W., Jr. (Mem. Hosp., New York, N. Y.) and A. El-Domeiri. *Cancer* 26(3):552-556, 1970.

8200 CLINICOPATHOLOGICAL STUDY OF A CASE OF RECTOPOLYPOSIS AND MULTIPLE MESENTERIC FIBROMA. *(Fr.)* Camilleri, J. P. (Paris, France), J. Diebold, M. Reynes and C. Olivier. *Ann Anat Path* 15(2):273-280, 1970.

8201 PERFORATION OF THE COLON DUE TO CARCINOMA. *(E.)* Naylor, H. G. (Roy. Free Hosp., London, England) and S. A. Jobling. *Brit J Clin Pract* 24(8):339-342, 1970.

8202 CARCINOMA IN COLONIC AND RECTAL POLYPS. *(E.)* Veidenheimer, M. C. (Lahey Clin. Found., Boston, Mass.), J. M. Connolly and M. A. Legg. *Dis Colon Rectum* 13(3):194-200, 1970.

8203 COMBINED ATAPULGITE-GUARGUM TREATMENT OF COLON DISEASES. *(Fr.)* Felix, H. (no affil). *Therapeutique* 46(h.s.):23-26, 1970.

8204 DUHAMEL'S PROCEDURE IN SURGERY OF RECTO-SIGMOID DIVERTICULITIS CANCER: REPORT ON 5 CASES. *(Fr.)* Stoll (no affil). *Chirurgie* 96(9):621-626, 1970.

8205 TWO HERNIAS, IRREDUCIBLE BUT INNOCENT. *(E.)* Southcott, R. D. C. (Hampstead Gen. Hosp., London, England). *Brit J Clin Pract* 24(7):299-300, 1970.

8206 ISCHEMIC COLITIS: CLINICAL ASPECTS. *(E.)* Marston, A. (Middlesex Hosp., London, England). *Bibliothec Gastroent* 9:137-142, 1970.

8207 PATHOLOGY OF ISCHEMIC COLITIS. *(E.)* Morson, B. C. (St. Mark's Hosp., London, England). *Bibliothec Gastroent* 9:134-136, 1970.

8208 *PSUEDOMYXOMA PERITONEI* CASE REPORT INCLUDING *IN VITRO* MUCOLYSIS. *(E.)* Rosato, F. E. (Hosp. U. Pennsylvania, Philadelphia) and M. H. Seltzer. *Surgery* 68(2):301-303, 1970.

8209 INTRALYMPHATIC 5-FLUOROURACIL AND RADIOACTIVE GOLD AS AN ADJUVANT TO SURGICAL OPERATION FOR COLORECTAL CARCINOMA. *(E.)* Adams, J. T. (U. Rochester Med. Ctr., N. Y.), S. I. Schwartz, P. Rubin and C. G. Roe. *Dis Colon Rectum* 13(3):201-206, 1970.

8210 SEGMENTAL COLITIS: CONCEPT AND CLASSIFICATION. *(E.)* Maratka, Z. (Bulovka Hosp., Prague, Czechoslovakia) and J. Kudrmann. *Bibliothec Gastroent* 9:73-83, 1970.

o P:Morph (7808)
o D:S.Intest (8144) (8155)
o D:S.Intest:Malabs (8171)
o D:Pancreas (8231)
o D:Livbil (8299)
o D:Livbil:Gallb (8411) (8412)
o D:Gen (8450) (8463)
o D:Gen:Parasit (8487)

LARGE INTESTINE

Ulcerative Colitis

8211 ULCERATIVE COLITIS. *(Ger.)* Widmaier, F. (Med. Clin. Stuttgart, Germany) and K. Heinkel. *Z Gastroent* 8(4):208-216, 1970.

Ninety-three patients (51 men, 42 women) with ulcerative colitis were treated and observed over a period of 12 years. The disease manifested itself in 32 patients at age 21-30; in 65 patients before age 40 and in 3 patients after age 50. The diagnosis was confirmed by radiology, by endoscopy, with or without histological proof of rectal biopsy material, and by radiology and endoscopy combined, with or without histology. Twelve patients were operated on after the diagnosis had been confirmed macroscopically and microscopically. The most frequent forms of localization were proctitis and colitis (left) with involvement of the rectum, sigmoid- and descending colon. Of 68 complications, hemorrhoids with typical proctoscopic findings were in the foreground (47%), and almost equally frequent were anal eczema, anal fissure and anal fistula (7% each); anal prolapse and periproctitic abscesses occurred rarely. Simultaneously occurring diseases of other organs were present in 71 patients (77%). Five of the 93 patients died (2 of the deceased were from the operated group of 12). The occurrence of relapse during conservative therapy was 40-47%/yr during an observation period of 10 years, while in the operated group 1 relapse/yr was observed during the first 4 post-operative years.

8212 MICROBIAL FLORA OF FECES AND VARIOUS SEGMENTS OF LARGE INTESTINE AND TERMINAL ILEUM IN PATIENTS WITH ULCERATIVE COLITIS. *(Rus.)* Levitan, M. Kh. (Sci. Res. Inst. Proctol., Moscow, USSR) and O. P. Marko. *Ter Arkh* 42(5):40-42, 1970.

8213 GASTROJEJUNOCOLIC FISTULA IN AN INFANT: A PREVIOUSLY UNRECORDED ETIOLOGY AND REFLECTIONS ON MANAGEMENT. *(E.)* Firor, H. V. (Red Cross War Mem. Child. Hosp., Cape Town, Union of South Africa). *J Pediat Surg* 5(4):450-453, 1970.

8214 ULCERATIVE COLITIS: MOTION DISORDERS. *(Ger.)* Vitulova, V. (2nd Med. U. Clin. Brno, Czechoslovakia) and J. Polcak. *Z Gastroent* 8(4):217-222, 1970.

8215 ULCERATIVE COLITIS: A CONTEMPORARY OVERVIEW. *(E.)* Hornsby, L. G. (no affil). *Dis Nerv Syst* 31(5):338-343, 1970.

8216 DISCORDANCE FOR ULCERATIVE COLITIS IN IDENTICAL TWINS CONCORDANT FOR CHOLESTATIC LIVER DISEASE: REPORT OF TWO CASES. *(E.)* Gregg, J. A. (Mayo Clin., Rochester, Minn.) and A. H. Baggenstoss. *Amer J Dig Dis* 15(7):667-671, 1970.

8217 THE TREATMENT OF ULCERATIVE COLITIS IN CHILDHOOD. *(Ger.)* Schafer, K. H. (U. Child. Clin. Hamburg, Germany) and F. Blaker. *Monatsschr Kinderheilk* 118(8):511-515, 1970.

8218 ULCERATIVE COLITIS 1970: RECENT DEVELOPMENTS AND QUADRENNIAL REVIEW. *(E.)* Kirsner, J. B. (Dept. Med., U. Chicago, Ill.). *Scand J Gastroent* 5(suppl. 6):63-91, 1970.

o Diagproc (8011) (8048)
o D:S.Intest:Regent (8156)
o D:L.Intest (8210)
o D:L.Intest:Grancol (8221)
o D:Gen (8459)

LARGE INTESTINE

Granulomatous Colitis

8219 ROENTGENOLOGY OF SEGMENTAL COLITIS. *(E.)* Capek, V. (Bulovka Hosp., Prague, Czechoslovakia) and Z. Maratka. *Bibliothec Gastroent* 9:106-116, 1970.

8220 QUESTIONABLE AND CONTROVERSIAL CASES OF REGIONAL COLITIS. *(E.)* Maratka, Z. (Bulovka Hosp., Prague, Czechoslovakia) and J. Kudrmann. *Bibliothec Gastroent* 9:117-131, 1970.

8221 THE CLINICAL DIFFERENTIATION OF TRANSMURAL (REGIONAL) COLITIS FROM CHRONIC ULCERATIVE COLITIS. *(E.)* Farmer, R. G. (Cleveland Clin. Found., Ohio), W. A. Hawk and R. B. Turnbull, Jr. *Bibliothec Gastroent* 9:94-103, 1970.

8222 THE SURGICAL MANAGEMENT OF CROHN'S DISEASE AFFECTING THE LARGE INTESTINE. *(E.)* Todd, I. P. (St. Mark's Hosp., London, England). *Bibliothec Gastroent* 9:145-147, 1970.

8223 SEGMENTAL (GRANULOMATOUS) COLITIS: A HISTORICAL SURVEY. *(E.)* Crohn, B. (New York, N. Y.). *Bibliothec Gastroent* 9:85-89, 1970.

8224 MEDICAL TREATMENT OF CROHN'S DISEASE OF THE COLON. *(E.)* Jones, F. A. (Central Middlesex Hosp., London, England). *Bibliothec Gastroent* 9:143-144, 1970.

8225 CROHN'S DISEASE OF THE RECTUM AND ANUS. *(E.)* Todd, I. P. (St. Mark's Hosp., London, England). *Bibliothec Gastroent* 9:132-133, 1970.

o D:S.Intest:Regent (8156) (8160)
o D:L.Intest (8210)

8226 ISLET CELL TUMORS OF THE PANCREAS WITH PORTAL VARICES AND GASTROINTESTINAL HEMORRHAGE. *(E.)* Maclean, N. (Western Gen. Hosp., Edinburgh, Scotland), C. W. A. Falconer, I. E. W. Gilmour and J. N. Webb. *J Roy Coll Surg Edinb* 15(4):206-212, 1970.

Three cases of islet cell tumors were described as a syndrome of gastrointestinal hemorrhage and portal varices. In each case the tumor in the pancreas was at or in the hilum of the spleen and large tortuous veins were present in the upper abdomen. The recurrent gastrointestinal hemorrhage was not due to chronic peptic ulceration, although in 2 of the cases ingestion of aspirin may have been an additional factor in causing erosion of the mucosa. Increased venous flow and obstruction of the veins by the tumor were partially responsible for the venous dilatation, but the presence of a vaso-active agent may also contribute to these effects.

8227 PANCREATIC PATHOLOGY, CHEMICALLY DEFINED LIQUID DIETS AND BACTERIAL FLORA IN THE RAT. *(E.)* Geever, E. F. (Albert Einstein Coll. Med., Bronx, N. Y.), E. Seifter and S. M. Levenson. *Brit J Exp Path* 41(4):341-347, 1970.

A completely defined liquid diet fed to germfree and conventional rats from weanling to adult life resulted in the development of pancreatic lesions. In the germfree animals these lesions were reversible and disappeared in the majority of this group after 5-8½ months. The lesions were encountered after ingestion of the diet for 1 month and consisted of acinar atrophy with fibrosis which was largely replaced by stromal fat after 3½ months in the more vulnerable conventional rats. From 4 months of diet ingestion onward unusual focal metaplasia was observed in the pancreas of conventional animals. The metaplastic cells resembled hepatic or oxyphilic (oncocytic) epithelium and were believed to arise in the islets but the possiblity of acinar or ductal origin could not be eliminated. The pancreatic pathology of this study seemed to be related to the presence of bacterial flora since conventional animals were more susceptible.

8228 CYSTOADENOMA OF HEAD OF PANCREAS. *(Fr.)* Debelut, J. (Fac. Med. Poitiers, France), J. M. Payard and J. Payard. *Chirurgie* 96(7):506-513, 1970.

8229 CLOSED TRAUMA OF DUODENUM AND PANCREAS. *(Fr.)* Picard-Leroy, G. (Hosp. Ctr., Metz, France). *Chirurgie* 96(5):369-371, 1970.

8230 FIBROBLASTIC SARCOMA OF THE PANCREAS. *(Fr.)* Salembier, M. Y. (no affil) and M. Houcke. *Lille Med* 15(4):674-675, 1970.

8231 FALSE PANCREATIC CYST WITH INVOLVEMENT OF THE COLON. *(Fr.)* Despruniee (Libreville Hosp., Gabon), Graviou and Meymandi. *Chirurgie* 96(9):615-617, 1970.

8232 SURGICAL TREATMENT OF PANCREATIC TRAUMA. *(E.)* Sheldon, G. F. (San Francisco Gen. Hosp., Calif.), L. H. Cohn and F. W. Blaisdell. *J Trauma* 10(9):795-800, 1970.

8233 PSUEDOCYST OF THE PANCREAS. *(It.)* Colombo, P. (Dept. Surg., U. Pavia, Italy), A. De Medici, P. Borri and L. Bonandrini. *Minerva Chir* 25(10):725-757, 1970.

8234 IMPLANTATION AFTER OPERATIONS ON THE PANCREAS. *(E.)* Smith, A. N. (Western Gen. Hosp., Edinburgh, Scotland). *J Roy Coll Surg Edinb* 15(4):198-200, 1970.

8235 THE CLINICAL SIGNIFICANCE OF THE ABERRANT PANCREAS. *(It.)* Merlo, G. (Dept. Surg., U. Turin, Italy) and M. Musso. *Minerva Chir* 25(10):774-779, 1970.

8236 FALSE ANEURYSM IN A PANCREATIC PSUEDOCYST. *(E.)* Bardebheier, J. A., III. (Dept. Surg., St. Louis U., Missouri), O. Quintero and H. B. Barner. *Ann Surg* 172(1):53-55, 1970.

8237 PANCREATIC INJURIES: A SURVEY WITH EVALUATION. *(E.)* Erichsen, H. G. (Central Hosp., Trondheim, Norway) and H. Fortun. *Acta Chir Scand* 136(4):330-336, 1970.

8238 PANCREATIC TUMOR ASSOCIATED WITH LIFE-THREATENING DIARRHEA. *(E.)* Brunt, P. W. (Dept. Med., U. Edinburgh) and W. P. Small. *J Roy Coll Surg Edinb* 15(4):200-206, 1970.

8239 RETROPERITONEAL TUMORS: A REVIEW OF 134 CASES. *(E.)* Gill, W. (Dept. Clin. Surg., U. Edinburgh, Scotland), D. C. Carter and B. Durie. *J Roy Coll Surg Edinb* 15(4):213-221, 1970.

8240 SURGICAL DIFFERENTIATION OF LESIONS OF THE PANCREAS. *(E.)* Falconer, C. W. A. (Dept. Clin. Surg., U. Edinburgh, Scotland). *J Roy Coll Surg Edinb* 15(4):192-198, 1970.

8241 SOME RADIOLOGICAL FEATURES OF CARCINOMA OF THE HEAD OF THE PANCREAS. *(E.)* Cummack, D. H. (Western Gen. Hosp., Edinburgh, Scotland). *J Roy Coll Surg Edinb* 15(4):190-192, 1970.

8242 PAIN CAUSED BY PANCREATIC DISEASES. *(E.)* French, E. B. (Dept. Med., U. Edinburgh, Scotland). *J Roy Coll Surg Edinb* 15(4):183-184, 1970.

- P:Morph (7790)
- Diagproc (8004) (8008) (8015) (8034) (8039) (8040) (8053) (8054)
- D:S.Intest:Malabs (8169)
- D:Gen (8426) (8433) (8479)

PANCREAS

Pancreatitis

8243 CHRONIC PANCREATIC ASCITES. *(E.)* Schaefer, J. W. (U. Kentucky Med. Ctr., Lexington), S. C. Schindler, D. Hull and W. O. Griffen, Jr. *Gastroenterology* 59(3):453-459, 1970.

The clinical syndrome of chronic pancreatic ascites was defined and previously reported cases were reviewed; 3 new cases were reported. These patients were chronic alcoholics who experienced intermittent abdominal pain followed by rapid weight loss and chronic ascites; diagnosis was confirmed by persistently elevated serum and ascitic fluid amylase. Upon surgical exploration chronic pancreatitis, usually complicated with a pseudocyst, was found. Leakage of pancreatic secretions into the peritoneal cavity was considered to be of major importance in the pathogenesis of the ascites. Internal drainage of the pseudocyst into the gastrointestinal tract was an effective form of therapy.

8244 PATHOGENESIS OF BILE-INDUCED ACUTE PANCREATITIS IN THE DOG. *(E.)* Beck, I. T. (Hotel Dieu Hosp., Kingston, Ontario, Canada), P. T. Sum and S. A. Bencosme. *Amer J Dig Dis* 15(7):637-645, 1970.

8245 ETIOLOGY AND PATHOGENESIS OF PANCREATITIS: CURRENT CONCEPTS. *(E.)* Creutzfeldt, W. (Dept. Med., U. Gottingen, Germany) and H. Schmidt. *Scand J Gastroent* 5(suppl. 6):47-62, 1970.

8246 SURGICAL TREATMENT OF CHRONIC PANCREATITIS ACCORDING TO OUR EXPERIENCE. *(It.)* Massaioli, N. (Dept. Path., U. Turin, Italy). *Minerva Chir* 25(10):758-773, 1970.

8247 DIABETES MELLITUS AND CHRONIC PANCREATITIS. *(Fr.)* Derot, M. (no affil), H. Bour, M. Tutin and B. Guy-Grand. *Diabete* 18(2):93-96, 1970.

8248 ACUTE PANCREATITIS. *(E.)* Gliedman, M. L. (Albert Einstein Coll. Med., Yeshiva U., New York, N. Y.), H. Bolooki and R. G. Rosen. *Curr Probl Surg* (August 1970):1-52, 1970.

8249 PLASMA INSULIN IN CHRONIC PANCREATITIS. *(Fr.)* Azerad, E. (no affil), J. Lubetzki, J. Duprey, J. C. Croisier, J. J. Bernier and D. Blanc. *Diabete* 18(2):112-119, 1970.

8250 STUDIES ON PLASMA INSULIN LEVELS AFTER ORAL GLUCOSE LOAD IN PATIENTS WITH CHRONIC PANCREATITIS. *(Fr.)* Fourlinnie, J. C. (no affil), P. Fossati, J. Paris and M. Linquette. *Diabete* 18(2):105-111, 1970.

8251 ENDOCRINE PANCREAS IN CHRONIC PANCREATITIS: A HISTOLOGICAL STUDY. *(Fr.)* Potet, F. (Hosp. Beaujon, Clichy, France), J. Barge and N. Duclert. *Diabete* 18(2):85-88, 1970.

8252 POSTOPERATIVE PANCREATITIS: A STUDY OF SEVENTY CASES. *(E.)* White, T. T. (University Hosp., Seattle, Wash.), A. Morgan and D. Hopton. *Amer J Surg* 120(2):132-137, 1970.

8253 PANCREATITIS: A CLINICAL REVIEW. *(E.)* Pheils, M. T. (Repatriation Gen Hosp., Concord, New South Wales, Australia) and G. B. Mayday. *Med J Aust* 1(23):1142-1144, 1970.

8254 CHOLECYSTOPANCREATITIS: HISTOCHEMICAL FEATURES OF LIVER BIOPSIES. *(Rus.)* Mitasov, I. G. (Kharkov Med. Inst., USSR) and A. V. Shchelokova. *Lab Delo* (5):270-271, 1970.

8255 TWO RECENT CASES OF PLEURAL ENZYME EFFUSION REVEALING CHRONIC PANCREATITIS. *(Fr.)* Charleux, H. (Hosp. St. Louis, Paris, France), J. F. Benoit and J. F. Cossa. *Chirurgie* 96(6):417-422, 1970.

8256 PLEURAL ENZYME EFFUSION COMPLICATING PANCREATIC DISEASES: REPORT ON 3 CASES. *(Fr.)* Mouchet, A. (Hosp. Foch., Paris, France) and J. Marquand. *Chirurgie* 96(9):602-608, 1970.

8257 ACUTE PANCREATITIS: THERAPY AND SURGERY IN 74 CASES. *(Fr.)* Lagache, G. (City Hosp., Lille, France), B. Combemale and M. Vankemmel. *Lille Med* 15(4):622-633, 1970.

8258 ACUTE PANCREATITIS FOLLOWING SPHINCTEROTOMY. *(Fr.)* Frank, P. (no affil) and J. Weill. *J Med Strasbourg* 1(5):397-401, 1970.

8259 TREATMENT OF CHRONIC PANCREATITIS. *(Ger.)* Ammann, R. (Canton Hosp., Zurich, Switzerland). *Deutsch Med Wschr* 95(22):1234-1235, 1970.

8260 METHODS IN PANCREATITIS RESEARCH USING LIVING ACINAR CELLS. *(E.)* Haig, T. H. B. (Dept. Surg., U. Saskatchewan, Saskatoon, Canada). *Canad J Surg* 13(3):251-254, 1970.

8261 ACUTE PANCREATITIS WITH PERIPHERAL FAT NECROSIS. *(E.)* Woods, J. M. (Toronto East Gen. Hosp., Ontario, Canada) and N. J. Hodson-Walker. *Canad Med Ass J* 103(4):382-384, 1970.

o Diagproc (8044)
o D:Pancreas (8234)
o D:Livbil:Gallb (8407)
o D:Gen:Parasit (8495)

LIVER AND BILIARY TRACT

8262 FREE AMINO ACID PATTERN IN THE LIVER FROM THE PATIENTS WITH AMINO ACID DISORDERS OF AMINO ACID METABOLISM. *(E.)* Tada, K. (Tohoku U. Sch. Med., Sendai, Japan), T. Yoshida and T. Arakawa. *Tohoku J Exp Med* 101(3):223-226, 1970.

The free amino acid pattern in livers biopsied or autopsied from the patients with amino acid disorders and from several controls was investigated. A noticeable difference in free amino acid pattern between the liver and the serum was observed, with a marked elevation of non-essential amino acids including aspartic acid, glutamic acid, serine, glycine and alanine in the liver as compared to the serum. An accumulation of phenylalanine (33.7 mg/100 g) in phenylketonuria, of methionine and homocystine (5.51 and 5.64 mg/100 g) in homocystinuria, of cystathionine (21.4 mg/100 g) in cystathioninuria, of glycine (21.5 mg/100 g) in hyperglycinemia and of alanine (25.9 mg/100 g) in hyperalaninemia was found in the biopsied livers. The increase of the amino acid in the respective disorders was 2- or 3-fold higher in the liver than in blood, but in cystathioninuria and homocystinuria the concentrations of cystathionine or homocystine in blood (1.3 and 0.4 mg/100 ml, resp.) were much lower compared to the accumulation of the amino acid in the liver, probably due to a higher clearance of these specific amino acids by the kidney. Analysis of the free amino acid pattern in postmortem liver tissue showed higher values compared to biopsied tissue, perhaps due to partial autolysis of the tissue.

8263 THE BLOOD SUPPLY OF EXPERIMENTAL LIVER METASTASES: II. A MICROCIRCULATORY STUDY OF THE NORMAL AND TUMOR VESSELS OF THE LIVER WITH THE USE OF PERFUSED SILICONE RUBBER. *(E.)* Lien, W. M. (Boston U. Med. Ctr., Mass.) and N. B. Ackerman. *Surgery* 68(2):334-340, 1970.

The blood supply of implanted liver tumors in rats was studied 4 days after implantation by perfusion with a colored silicone rubber. The newly formed tumor vessels took the form of a plexus or ring, situated at the periphery of the tumor and were connected to branches of the hepatic artery. Portal vein branches came close to the tumor, ending abruptly but never participating in the formation of the plexus of tumor vessels. Shunting from the hepatic artery to the portal vein was observed; after hepatic artery ligation, in almost half of the animals, the tumor plexus circulation was filled by perfusion via the portal vein.

8264 GLUCOCORTICOID-INDUCED ALTERATION OF THE SURFACE MEMBRANE OF CULTURED HEPATOMA CELLS. *(E.)* Ballard, P. L. (Natl. Inst. Arthritis Metab. Dis., Natl. Inst. Hlth., Bethesda, Md.) and G. M. Tomkins. *J Cell Biol* 47(1):222-234, 1970.

The effects of glucocorticoids on the surface membrane of cultured hepatoma (Morris) cells were investigated and evaluated by changes in cell electrophoretic, antigenic, and adhesive properties. The alteration was assayed by the increased adhesiveness of induced cells for a glass surface. The induction process (dexamethasone, 10^{-7}M) had a lag period of about 3 hr and attained a plateau after 24-30 hr when 50-80% of the steroid-treated cells were firmly adhered; less than 10% of the untreated cells adhered under the same conditions. Induction was inhibited by actinomycin D and cycloheximide, and demonstrated both pH (optimum 7.5) and temperature (24-37.5°C) dependence and responded to changes in steroid concentration (half maximal adhesion at 4×10^{-9}M). The adhesiveness of preinduced cells (grown in the presence of dexamethasone) was not affected by inhibitors of RNA and protein synthesis, fluctuations of temperature and pH, and the presence or absence of the steroid. When the induction process was reversed by removal of steroid or addition of actinomycin D, preinduced adhesiveness was lost with a half-life of 13-24 hr, but in the presence of cycloheximide the loss was accelerated ($t_{1/2}$ 3-5.5 hr). Glucocorticoids appear to induce the biosynthesis of a protein which either modifies the cell surface or is incorporated into surface structures (structural protein).

8265 STUDIES ON THE MECHANISM OF TEMPLATE STABILITY: CYTOPLASMIC DNA-LIKE RNA IN HEPATOCELLULAR CARCINOMAS. *(E.)* Sladek, N. E. (Dept. Pharmacol., U. Minnesota, Minneapolis) and H. C. Pitot. *Cancer Res* 30(6):1598-1604, 1970.

The DNA-like RNA in the cytoplasm of the liver cell and in highly differentiated hepatocellular carcinomas in rats was investigated by radioactive compound labeling and electron microscopy. Administration of actinomycin D (500 μg/kg) to rats given inorganic $^{32}PO_4$ to label their RNA resulted in a marked decrease in the total labeling of cytoplasmic RNA within a 3 hr period. However, the ^{32}P-labeled nucleotide composition of the RNA labeled in the presence of actinomycin D *in vivo* was quite similar to that of rat liver DNA, rather than to ribosomal RNA. This DNA-like RNA appeared to be associated with both the rough endoplasmic reticulum and the free polysomes of liver, and was also present in both the rough endoplasmic reticulum and the free polysomes of Morris hepatomas 5123c and 7800, as well as the Reuber hepatoma H-35. The DNA-like RNA may be associated with or equal to the postulated stable RNA templates in liver and hepatoma cytoplasm.

8266 SERUM LIPOPROTEIN PATTERNS IN LIVER DISEASE. *(E.)* Papadopoulous, N. M. (Walter Reed Army Inst. Res., Washington, D.C.) and M. A. Charles. *Proc Soc Exp Biol Med* 134(3):797-799, 1970.

An agarose gel electrophoretic technique which clearly detects and sharply resolves serum lipoproteins was applied to the determination of serum lipoprotein patterns in liver diseases (8 patients with Laennec's cirrhosis, 8 with viral hepatitis, and 3 with primary biliary cirrhosis). The patterns obtained were characterized by the presence of beta-, the absence of pre-beta-, and a trace of alpha-lipoproteins in portal cirrhosis; the presence of beta-, pre-beta-, and alpha-lipoproteins in primary biliary cirrhosis; and a densely stained beta- and absence of pre-beta- and alpha-lipoproteins in viral hepatitis during the first week of the acute phase and the reappearance of pre-beta- and alpha-lipoproteins after 2 weeks in the recovering cases without complications. The capacity of the hepatocyte to form alpha- and pre-beta-lipoproteins seemingly is greatly diminished in parenchymal liver disease but not in obstructive liver disease.

8267 HEPATIC INVOLVEMENT IN JUVENILE RHEUMATOID ARTHRITIS. *(E.)* Schaller, J. (U. Washington Sch. Med., Seattle), B. Beckwith and R. J. Wedgwood. *J Pediat* 77(2):203-210, 1970.

Five children with rheumatoid arthritis, in whom the onset was before the age 6 years, had massive hepatomegaly with mild derangement of liver function studies (elevated serum levels of transaminases and bilirubin and bromsulphalein retention). Three patients were originally thought to have malignancy or infections, rather than juvenile rheumatoid arthritis while all patients had high spiking fevers and other systemic manifestations and hepatomegaly which occurred at or near the onset of disease and regressed with its remission. Hepatic histology, studied in 4 of 5 children, showed nonspecific periportal collections of inflammatory cells and hyperplasia of Kupffer cells (no child had evidence of progressive liver disease). Juvenile rheumatoid arthritis should be considered in the differential diagnosis of hepatomegaly in children, particularly if it is associated with high fever and other manifestations of the disease, such as arthritis, rheumatoid rash, splenomegaly, generalized lymphadenopathy, pleuritis and pericarditis.

8268 EFFECT OF PARTIAL HEPATECTOMY ON TUMOR INCIDENCE IN BALB/c MICE TREATED WITH URETHAN. *(E.)* Lane, M. (Baylor Coll. Med., Houston, Texas), A. Liebelt, J. Calvert and R. A. Liebelt. *Cancer Res* 30(6):1812-1816, 1970.

Urethan was administered (3 mg/g body weight i.p. on alternate days) to 8- to 10-week-old BALB/c/Ki male and female mice, both intact and following removal of approximately 30% or 70% of the liver. In operated mice, injections were begun 2 days after partial hepatectomy. An additonal group had 70% of the liver removed but did not receive urethan. The incidence of hepatoma was increased (41%) in urethan-treated mice subjected to 70% hepatectomy and not increased in animals in other experimental groups (4% in same conditions without urethan treatment). Mitotic indices (mitoses/1000 cells) of liver tissue, determined in groups of untreated male and female mice after 30% and 70% hepatectomy, were significantly influenced by amount of liver removed and sex of animals(27 and 2 in males and 1 and 9 in females, 48 hrs after surgery, respectively). The increased rate of proliferation of liver cells after hepatectomy may enhance the susceptibility of the liver to the carcinogenic action of urethan.

8269 ACUTE INTERMITTENT PORPHYRIA: INCREASED ALA-SYNTHETASE ACTIVITY DURING AN ACUTE ATTACK. *(E.)* Sweeney, V. P. (Vancouver Gen. Hosp., British Columbia, Canada), M. A. Pathak and A. K. Asbury. *Brain* 93(2):369-380, 1970.

Delta-amino-levulinic acid (ALA)-synthetase activity was correlated biochemically with aberrations of porphyrin metabolism in liver biopsy specimens obtained from a 29-yr-old man with fatal, acute intermittent porphyria. A 40-fold or more increase in activity of ALA synthetase, the rate controlling enzyme in porphyrin biosynthesis, was established and correlated with concomitant parameters of disordered porphyrin metabolism and the clinical pathological features. ALA-synthetase activity (nmole/hr/g) measured in a specimen taken at open biopsy during an acute attack was markedly increased (800 vs 10-37 for controls) and was positively correlated with concomitant increases in liver levels of ALA (234 μg/g vs 0 for controls) and porphobilinogen (396 μg/g vs 0 for controls). ALA-synthetase activity was increased to a lesser degree (120) in a biopsy specimen taken from this patient 40 min after death. The increase in ALA-synthetase activity during an acute attack of intermittent porphyria seemingly confirms previous postulation that this is indeed an "overproduction disease" in which an increase in the level of activity of a rate limiting enzyme results in increased biosynthesis and accumulation of subsequent metabolic products.

8270 THYROID HORMONE REGULATION OF MITOCHONDRIAL α-GLYCEROPHOSPHATE DEHYDROGENASE IN LIVER AND HEPATOMA. *(E.)* Hunt, S. M. (U. Connecticut McCook Hosp., Hartford), M. Osnos and R. S. Rivlin. *Cancer Res* 30(6):1764-1768, 1970.

The effect of thyroid hormone in rats upon the induction of mitochondrial α-glycerophosphate dehydrogenase has been studied in normal liver, in Novikoff hepatoma, in Morris hepatoma 7800, and in host liver of animals bearing Novikoff or Morris hepatomas. Enzyme activities were determined both before and 48 hr after a single i.p. injection of L-triiodothyronine, 100 μg/100 g body weight. In livers of rats bearing the rapidly growing Novikoff hepatoma, basal enzyme activity was increased 75% over levels in non-tumor-bearing controls (19.5 and 11.2 μmoles O_2/mg mitochondrial protein/min, resp.). By contrast, hepatic enzyme activity in rats bearing the more slowly growing Morris hepatoma did not differ from control levels (17.5 μmoles O_2/mg mitochondrial protein/min, in both cases). In normal animals, administration of L-triiodothyronine greatly increased activity of α-glycerophosphate dehydrogenase (from 19 to 80 μmoles O_2). In livers of animals bearing either Novikoff or Morris hepatomas, enzyme activity after administration of L-triiodothyronine was similar to levels obtained in livers of normal animals similarly treated. The activity of α-glycerophosphate dehydrogenase in Novikoff hepatoma, expressed per mg mitochondrial protein was considerably higher than in liver (130 μmoles O_2/min/mg protein), and was not induced by L-triiodothyronine. In the Morris hepatoma, basal activity was similar to that of normal liver, 10 μmoles O_2/min/mg protein and was increased 2-fold by L-triiodothyronine. Apparently, induction of α-glycerophosphate dehydrogenase by thyroid hormone was not demonstrable in the Novikoff hepatoma, was diminished but present in the Morris hepatoma 7800, and was unimpaired in liver of rats bearing either tumor.

8271 ACUTE GRANULOMATOUS DISEASE OF THE LIVER. *(E.)* Gelb, A. (New York Polyclin. Hosp., New York), N. Brazenas, H. Sussman and R. Wallach. *Amer J Dig Dis* 15(9):842-847, 1970.

Liver biopsy in 2 patients with hepatic granuloma and acute febrile condition revealed epithelioid and mononuclear cell granulomas throughout the liver. Both patients had lymphocytosis and atypical forms in the peripheral blood. Heterophil antibody titers, performed multiple times in the course of their illnesses, were normal. Both patients recovered, 1 after 3 weeks and 1 after 6 weeks. The clinical and laboratory features in these patients suggest an "infectious mononucleosis-like" illness. Similar biopsy findings are occasionally encountered in heterophil antibody-positive infectious mononucleosis.

8272 MORPHOLOGY AND HISTOCHEMISTRY OF WILSONIAN AND HEPATOGENIC GLIOPATHY IN TISSUE CULTURE. *(E.)* Mossakowski, M. J. (Polish Acad. Sci., Warsaw), K. Renkawek, Z. Krasnicka, M. Smialek and A. Pronaszko. *Acta Neuropath* 16(1):1-16, 1970.

Morphological changes occurring in glial cell cultures treated with sera from patients with Wilson's disease or hepatic coma or with copper acetate or ammonium chloride were described. In all experimental groups, Alzheimer cells type I and II, Opalski cells, and intermediate cells were observed; histochemical abnormalities appeared in the form of an accumulation of neutral and acid mucopolysaccharides in the cytoplasm of Opalski and intermediate cells, with an accompanying decrease of succinate dehydrogenase and glutamate dehydrogenase activities, and an increase in glucose-6-phosphate dehydrogenase and acid phosphatase activities. The possible pathogenic mechanism of the above changes may be related to copper and ammonia damage of the intracellular enzymatic chains involved in carbohydrate metabolism leading to an accumulation of mucopolysaccharides in glial cells.

8273 CHARACTERISTICS OF GALACTOSE-1-PHOSPHATE URIDYL TRANSFERASE IN INTESTINAL MUCOSA OF NORMAL AND GALACTOSEMIC HUMANS. *(E.)* Rogers, S. (Child. Hosp., Philadelphia, Pa.), P. G. Holtzapple, W. J. Mellman and S. Segal. *Metab Clin Exp* 19(9):701-708, 1970.

The characteristics of the activity of galactose-1-phosphate uridyl transferase were determined by the method of Bertoli and Segal in homogenates of jejunal muscle biopsies obtained from normal subjects, from 5 patients with congenital galactosemia, and from 2 obligate heterozygotes. Transferase activity in tissue from normal young adults was 12.9 mμmoles UDP galactose formed/min/mg protein while heterozygote levels were 3.7 and 3.1 mμmoles/min/mg protein. Of the five galactosemic children, three Negro patients had easily detectable activity about 10% of normal whereas Caucasian patients had none. The presence of some transferease in visceral tissue appears to delineate racial differences in galactosemic subjects further and may explain the ability of Negro galactosemics to adequately metabolize small amounts of galactose.

8274 CLINICAL TRIALS OF XANTINOL NICOTINATE IN CHRONIC LIVER DISEASES. *(Ger.)* Dohrmann, R. E. (Med. U. Polyclin., Bonn, Germany), D. Konrad and I. Kuhl. *Therapiewoche* 20(32):1580-1584, 1970.

8275 CHOLESTEROL AND CANCER. *(E.)* Siperstein, M. D. (U. Texas, Med. Sch. Dallas). *Trans Amer Clin Climat Ass* 81:107-118, 1970.

8276 SINUSOIDAL PORTAL HYPERTENSION. *(E.)* Kluge, T. (U. Hosp. Oslo, Norway), H. Sommerschild and A. Flatmark. *Surgery* 68(2):294-300, 1970.

8277 LIVER EXCRETION AND BILE FLOW IN HEPATOBILIARY DISEASES. *(Rus.)* Chebykina, N. V. (Dnepropetrovsk Sci. Res. Inst. Gastroent., USSR). *Vrach Delo* (4):124-127, 1970.

8278 ULTRASTRUCTURAL FEATURES OF INVASION IN CHICK EMBRYO LIVER METASTASIS OF YOSHIDA ASCITES HEPATOMA. *(E.)* Locker, J. (Dept. Path., U. Chicago, Ill.), P. J. Goldblatt and J. Leighton. *Cancer Res* 30(6):1632-1644, 1970.

8279 METABOLIC ABNORMALITIES IN THE PANCREATIC ISLETS AND LIVERS OF THE DIABETIC CHINESE HAMSTER. *(E.)* Chang, A. Y. (Upjohn Co., Kalamazoo, Mich.) and D. I. Schneider. *Diabetologia* 6(3):180-185, 1970.

8280 SERIAL SCANS OF LIVER REGENERATION AFTER HEMIHEPATECTOMY IN CHILDREN. *(E.)* Samuels, L. D. (Child. Hosp., Columbus, O.) and J. L. Grosfeld. *Surg Gynec Obstet* 131(3):453-457, 1970.

8281 HISTOPATHOLOGIC AND ULTRASTRUCTURAL STUDY OF ALLOGENIC HEPATIC TRANSPLANTATION IN ISOGENIC RATS. *(E.)* Fisher, E. R. (U. Pittsburgh Sch. Med., Pa.) and B. Fisher. *Lab Invest* 23(3):318-326, 1970.

8282 HISTOCHEMICAL STUDIES ON RAT LIVER PROTEINS DURING 4-DIMETHYLAMINOAZOBENZENE CARCINOGENESIS. *(E.)* Briere, N. (Fac. Med. U. Sherbrooke, Quebec, Canada) and R. Daoust. *Cancer Res* 30(5):1370-1375, 1970.

8283 RED CELL EQUILIBRATION IN LIVER TISSUE DURING EXPERIMENTAL SHOCK. *(E.)* James, N. J. (Mt. Sinai Sch. Med., New York, N. Y.), T. Matsuda and W. C. Shoemaker. *Ann Surg* 172(1):109-115, 1970.

8284 FINE STRUCTURE OF HUMAN LIVER IN GENERALIZED GANGLIOSIDOSIS G_{m1}. *(Ger.)* Themann, H. (Inst. Med. Phys., Westfallian Wilhelms U., Munich, Germany), L. Diekmann and D. B. Von Bassewitz. *Beitr Path Anat* 140(2):194-211, 1970.

8285 EXPERIMENTAL AND CLINICAL LIVER TRANSPLANT: IMMUNE THERAPY. *(Ger.)* Lie, T. S. (Surg. U. Clin. Bonn, Germany). *Zbl Chir* 95(34):1001-1008, 1970.

8286 EXPERIMENTAL ACUTE HEPATIC INSUFFICIENCY IN DOGS. *(Rus.)* Lopukhin, Yu. M. (N. I. Pirogov. Med. Inst. Moscow, USSR), A. K. Dubrovsky, V. N. Kuznetsov, S. M. Kremli and M. G. Khovanskaya. *Eksp Khir Anest* 15(3):25-29, 1970.

8287 TUMOR LIPIDS, PHOSPHOLIPID DISTRIBUTION IN MITOCHONDRIA AND MICROSOMES OF THE SOLID RAT HEPATOMA-27 AND MOUSE HEPATOMA-22. *(Rus.)* Dyatlovitskaya, E. V. (Acad. Sci. USSR, Moscow), T. I. Torkhovskaya, I. B. Sorokina, N. P. Gorkova and L. D. Bergelson. *Biokhimiia* 35(3):489-492, 1970.

8288 CYSTIC ENLARGEMENT AND DISSEMINATED PAPILLOMATOSIS OF THE HEPATOBILIARY TRACT. *(Fr.)* Gautier-Benoit, C. (C. H. U. Lille, France), C. L'Hermine, J. C. Paris and M. Houcke. *Chirurgie* 96(5):359-363, 1970.

8289 THERAPY OF CHOLESTATIC LIVER DISEASES. *(Ger.)* Kuhn, H. A. (Med. Clin. Polyclin., Justus Liebig U., Giessen, Germany). *Internist Prax* 10(2):309-311, 1970.

8290 TREATMENT OF CHOLESTATIC HEPATOSIS. *(Ger.)* Thaler, H. (Wilheminen Hosp., Vienna, Austria). *Deutsch Med Wschr* 95(32):1654-1656, 1970.

8291 BLOOD ALTERATIONS IN LIVER DISEASES. *(Ger.)* Dittrich, H. (Hanusch Hosp., Vienna, Austria). *Wien Med Wschr* 120(24):433-434, 1970.

8292 METABOLAN IN LIVER DISEASES. *(Ger.)* Bogenhard, H. (Park Sanit. Prof. Hulse, Bad Neuenahr, Germany). *Therapiewoche* 20(32):1579-1580, 1970.

8293 A LIPOPROTEIN CHARACTERIZING OBSTRUCTIVE JAUNDICE: ISOLATION AND ANALYSIS. *(E.)* Furman, R. H. (Oklahoma Med. Res. Found., Oklahoma City), E. Seidel and P. Alaupovic. *Trans Amer Clin Climat Ass* 81:98-106, 1970.

8294 AGE DISTRIBUTION OF α-FETOPROTEIN IN HEPATOCELLULAR CARCINOMA. *(E.)* Bagshawe, A. (Dept. Med. U. Coll. Nairobi, Kenya) and A. M. Parker. *Lancet* 2(7666):268, 1970.

8295 STUDIES ON ENZYMES OF GLYCOLYSIS AND GLUCOSE SHUNT IN PRECANCEROUS RAT LIVER AND IN HEPATOMAS. *(Ger.)* Sydow, G. (German Acad. Sci., Berlin, Germany). *Arch Geschwulstforsch* 35(4):379-383, 1970.

8296 LACTIC DEHYDROGENASE ISOENZYMES IN HEPATIC DISEASES. *(Nor.)* Roin, J. (Odense Hosp., Denmark), E. E. Simonsen and S. Hvidt. *Ugeskr Laeg* 132(33):1509-1511, 1970.

8297 ON THE TOPOCHEMICAL BEHAVIOR OF SORBITOL DEHYDROGENASE IN RAT LIVER CANCERIFICATION DUE TO DIETHYLNITROSAMINE. *(Ger.)* Stiller, D. (Path. Inst., Friedrich Schiller U., Jena, Germany). *Exp Path* 4(2-3):207-209, 1970.

8298 FOCAL LIVER CELL NECROSES ACCOMPANIED BY INFILTRATION OF GRANULOCYTES ARISING DURING OPERATION. *(E.)* Christoffersen, P. (Commun. Hosp., Copenhagen, Denmark), H. Poulsen and E. Skeie. *Acta Hepatosplen* 17(4):240-245, 1970.

8299 ISOLATED BLEEDING FROM COLONIC VARICES IN PATIENTS WITH LIVER DISEASE. *(E.)* Doberneck, R. (Creighton U. Sch. Med., Omaha, Neb.) and N. A. Janovski. *Amer J Dig Dis* 15(9):834-841, 1970.

8300 SURVIVAL AFTER LIVER RESECTION FOR CANCER. *(E.)* Foster, J. H. (Hartford Hosp., Conn.). *Cancer* 26(3):493-502, 1970.

8301 TREATMENT OF SECONDARY HEPATIC TUMORS BY LIGATION OF HEPATIC ARTERY AND INFUSION OF CYTOTOXIC DRUGS. *(E.)* Murray-Lyon, I. M. (King's Coll. Hosp., London, England), V. A. Parsons, L. M. Blendis, J. L. Dawson, M. O. Rake, J. W. Laws and R. Williams. *Lancet* 2(7665):172-175, 1970.

8302 PRIMARY HEMANGIOPERICYTOMA OF LIVER ASSOCIATED WITH HYPOGLYCEMIA: REPORT OF A CASE. *(E.)* Weitzner, S. (VA Hosp., Albuquerque, N. M.). *Amer J Dig Dis* 15(7):673-678, 1970.

8303 ORTHOTOPIC AND HETEROTOPIC LIVER HOMOGRAFTS IN MAN. *(E.)* Fortner, J. G. (Mem. Hosp. Cancer Allied Dis., New York, N. Y.), E. J. Beattie, Jr., M. H. Shiu, N. Kawano and W. S. Howland. *Ann Surg* 172(1):23-32, 1970.

8304 ENCEPHALOPATHY WITH FATTY DEGENERATION OF THE LIVER (REYE'S SYNDROME): REPORT OF FOUR CASES IN MAINE. *(E.)* Hallett, G. W. (Maine Med. Ctr., Portland). *J Maine Med Ass* 61(9):186-188, 1970.

8305 INHIBITING EFFECT OF RESERPINE AND FEMALE SENSITIVITY IN HEPATIC TUMOR INDUCTION WITH 2,7 -DIACETAMIDOFLUORENE IN SMA/Ms STRAIN MICE. *(E.)* Kozuka, S. (Nagoya U. Sch. Med., Japan). *Cancer Res* 30(5):1384-1386, 1970.

8306 FATTY LIVER WITH JAUNDICE: A DIAGNOSTIC ENIGMA WITH SURGICAL IMPLICATIONS. *(E.)* Steigmann, F. (Cook County Hosp., Chicago, Ill.) and M. N. Shah. *Amer J Gastroent* 54(2):126-133, 1970.

8307 FECAL EXCRETION OF BILE ACIDS AND LIPIDS IN CASE OF NORMAL AND DRUG STIMULATED CHOLERESIS OF MAN. *(Ger.)* Schreiber, J. (Ctr. Intern. Med., Johann Wolfgang Goethe U., Frankfurt, Germany), W. Erb, J. Wildgrube and E. Bohle. *Z Gastroent* 8(4):230-239, 1970.

8308 CHEMOTHERAPY, RADIOTHERAPY, AND HEPATIC LOBECTOMY FOR HEPATOBLASTOMA IN AN INFANT: REPORT OF A SURVIVAL. *(E.)* Hermann, R. E. (Cleveland Clin. Found., Ohio) and D. Lonsdale. *Surgery* 68(2):383-388, 1970.

8309 HEMANGIOMATOSIS OF THE LIVER WITH THROMBOSIS FOLLOWING USE OF AN ORAL CONTRACEPTIVE. *(E.)* Kositchek, R. J. (St. John Hosp., Santa Monica, Calif.) and R. A. Cullen. *California Med* 113(3):70-74, 1970.

8310 PRIMARY CANCER OF THE LIVER: QUADRENNIAL REVIEW. *(E.)* Lin, T. Y. (Natl. Taiwan U. Hosp., Taipei, Formosa). *Scand J Gastroent* 5(suppl. 6):223-241, 1970.

8311 LIVER IN HEMOGLOBIN H DISEASE. *(E.)* Chew, B. K. (Dept. Med., U. Singapore) and K. K. Tan. *Gut* 11(5):423-429, 1970.

8312 DIFFERENTIATION AND MANAGEMENT OF THE PATIENT WITH JAUNDICE. *(E.)* Javitt, N. B. (New York Hosp., Cornell Med. Ctr., New York). *Hosp Pract* 5(1):34-39, 1970.

8313 ABNORMAL TYROSINE METABOLISM IN HEREDITARY FRUCTOSE INTOLERANCE. *(E.)* Grant, D. B. (Hosp. Sick Child., London, England), F. W. Alexander and J. W. T. Seakins. *Acta Paediat Scand* 59(4):432-434, 1970.

8314 THE KINETICS OF ORGANIC ANION EXCRETION BY THE LIVER IN ACUTE INTERMITTENT PORPHYRIA. *(E.)* Tschudy, D. P. (Natl. Cancer Inst., Bethesda, Md.), J. A. Stein, J. R. Bloomer, P. D. Berk, P. L. Corcoran. *Clin Sci* 38(6):677-686, 1970.

8315 LIVER TRANSPLANTATION IN THE PIG. *(E.)* Hunt, P. (Prince Henry's Hosp., Melbourne, Australia), J. Cocks, W. De Boer, P. Dennis, E. Gordon, P. Jablonski, A. Sali, A. Tannenberg, D. Yoffa and J. McK. Watts. *Med J Aust* 57(6):261-265, 1970.

- P:Morph (7802) (7806) (7809)
- P:Secr:Hepatobil (7884) (7889) (7895) (7898) (7900) (7902) (7908) (7946) (7952) (7960) (7962) (7974) (7976)
- P:Gen (8001)
- Diagproc (8008) (8013) (8014) (8020) (8023) (8028) (8031) (8038) (8049) (8050) (8051)
- D:L.Intest:Ulccol (8216)
- D:Livbil:A.Nonv.Hep (8318) (8319)
- D:Livbil:Cirrh (8389)
- D:Livbil:Gallb (8398) (8407) (8419)
- D:Gen (8428) (8430) (8450) (8473)
- D:Gen:Parasit (8491) (8496)

LIVER AND BILIARY TRACT

Acute Nonviral Hepatitis and Hepatic Injury

8316 CLINICAL AND EXPERIMENTAL STUDIES OF LIVER INJURY IN DIABETES MELLITUS: II. EXPERIMENTAL STUDIES. *(E.)* Takeuchi, J. (Sch. Med. Kanazawa U., Japan), A. Takada, Y. Nakada, G. Sawae and Y. Okumura. *Acta Hepatosplen* 17(4):228-240, 1970.

The effect of a diabetic state in alloxanized (maintained for periods up to 9 months) rats on hepatic injury caused by CCl_4 or alcohol was investigated. Rats maintained in a simulated diabetic state for more than 9 months demonstrated neither necrosis of hepatic cells nor fibrosis, and had normal serum transaminase levels. Following CCl_4 administraton (0.5 ml/100 g i.p.), levels of SGOT increased 5-6-fold in both control and diabetic animals; the SGOT values returned to normal by the 5th day in control animals, but not until the 7th day in diabetic animals. Following long term administration (20 injections) of CCl_4 (0.3 ml/100 g i.p. twice a week), in 4 of 6 rats in the diabetic group, fibrosis was pronounced both within and between lobules. In all 6 cases, the remaining hepatic cells were unequal in size due to hyperplasia and proliferation of cholangioles was seen. Fat deposition and necrosis of hepatic cells (absent in the diabetic group) were more frequent in the controls. Following a single administration of alcohol (1.5 ml/100 g of 50% solution, stomach tube), abnormalities in SGOT and SGPT levels were not seen in either the diabetic or control groups. In a study of the long term administration of alcohol (a 15% aqueous solution of alcohol replaced the drinking water), fat deposition in the liver was observed in both diabetic and control groups, the differences between the two groups being insignificant. Necrosis of hepatic cells, interstitial cell infiltration or fibrosis were not seen in either of the groups.

8317 DYNAMICS OF LIVER CELL INJURY AND REPAIR: I. SPONTANEOUS REFORMATION OF THE NUCLEOLUS AND POLYRIBOSOMES IN THE PRESENCE OF EXTENSIVE CYTOPLASMIC DAMAGE INDUCED BY ETHIONINE. *(E.)* Shinozuka, H. (U. Pittsburgh Sch. Med., Pa.), I. M. Reid, K. H. Shull, H. Liang and E. Farber. *Lab Invest* 23(3):253-267, 1970.

The fine structural alterations and selected metabolic alterations of rat hepatic cells were examined at different time intervals up to 48 hr after ethionine administration (1 mg/g wt). Nucleoli at 12 hr showed extensive fragmentation and scattering of their components; disaggregation of polyribosomes and accumulation of lipids were the prominent changes in the cytoplasm. At 20 and 24 hr the nucleoli began to regain their structure, exhibiting simple rodlike structures composed of particulate and fibrillar elements which elongated and coalesced to form nucleoli with prominent nucleolonema. Lipid accumulation progressed, and disaggregation of polyribosomes remained in the cytoplasm. Hepatic ATP levels and RNA synthesis began to recover, whereas protein synthesis remained inhibited. By 36 and 48 hr many nucleoli appeared to be morphologically normal, although a few nucleoli showed hypertrophy. The cytoplasm showed severe disorganization of organelles with persistent accumulation of lipids and formation of numerous concentric lamellar bodies. Although RNA synthesis returned toward the control value, ATP levels remained at 60 per cent of control. The early recovery in the nuclei from acute ethionine injury apparently takes place independently of the changes in the cytoplasm; this different reaction may be due to the different response of nucleus and cytoplasm to the ATP deficiency induced by ethionine.

8318 CHOLESTEROL METABOLISM AND PLASMA LECITHIN-CHOLESTEROL ACYL TRANSFERASE IN EXPERIMENTAL HEPATITIS AND CHOLESTASIS IN THE RAT. *(Ger.)* Kattermann, R. (Med. U. Clin., Gottingen, Germany) and D. I. Wolfrum. *Z Klin Chem* 8(4):413-419, 1970.

The physiological importance of lecithin-cholesterol acyltransferase in cholesterol metabolism as related to liver damage was studied in male rats. Hepatitis was induced by D-galactosamine (0.50-0.75 g/kg i.p., single dose) and intrahepatic cholestasis was produced by α-naphthylisothiocyanate (150 mg/kg p.o., single dose). Total and free cholesterol in liver and plasma and the activity of plasma lecithin-cholesterol acyltransferase were determined after 12, 24, 48 and 72 hr following treatment. A rapid decrease of plasma lecithin-cholesterol acyltransferase activity (from 1.6 to 0.14 mU/ml) occurred through galactosamine-induced hepatitis, while alanine and aspartate transaminases increased 100-fold (from 14.5 to 1680 and from 40 to 4100 mU/ml, resp.) above normal. Plasma cholesterol ester levels decreased (from 43 to 19 mg/100 ml), and free cholesterol increased considerably (from 18 to 52 mg/100 ml), while an increase of liver cholesterol esters (from 0.25 to 1.0 mg/g fresh wt) with accumulation of triglycerides occurred. Cholestasis caused a slight increase of plasma lecithin-cholesterol acyltransferase activity (from 1.6 to 1.8 mU/ml) with a slight decrease of plasma cholesterol ester levels (from 67% to 43%) and irregular increases in free cholesterol, while in the liver the relationship was reversed. Formation of cholesterol esters in plasma seems to depend on the secretion of lecithin-cholesterol acyltransferase by the liver, and a rapid decrease of this enzyme through experimental liver damage leads to lowered plasma cholesterol ester levels.

8319 INFLUENCE OF THYROID FUNCTION ON EXPERIMENTAL LIVER INJURIES. *(E.)* Kulcsar, A. (U. Med. Sch. Debrecen, Hungary), J. Kulcsar-Gergely and A. Daroczy. *Tohoku J Exp Med* 101(3):251-256, 1970.

The effect of changes in thyroid function on the healthy and intoxicated liver was investigated by determining the total dye eliminating capacity of rat liver. BSP elimination in animals with healthy liver showed no essential changes either under the influence of thyroxine treatment or following thyroidectomy. Subacute CCl_4 intoxication (0.05 ml/100 g 3 times every other day) increased the BSP level of the blood from 7.5 to 12.2 mg% whereas chronic liver injury (CCl_4) increased serum BSP concentration to 17.8 mg%. Rats receiving both thyroxine and CCl_4 showed significantly increased BSP values (24.5 mg%) as compared with those treated with CCl_4 alone (12.2 mg%). Changes in serum BSP produced by the CCl_4 treatment following thyroidectomy were not significant compared to those of thyroidectomized animals. The enhancement of the damaging effect of subacute CCl_4 intoxication of the liver by thyroxine treatment was confirmed by histological examination of 5 rat livers which revealed centrilobular hepatic cells with variable degrees of degeneration, some necrotic and balloon cells and infiltration of leucocytes and macrophages of a more serious order in the thyroxine-treated, CCl_4-treated rats than in the CCl_4-treated rats.

8320 RATES OF ENZYME ELIMINATION FROM THE LIVER INTO BLOOD PLASMA FOLLOWING ACUTE DAMAGE WITH CARBON TETRACHLORIDE. *(Ger.)* Schlosser, H. (Physiol. Chem. Inst., Friederich Schiller U., Jena, Germany). *Acta Biol Med German* 24(4):421-430, 1970.

Liver damage was produced in rats by i.p. injection of 1.25 ml/kg of CCl_4 dissolved in plant oil, and the release of sorbitol dehydrogenase and glutamic dehydrogenase by the liver into the blood stream was investigated; the half life of these enzymes was calculated from the disappearance rate from blood. A half life of 5.5 hr was estimated for sorbitol dehydrogenase, and a half life of 7.3 hr for glutamate dehydrogenase. Release of glutamate dehydrogenase from the injured liver reached its maximum 36 to 48 hr after injury, and that of sorbitol dehydrogenase after 20 to 36 hr; only insignificant amounts were released during the second half of the 96 hr observation period. The half life of both enzymes was slightly less in normal animals probably due to a reduced elimination rate, or by insufficient correction of the elimination constant of the damaged animals.

8321 MEASUREMENT OF INTRAHEPATIC SHUNTED BLOOD FLOW BY MEANS OF D-GALACTOSE-1-C^{14} IN EXPERIMENTAL HEPATIC INJURIES. *(E.)* Nakamura, T. (Tohoku U. Sch. Med., Sendai, Japan), S. Nakamura, A. Onodera, T. Aikawa and K. Kera. *Angiology* 21(8): 493-501, 1970.

The extent of intrahepatic shunt in rats with fatty liver produced by feeding of a choline-deficient diet and rats with acute and chronic CCl_4 intoxication was determined by injecting D-galactose-1-C^{14} and calculating the per cent shunt from the radioactivity of the resected liver and that of the injected solution. Rats with hepatic fibrosis showed slight increase (30%), and rats with hepatic cirrhosis showed marked increase in per cent intrahepatic shunt (73%), whereas no significant difference of per cent intrahepatic shunt between rats with hepatic carcinoma, fatty liver, acute CCl_4 intoxication and normal rats (19-25%) was seen when labeled galactose was injected into the mesenteric vein. When the D-galactose-1-C^{14} solution was injected into the hepatic artery, per cent intrahepatic shunt of rats with normal liver or acute hepatic injury was significantly higher than that of the mesenteric venous injection (44 and 48%, resp.) but the difference was not significant in hepatic cirrhosis. Per cent intrahepatic shunt of rats with hepatic carcinoma increased markedly only when the solution was injected into the hepatic artery (58-90%), probably because the cancerous tissue is supplied by the hepatic artery. and because of abnormal galactose metabolism in tumor tissue.

8322 ULTRASTRUCTURAL AND BIOCHEMICAL CHANGES ASSOCIATED WITH PYRROLIZIDINE-INDUCED HEPATIC MEGALOCYTOSIS. *(E.)* Allen, J. R. (Regional Primate Res. Ctr., U. Wisconsin, Madison), L. A. Carsteins, D. H. Norback and P. M. Loft. *Cancer Res* 30(6):1857-1866, 1970.

Rats were fed a diet containing from 0.02 to 0.08% ground *Crotalaria spectabilis* seed (a source of monocrotaline, a pyrrolidizine alkaloid) for 8 months to evaluate the biochemical and ultrastructural changes that occurred in the livers of chronically intoxicated rats that developed megalohepatocytosis. These rats had small irregularly shaped livers with disrupted architectural patterns. Microscopically, the livers were composed primarily of megalohepatocytes 2.5 times the size of the normal hepatocytes, hyperplastic bile ducts, and regenerative modules; the megalohepatocytes contained enlarged, irregularly shaped nuclei and numerous organelle-filled invaginations of the nuclear membrane protruded into the nucleoplasm. Some invaginations separated from the nuclear membrane and formed membrane-enclosed nuclear inclusions, whereas other partially enclosed invaginations resulted in a mixture of nuclear and cytoplasmic constituents. The nucleolar components were abundant and were dispersed throughout the nucleoplasm. Alterations in the cytoplasmic organelles of the megalohepatocytes included a decrease and a morphological modification of the rough endoplasmic reticulum. Lamellar arrays of smooth endoplasmic reticulum filled large portions of the cytoplasm and an increase in the size and distribution of the Golgi complex and a reduction in attached ribosomes and glycogen granules were apparent. The RNA and nitrogen levels of the affected livers were of the same magnitude as the controls, while the DNA was increased to 200%.

8323 ENHANCED TOXICITY OF CARBON TETRACHLORIDE INHALATION AFTER PHENOBARBITAL PRETREATMENT. *(E.)* Lal, H. (Dept. Pharmacol. Toxicol., U. Rhode Island, Kingston), S. K. Puri and G. C. Fuller. *Pharmacol Res Commun* 2(2):143-147, 1970.

The effects of phenobarbital pretreatment (40 mg/kg daily for 4 days i.p.) on the mortality rates due to CCl_4 inhalation and on hepatic metabolism of hexobarbital and hexobarbital narcosis were determined in rats (250-350 g). Pretreatment with phenobarbital resulted in 100% mortality after 36 hr of CCl_4 inhalation compared to 100% mortality in controls only after 48 hr; livers from the treated animals metabolized 5.9 μmoles/g/30 min of hexobarbital, while livers from the controls metabolized only 1.3 μmoles. When SKF525A (50 mg/kg i.p.) was administered to phenobarbital pretreated rats 30 min before exposure to CCl_4 vapors, hexobarbital (80 mg/kg) narcosis was blocked (50 min sleeping time for non-phenobarbital pretreated animals, 130 min for pretreated animals, and 40 min for pretreated animals with SKF525A). The increased mortality with CCl_4 inhalation after phenobarbital (which induces microsomal enzymes) pretreatment and the reduced narcosis after SKF525A (which inhibits drug-metabolizing enzumes) administration suggests that the toxicity of CCl_4 is related to its rate of metabolism by hepatic enzymes.

8324 HEPATIC TOXICITY OF PYRAZINAMIDE. *(Ger.)* Hess, W. (Ctr. Intern. Med., Johann Wolfgang Goethe U. Frankfurt, Germany), H. Jungbluth, R. Kropp and K. Zimmer. *Prax Pneumol* 24(8):486-494, 1970.

The hepatic toxicity of pyrazinamide was investigated in 103 patients with pulmonary disease (62 men, 41 women, aged 11-80), who received a mean dose of 222 g pyrazinamide over an average period of 4 months Elevation of serum transaminase was seen in 13 patients, although other tests, like serum bilirubin, BSP retention, alkaline phosphatase and serum protein fractions did not show indications of hepatic damage. Liver biopsy was performed in 6 of the 13 cases and histological signs of toxic hepatitis were observed in 4 cases. No relation between duration and dosage of pyrazinamide administration, nor to the age of the patients was seen. Only 2 of 12 patients with renal or hepatic disease before treatment showed increased serum transaminase levels during treatment, whereas serum transaminase levels were increased in 33% of the patients with a history of excess alcohol consumption. Cessation of pyrazinamide treatment was followed by normalization of serum transaminase levels in all cases. Pyrazinamide treatment in ambulatory patients with pulmonary tuberculosis should be carried out only in conjunction with frequent serum transaminase determinations.

8325 AUTORADIOGRAPHIC STUDY ON DISTURBANCE OF THE PROTEIN SYNTHESIS IN MOUSE LIVER AFTER CCl_4-INTOXICATION. *(Ger.)* Gerhard, H. (Inst. Med. Radiol., U. Wurzburg, Germany), B. Schultze and W. Maurer. *Virchows Arch Zellpath* 6(1):38-56, 1970.

Inhibition of hepatic protein synthesis from ^{3}H-L-phenylalanine and ^{3}H-L-tyrosine was investigated autoradiographically in female mice after i.p. administration of 0.002-8.0 ml/kg of CCl_4 over a period of 30 min to 47 hr. The degree of inhibition of protein synthesis between 0.002 ml/kg and 0.1 ml/kg was dose-dependent, affecting between 0% and 57% of the centri lobular parenchyma. Maximal inhibition for each dose was noted as soon as 30 min after CCl_4 administration inhibition and histopathological signs of cell damage were reversible. Larger amounts, 0.1 ml/kg to 8.0 ml/kg did not increase the area (57%) affected by loss of protein synthesis, but produced in this area a dose-dependent cell damage (loss of basophilia, fatty degeneration, plasma hyalinization), pyknosis and finally necrosis.

8326 LYMPHOCYTE STIMULATION INDUCED BY HALOTHANE IN PATIENTS WITH HEPATITIS FOLLOWING EXPOSURE TO HALOTHANE. *(E.)* Paronetto, F. (Mt. Sinai Hosp., New York, N. Y.) and H. Popper. *New Eng J Med* 283(6):277-280, 1970.

Incubation of lymphocytes from patients with halothane hepatitis with halothane (dilute preparation) for 3-6 days caused lymphocyte stimulation, as measured by incorporation of ^{3}H-thymidine into the deoxyribonucleic acid of lymphocytes. Lymphocytes of a patient with hepatic damage attributable to methoxyflurane were stimulated by methoxyflurane, but no stimulation was observed in healthy controls, patients with hepatic disease or patients exposed to halothane without liver damage. Preliminary data indicated that sensitization was temporary. Australia antigen was not detected in the sera of the patients, but antimitochondrial antibodies seemed to correlate with lymphocyte stimulation. Stimulation of lymphocytes in the presence of halothane is helpful in the differential diagnosis of viral and halothane hepatitis, and indicates that in some patients, the anesthetic may be a sensitizing agent with a pathogenetic role in the hepatic damage.

8327 5-HYDROXYTRYPTAMINE-INDUCED LESIONS OF THE MOUSE LIVER. *(E.)* Penttila, A. (Dept. Anat., U. Helsinki, Finland). *Pharmacology* (6):321-329, 1970.

The effect of prolonged (60 days) i.p. administration of 5-hydroxytryptamine (40 mg/kg/day) on the morphology of liver cells was studied by light and electron microscopy in 10 adult female mice. After 60 days about 80% of the mice had patchy necrotic liver lesions, mostly at the lower margins of both the liver lobes. Fibrous scar tissue occurred in the center of the lesions and was surrounded by a necrotizing zone in which the cytoplasm of liver cells contained plenty of PAS-reactive material. Small droplets of highly osmiophilic material were accumulated in the cytoplasm of liver cells of the necrotizing zone becoming confluent in lysosome-like bodies and larger aggregates and finally forming fibrous scar areas.

8328 CYTOLOGIC EFFECTS OF RESERPINE ON HEPATOCYTES: AN ULTRASTRUCTURAL STUDY OF DRUG TOXICITY. *(E.)* Winborn, W. B. (U. Texas Med. Sch., San Antonio) and L. L. Seelig, Jr. *Lab Invest* 23(2):216-229, 1970.

Large doses of reserpine (50 mg/kg) resulted in striking cytological alterations in hepatocytes of hamsters as seen by electron microscopy. The most prominent morphologic feature was the appearance of two types of lipid droplets randomly scattered throughout the cytoplasm; one form of these droplets was apparent as a circular profile containing a homogenous material of moderate electron density and the other was evident as a circular profile consisting of an outer electron-dense portion and an inner electron-lucid core. Both types of lipid droplets were separated from the cytoplasmic matrix by a membrane system and were frequently associated with autophagic material. A large increase in the amount of smooth-surfaced endoplasmic reticulum was seen, and the limiting membranes of microbodies were often observed in direct continuity with the membrane system of this agranular endoplasmic reticulum. Mitochondria lacked intramitochondrial granules, appeared enlarged and closely packed together and exhibited bizarre profiles. A decrease in the size of the hepatocytes and in the amount of glycogen were also seen.

8329 CHANGES IN LIVER DISTURBANCE ASSOCIATED WITH LONG-TERM TRANQUILIZING MEDICATION: A FOLLOW-UP STUDY. *(E.)* Bloom, J. B. (VA Neuropsych. Hosp., Pittsburgh, Pa.) and N. Davis. *Dis Nerv Syst* 31(5):309-317, 1970.

8330 EFFECTS OF GLUCOSE ON THE SUBCELLULAR STRUCTURE OF THE RAT LIVER CELLS IN ACUTE ETHIONINE INTOXICATION. *(E.)* Miyai, K. (Banting Inst., U. Toronto, Ontario, Canada), A. N. Raick and A. C. Ritchie. *Lab Invest* 23(3):268-277, 1970.

8331 THE INTERACTION OF COLD ENVIRONMENT AND CARBON TETRACHLORIDE HEPATOTOXICITY IN MICE. *(E.)* Adam, S. E. I. (Dept. Vetr. Path., U. Liverpool, England) and E. Thorpe. *Brit J Exp Path* 51(4):394-403, 1970.

8332 LUPUS ERYTHEMATODES VISCERALIS AND LUPOID HEPATITIS. *(Ger.)* Kettner, W. (Dist. Hosp. Cottbus, Germany). *Deutsch Gesundh* 25(32):1498-1503, 1970.

8333 TETRACYCLINE-ASSOCIATED FATTY LIVER IN THE MALE: REPORT OF AN AUTOPSIED CASE. *(E.)* Robinson, M. (Mt. Sinai Hosp., Miami Beach, Fla.) and A. M. Rywlin. *Amer J Dig Dis* 15(9):857-862, 1970.

8334 HEPATORENAL TOXICITY FROM SNIFFING SPOT-REMOVER (TRICHLOROETHYLENE): REPORT OF TWO CASES. *(E.)* Clearfield, H. (Episcopal Hosp., Philadelphia, Pa.). *Amer J Dig Dis* 15(9):851-856, 1970.

8335 HEPATIC AND RENAL COMPLICATIONS ARISING FROM ACCIDENTAL CARBON TETRACHLORIDE POISONING IN THE HUMAN SUBJECT. *(E.)* Alston, W. C. (Western Infirm., Glasgow, Scotland). *J Clin Path* 23(3):249-253, 1970.

8336 ESSENTUKI HEALTH RESORT TREATMENT OF PATIENTS WITH TOXIC DISEASES OF THE LIVER. *(Rus.)* Konchalovskaya, N. M. (Acad. Med. Sci., Moscow, USSR), A. S. Vishnevsky, A. V. Khodykin, T. B. Popova, Yu. S. Vishnevskaya and K. M. Dobrunov. *Klin Med* 51(3):65-69, 1970.

8337 MORPHOLOGICAL ALTERATIONS IN THE LIVER OF GUINEA PIGS WITH MINOR TUBERCULOUS CHANGES UNDER LONG TERM STREPTOMYCIN. PHTHIVAZID AND PAS MEDICATION. *(Rus.)* Rudaitene, A. P. (Sci. Res. Inst. Tuberculosis, Lituanian SSR, USSR). *Probl Tuberk* 48(4):78-82, 1970.

8338 EFFECT OF RNA ON CONTENT AND RENEWAL OF ATP IN LIVER WITH RADIATION INJURY. *(Ukr.)* Sopin, E. F. (Dept. Biochem., T. H. Shevchenko U., Kiev, Ukrainian SSR, USSR) and B. O. Tsudzevich. *Ukr Biokhim Zh* 42(1):31-34, 1970.

8339 THE EFFECT OF SEVINE IN ANIMAL EXPERIMENTS ON THE FUNCTION AND STRUCTURE OF THE LIVER. *(Rus.)* Kagan, Yu. S. (All Union Sci. Res. Inst. Pesticide Toxicol., Kiev, USSR), G. A. Rodionov, L. Ya. Voronina, L. A. Velichko, O. M. Kulagin and A. D. Peremitina. *Farmakol Toksik* 33(2):219-224, 1970.

8340 ACTION OF 2,4-DINITROPHENOL ON THE CONTENT AND SPECIFIC ACTIVITY OF ACID SOLUBLE NUCLEOTIDES OF THE RAT LIVER. *(Rus.)* Zhivkov, V. I. (Bulgarian Acad. Sci., Sofia), Kh. Chelibonova-Lorer and B. N. Panayotov. *Biokhimiia* 35(3):484-488, 1970.

8341 THE EFFECT OF PROTEIN DEFICIENCY AND MICROSOMAL ENZYME INDUCTION BY DDT AND PHENOBARBITONE ON THE ACUTE TOXICITY OF CHLOROFORM AND A PYRROLIZIDINE ALKALOID, RETROSINE. *(E.)* McLean, A. E. M. (U. Coll. Hosp. Med. Sch., London, England). *Brit J Exp Path* 51(3):317-321, 1970.

8342 ACUTE ALCOHOLIC HEPATITIS: A REVIEW OF 32 CASES. *(E.)* McKell, W. M., Jr. (U. Mississippi Sch. Med., Jackson) and L. O. Mora. *J Mississippi Med Ass* 11(9):477-484, 1970.

8343 CAUSES AND EFFECTS OF ACUTE LIVER DAMAGE: QUADRENNIAL REVIEW. *(E.)* Sherlock, S. (Roy. Free Hosp., London, England). *Scand J Gastroent* 5(suppl. 6):187-202, 1970.

8344 METABOLIC EFFECTS OF HALOTHANE ON THE LIVER. *(E.)* Biebuyck, J. F. (Oxford Med. Sch., England). *Oxford Med Sch Gazz* 23(1):35-36, 1970.

8345 EFFECT OF DIETHYLDITHIOCARBAMATE ON CARBON TETRACHLORIDE HEPATOTOXICITY AND INHIBITION OF MICROSOMAL METABOLISM. *(Ger.)* Lange, P. (Inst. Pharmacol. Toxicol., Humboldt U. Berlin, Germany), D. Kastner and F. Jung. *Acta Biol Med German* 24(4):29-33, 1970.

o P:Secr:Hepatobil (7917) (7920) (7927) (7971)
o Diagproc (8028)
o D:Livbil:C.Hep (8366)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

8346 DETECTION OF A NEW SERUM-ANTIGEN IN THREE EPIDEMICS OF SHORT-INCUBATION HEPATITIS. *(E.)* Del Prete, S. (Inst. Clin. Med., U. Milan, Italy), M. Doglia, A. Ajdukiewicz, R. A. Fox, D. Constantino, A. Graziina, F. J. Dudley and S. Sherlock. *Lancet* 2(7673):579-581, 1970.

Three outbreaks of epidemic (short-incubation) hepatitis have been studied in Italy and England. Sera from the patients in all 3 have been consistently negative for Australia antigen. Using a new antibody, obtained from a multiply-transfused patient, a new antigen has been detected by gel diffusion, and this has been called epidemic-hepatitis-associated antigen. This antigen was found in the sera of 65% of the patients in the 3 epidemics and in 90% of those tested during the first 2 weeks of their illness and disappeared from the serum during convalescence. Epidemic-hepatitis-associated antigen was not found in 2000 control subjects or in 50 patients with various viral illnesses.

8347 FECAL ANTIGEN IN VIRAL HEPATITIS. *(E.)* Ferris, A. A. (Fairfield Hosp., Victoria, Australia), J. Kaldor, I. D. Gust and G. Cross. *Lancet* 2(7666):243-244, 1970.

An antigen has been detected in fecal extracts from 90 out of 220 patients with viral hepatitis and from 5 of 158 patients with other diseases. Single precipitin lines with absorbed rabbit antiserum G2 in a gel-diffusion test were observed with fecal extracts from 41% of patients with viral hepatitis and 3% of non-hepatitis patients. This antigen was present early in the disease and usually disappeared within three weeks of the first appearance of dark urine; it seemed to be particulate and was serologically distinct from Australia antigen.

8348 NEUROLOGICAL SEQUELAE IN PATIENTS WHO BECAME LONG-TERM SURVIVORS AFTER RECOVERING FROM HEPATIC COMA DUE TO VIRUS HEPATITIS FOLLOWING EXCHANGE TRANSFUSIONS. *(E.)* Thomas, E. (Stanley Med. Coll., Madras, India) and K. Natarajan. *Indian Pract* 23(4):259-261, 1970.

Neurological abnormalities encountered in 3 patients in terminal hepatic coma due to virus hepatitis, following recovery from coma were examined. Two of the 3 patients who became long term survivors from hepatic coma due to fulminating virus hepatitis had neurological sequelae; one had transient right-sided hemiplegia for 3 days from which he recovered completely, and the other had peripheral neuropathy with bilateral footdrop and stocking type of sensory loss with only partial recovery at the end of 3 1/2 months. The neurological disorder in the first patient may have been a result of focal cerebral ischemia due to vascular spasm, and in the second patient due to the accumulation of unidentified toxic metabolites such as those which can cause portal systemic encephalopathy itself.

8349 AUTOANTIBODIES AND THE HEPATITIS-ASSOCIATED ANTIGEN IN ACUTE INFECTIVE HEPATITIS. *(E.)* Farrow, L. J. (St. Mary's Hosp., London, England), E. J. Holborow, G. D. Johnson, S. G. Lamb, J. S. Stewart, P. E. Taylor and A. J. Zuckerman. *Brit Med J* 2(5711):693-695, 1970.

Sera from 39 unselected patients with acute infective hepatitis diagnosed on clinical, epidemiological and pathological findings were tested for the presence of autoantibodies by immunofluorescent and immunodiffusion techniques. Smooth muscle antibody was found in 87% and hepatitis-associated antigen in 33% of the patients; the incidence of smooth muscle antibody was highest during the first month after the onset of symptoms, and the antibody was preponderantly IgM at this stage. Smooth muscle antibody and hepatitis-associated antigen occurred independently, and unlike hepatitis-associated antigen, which was strongly associated with possible parenteral exposure to infection, the incidence of smooth muscle antibody was not related to the presumed mode of exposure. The production of smooth muscle antibody seems to be more directly related to liver cell damage than to the presence of hepatitis-associated antigen in the serum.

8350 URINARY EXCRETION OF CORTICOSTEROIDS FOLLOWING HYDROCORTISONE TESTS IN PATIENTS WITH INFECTIOUS HEPATITIS. *(Rus.)* Mateev, A. A. (Vitebsk Med. Inst., USSR). *Ter Arkh* 42(5):15-18, 1970.

8351 RADIOISOTOPE INVESTIGATION OF LIVER FUNCTION IN PATIENTS RECOVERED FROM VIRAL HEPATITIS. *(Rus.)* Soskin, A. M. (Moscow Sci. Res. Inst. Radiol., USSR), G. E. Latsinik and V. I. Zhigileva. *Ter Arkh* 42(5):22-26, 1970.

8352 DISTURBED PIGMENTAL FUNCTION OF THE LIVER AND ENDOCRINE FUNCTION OF THE OVARIES IN INFECTIOUS HEPATITIS. *(Rus.)* Yatsenko, L. A. (Crimean Med. Inst., USSR). *Sovet Med* 33(3):107-110, 1970.

8353 AUSTRALIA ANTIGEN AND VIRAL HEPATITIS. *(Ger.)* Steinruck, H. (Inst. Med. Humboldt U., Berlin, Germany). *Z Aertzl Fortbild* 64(10):481-486, 1970.

8354 LIVER REGENERATION BY SELENIUM TREATMENT OF ANIMALS INFECTED WITH HUMAN HEPATITIS VIRUS. *(Fr.)* Fodor, G. P. (U. Med. Pharm., Tirgu-Mures, Rumania), J. Hirschfeld, A. Abraham and R. Pantea. *Acta Hepatosplen* 17(3):175-183, 1970.

8355 DETOXICATION BY A PREPARATION OF LOW-MOLECULAR POLYVINYL ALCOHOL IN INFECTIOUS HEPATITIS. *(Rus.)* Krylova, O. M. (Leningrad Inst. Hematol., USSR), S. A. Smirnova and I. M. Khlebnikova. *Ter Arkh* 42(5):19-22, 1970.

8356 GENETIC FACTORS IN VIRAL HEPATITIS. *(Fr.)* Chastel, C. (no affil), H. Philibert, J. Bronstein, J. Patacq-Crouzet, A. Bezon and J. Bereni. *Med Trop* 30(3):383-386, 1970.

8357 COMMERCIALLY OBTAINED BLOOD AND SERUM HEPATITIS. *(E.)* Allen, J. G. (Stanford U. Sch. Med., Calif.). *Surg Gynec Obstet* 131(2):277-281, 1970.

8358 BONE MARROW DAMAGE FOLLOWING VIRAL HEPATITIS. *(Ger.)* Wiontzek, H. (St. Hosp. Geesthacht, Netherlands). *Med Welt* 21(30):1354-1358, 1970.

8359 SERUM CHOLINESTERASE (PSUEDOCHOLINESTERASE) IN INFANTILE HEPATITIS. *(It.)* Castello, D. (Pediat. Clin., U. Turin, Italy) and M. T. Norelli. *Minerva Pediat* 22(19):970-975, 1970.

8360 HEPATITIS ASSOCIATED WITH ILLICIT USE OF INTRAVENOUS METHAMPHETAMINE. *(E.)* Davis, L. E. (Ecological Invest. Program, Kansas City, Kansas), G. Kalousek and E. Rubenstein. *Public Health Rep* 85(9):809-813, 1970.

8361 SERUM HEPATITIS. *(Ger.)* Pilchmayr, I. (Surg. Clin. U. Munich, Germany). *Internist Prax* 10(2):259-265, 1970.

8362 THE DIABETES OF VIRAL HEPATITIS: WITH REFERENCE TO TWENTY NEW OBSERVATIONS. *(Fr.)* Fromantin, M. (no affil) and C. Laverdant. *Diabete* 18(2):121-125, 1970.

8363 AUSTRALIA ANTIGEN AND HEPATITIS: A REVIEW. *(E.)* Rongey, K. (St. Louis, Missouri) and A. Grindon. *Missouri Med* 67(9):665-668, 1970.

- o Diagproc (8007) (8035)
- o D:Livbil (8266)
- o D:Livbil:C.Hep (8364) (8366)
- o D:Livbil:Cirrh (8391)

LIVER AND BILIARY TRACT

Chronic Hepatitis

8364 AUSTRALIA ANTIGEN AND AUTOANTIBODIES IN CHRONIC HEPATITIS. *(E.)* Vischer, T. L. (Burger Hosp., Basel, Switzerland). *Brit Med J* 2(5711):695-698, 1970.

The sera of 110 patients with chronic hepatitis and adequate controls were examined for autoantibodies to smooth muscle, mitochondria, and for antinuclear factors by the immunofluorescence method, and for Australia antigen by a modified micro-Ouchterlony immunodiffusion technique. Twelve out of 13 patients with primary biliary cirrhosis had mitochondrial antibodies, 2 had antinuclear factor, and none had Australia antigen in their sera. In chronic aggressive hepatitis 23.5% of the sera contained antinuclear factor, 13% smooth muscle antibodies, 10.5% mitochondrial antibodies, and 22% Australia antigen. Of the 12 patients with chronic persistent hepatitis, 1 had antinuclear factor, 1 smooth muscle antibodies, and 3 Australia antigen. The most striking finding was a mutual exclusion between Australia antigen and mitochondrial and smooth muscle antibodies. None of the 33 patients with 1 or the other form of chronic hepatitis and mitochondrial or smooth muscle antibodies had Australia antigen; 22 out of 77 (28%) patients without other antibodies were positive for Australia antigen.

8365 OPERATIONS ON THE VEGETATIVE NERVOUS SYSTEM IN CHRONIC HEPATITIS AND LIVER CIRRHOSIS IN CHILDREN. *(Rus.)* Doletsky, S. Ya., (M. F. Vladimirskiy Sci. Res. Inst. Clin. Med., Moscow, USSR), V. G. Akopyan, I. I. Kleimenova, V. S. Gruminsky and A. R. Reizis. *Eksp Khir Anest* 15(3):29-36, 1970.

8366 CLINICAL EXPERIENCE WITH HEPAMERZ. *(Ger.)* Baumann, M. (Berchtesgarden Social Security Hosp., Germany). *Z Allgemeinmed* 46(17):895-900, 1970.

8367 CHRONIC NECROTIZING HEPATITIS. *(Ger.)* Selmair, H. (St. Hosp. Kassel, Germany), I. Vido, E. Wildhirt and H. Ortmans. *Deutsch Med Wschr* 95(26):1397-1401, 1970.

8368 LONG TERM THERAPY OF CHRONIC HEPATITIS. *(Ger.)* Becker, K. (1st Med. Clin. U. Hamburg, Germany). *Monatsschr Kinderheilk* 118(8):508-511, 1970.

- o D:Livbil:A.Nonv.Hep (8336)

LIVER AND BILIARY TRACT

Cirrhosis

8369 ZINC AND COLLAGEN CONTENT OF CIRRHOTIC LIVER. *(E.)* Boyett, J. D. (VA Hosp., Portland, Ore.) and J. F. Sullivan. *Amer J Dig Dis* 15(9):797-802, 1970.

Liver samples obtained from 43 consecutive autopsies were analyzed for their content of zinc and collagen nitrogen (as calculated from liver hydroxyproline and nitrogen content). Mean liver zinc was 2.36 and 1.27 μg/mg nitrogen for histologically normal and cirrhotic samples, resp.; collagen nitrogen was 1.67 and 4.26 mg/g wet liver for normal and cirrhotic samples, resp. There was an absolute reduction in zinc content of cirrhotic liver and that this reduction had no relationship to the amount of collagen present; however, a good correlation existed between the amount of zinc/mg nitrogen and the amount of zinc/mg noncollagen nitrogen.

8370 NATURE OF THE HUMORAL AGENT RESPONSIBLE FOR PORTACAVAL SHUNT-RELATED GASTRIC HYPERSECRETION IN MAN. *(E.)* Orloff, M. J. (Sch. Med., U. California, San Diego), A. G. Abbott and H. Rosen. *Amer J Surg* 120(2):237-243, 1970.

Studies of basal gastric acid secretion, Histalog-stimulated acid production, and the acid secretory response to distention of the jejunum with a balloon for 20 minutes were conducted in 5 normal subjects, 10 patients with compensated cirrhosis, and 10 comparable cirrhotic patients with portacaval shunts. Every patient had an actively functioning gastric mucosa which was capable of responding vigorously to humoral stimuli. Balloon distention of the jejunum did not stimulate acid production in normal subjects and unshunted cirrhotics, whereas cirrhotics with portacaval shunts responded to intestinal distention with a prolonged and significant output of acid that averaged more than 8 times that of the unshunted subjects, and was almost as great as that observed previously in tests with intestinal meals. The acid secretory response was distinguished by a delay in development, and persisted long after withdrawal of the stimulus, both of which are characteristic of hormone action. The humoral agent responsible for portacaval shunt-related gastric hypersecretion in man is apparently a hormone of endogenous origin. The role of acid hypersecretion in the alleged clinical association of peptic ulcer and portacaval shunt remains to be determined.

8371 COMPARISON OF FREE PORTAL VENOUS PRESSURE AND WEDGED HEPATIC VENOUS PRESSURE IN PATIENTS WITH CIRRHOSIS OF THE LIVER. *(E.)* Vaillet, A. (St. Luke Hosp., Montreal, Quebec, Canada), J. C. Joly, D. Marleau and P. Lavoie. *Gastroenterology* 59(3):372-375, 1970.

Combined hepatic and umbilicoportal catheterization was performed in 43 compensated cirrhotic patients in order to compare free portal venous pressure and wedged hepatic venous pressure. The umbilicoportal catheter was positioned in the portal vein (41 patients) or the left branch of the portal vein (2 patients). Wedged hepatic venous pressure was equal to free portal venous pressure in 17 patients, and the difference between these two parameters was between 0.5 and 1 mm Hg in 17 other patients. In the other 9 patients, the difference ranged from 1.5 to 4 mm Hg. In patients with cirrhosis, there appears to be a highly significant correlation between wedged hepatic venous pressure and free portal venous pressure.

8372 A VARIANT OF OBSTRUCTIVE BILIARY CIRRHOSIS. *(E.)* MacMahon, H. E. (Tufts-New Eng. Med. Ctr., Boston, Mass.). *Amer J Path* 60(3):371-384, 1970.

A case of obstructive biliary cirrhosis of infancy associated with atresia of the common bile duct was described. Laparotomy performed at 6 wk on a full-term infant weighing 5 lb at birth and who became jaundiced on the second day after birth revealed a complete lack of development of the large collecting bile ducts which were represented by a broad, solid, short fibrous strand. The liver which was normal in size was firm and deeply bile stained. A surgical specimen from the liver margin resembled the histologic picture of obstructive cirrhosis, and the portal areas were enlarged and their bile ducts were distended with bile. An unusual hyperplasia of fibrous tissue which extended from the portal areas into the adjacent liver lobules was found. The clinical course was steadily downhill with elevations of bilirubin levels (both direct and indirect), hepatic enzymes and serum ammonia (terminally, 375 μg/100 ml). The infant, at 8 months of age, showing signs of portal hypertension, experienced vascular collapse and died. At necropsy, the liver was 350 g and was overgrown with fibrous tissue accompanied by a proliferation of small bile ducts or cholangioles, a loss of liver parenchyma and progressive stenosis of the large bile ducts ending in atresia.

8373 ALBUMIN SYNTHESIS IN LIVER SLICES OF CIRRHOTIC RATS. *(E.)* Huberman, A. (Natl. Inst. Nutr., Tlalpan, Mexico) and G. Soberon. *Clin Chim Acta* 29(1):121-127, 1970.

The ability to synthesize albumin was studied in young male rats with moderate liver cirrhosis induced by repeated (10) i.p. injection of CCl_4. After 10 injections of CCl_4, the liver presented the histologic image of cirrhosis (diffuse fibrosis with pseudo-lobule formation). There was an increase of the liver weight/body weight ratio corresponding to cirrhotic hypertrophy. The protein content of the liver was practically unchanged but the DNA content (expressed as μg/mg of protein) was increased (reflecting hepatocyte regeneration and leucocyte infiltration) and there was an important increase in the incorporation of labeled amino acid into soluble protein. Albumin production during incubation (measured by precipation with a specific antibody) increased in the same proportion in normal and in cirrhotic liver slices, and labeled amino acid was incorporated into albumin to the same degree in both normal and cirrhotic liver slices.

8374 CHOLESTEROL LOWERING, FECAL BILE ACID AND STEROL CHANGES DURING NEOMYCIN AND COLCHICINE. *(E.)* Rubulis, A. (Highland Hosp., Rochester, N. Y.), M. Rubert and W. W. Faloon. *Amer J Clin Nutr* 23(9):1251-1259, 1970.

Changes in serum cholesterol, fecal sterols, and bile acids caused by the p.o. administration of neomycin (6 g/day) were studied in 3 obese subjects and 1 hypocholesteremic cirrhotic patient. Four other obese subjects were studied similarly, 2 while they were given oral colchicine (2.4 mg/day) and 2 while receiving combined neomycin and colchicine. Coincident with decreases in serum cholesterol, fecal bile acid and sterol excretion increased during neomycin with reversal of the changes when it was withdrawn. The pattern of fecal excretion was also changed with a predominance of primary bile acid appearing and cholesterol replacing coprostanol during antibiotic administration. Colchicine also increased fecal sterol and bile acids coincident with lowering of serum cholesterol, but serum triglyceride levels varied without relation to drug administration. Combined neomycin and colchicine therapy produced no clear-cut additive effects. A probable common mechanism of cholesterol lowering by neomycin and colchicine may be due to interference with the enterohepatic cycle of bile acids and neutral sterols.

8375 OBSERVATIONS ON THE NITROGEN METABOLISM OF PATIENTS WITH PORTAL CIRRHOSIS. *(E.)* Rudman, D. (Emory U. Sch. Med., Atlanta, Ga.), S. Akgun, J.T. Galambos, A.S. McKinney, A.B. Cullen, G.G. Gerron and C.H. Howard. *Amer J Clin Nutr* 23(9): 1203-1211, 1970.

Nitrogen balance and serum amino acid concentrations were measured in 2 subjects without liver disease and in 6 patients with advanced portal cirrhosis and a history of hepatic coma during alternating periods of 120 g protein and 2 g protein isocaloric (35 kcal/kg day) diets. On the 120 g protein diet, the nonhepatic cases were within ±1 g-day nitrogen balance, due to a markedly lower excretion of urea than the nonhepatic cases. The cirrhotics also showed 2- to 15-fold elevations above normal in fasting serum concentrations of methionine, tyrosine, phenylalanine, and proline while consuming the high protein diet. These abnormalities in the fasting serum amino acid pattern were improved or corrected by 2-10 days of treatment with the 2 g, 35 kcal/kg diet. The serum total α-amino nitrogen concentration, normally 5-7 mg/100 ml, did not increase detectably in the two nonhepatic subjects 2 or 4 hr after a 60 g protein meal, but in the cirrhotic patients this value regularly increased from 8 to 11 mg/100 ml at 2 or 4 hr.

8376 DEVELOPMENT OF EXPERIMENTAL LIVER CIRRHOSIS BY D-GALACTOSAMINE: HISTOLOGICAL, BIOCHEMICAL AND AUTORADIOGRAPHIC STUDIES IN RATS. *(Ger.)* Lesch, R. (Path. Inst. U. Freiburg, Germany), D. Keppler, W. Reutter, J. Rudiger, W. Oehlert and K. Decker. *Virchows Arch Zellpath* 6(1):57-71, 1970.

Chronic progressive hepatitis developing within 6 months to cirrhosis was induced in rats by the i.p. administration of D-galactosamine•HCl (250 mg/kg daily for 8 months). The pathological process started with focal necroses of parenchyma and periportal proliferation of mesenchymal cells and bile ducts. During this initial phase the serum enzyme activities were not considerably elevated. In the stage of cirrhosis the parenchymal alterations were less pronounced while autoradiographic analysis after administration of thymidine-^{3}H showed an increasing proliferation of mesenchymal cells. In contrast to the increased regenerative proliferation of the epithelial cells in the precirrhotic stage, a different intensity of proliferation was observed in parenchymal nodules, indicating a focal alteration of tissue differentiation. After galactosamine administration for 6 months the liver glycogen and glucose contents were reduced (from 191 to 74 and from 6 to 3 μmole/g liver wet wt, resp.) whereas the ATP level was normal. The changes in concentrations of uridine phosphates (UTP, UDP, UMP), UDP-sugars, and of galactosamine metabolites indicated an adaptation of uracil nucleotide and galactosamine metabolism in chronically galactosamine-treated rat liver. The immune suppressive compound azathioprin did not influence the development of liver cirrhosis.

8377 A STUDY OF HEPATIC CIRRHOSIS. *(E.)* Kabrawala, V. N. (M. P. Shah Med. Coll., Jamnagar, India), R. M. Shah and G. G. Oza. *Indian Pract* 23(4):278-282, 1970.

8378 TROPICAL SPLENOMEGALY AND CIRRHOSIS. *(E.)* Mahajan, S. K. (Med. Coll. Rohtak, India). *Punjab Med J* 19(10):343-347, 1970.

8379 TREATMENT OF CIRRHOSIS WITH MASSIVE G. I. BLEEDING. *(E.)* Egoville, J. W. (Philadelphia, Pa.). *Abdom Surg* 12(9):147-149, 1970.

8380 HEPATIC CIRRHOSIS WITH POST-SHUNT MYELOPATHY. *(E.)* Bechar, M. (Tel Aviv U. Med. Sch., Israel), M. Freud, E. Kott, I. Kott, H. Kravvic J. Stern, U. Sandbank and B. Bornstein. *J Neurol Sci* 11(2):101-107, 1970.

8381 ABNORMAL METABOLISM OF SECONDARY BILE ACIDS IN PATIENTS WITH CIRRHOSIS. *(E.)* Vlahcevic Z. R. (Med. Coll. Virginia, Richmond), I. Buhac, C. C. Bell, Jr. and L. Swell. *Gut* 11(5):420-422, 1970.

8382 STUDY ON THE TOPOGRAPHY AND HISTOCHEMISTRY OF OXIDATIVE ENZYMES IN THIOACETAMIDE-INDUCED LIVER CIRRHOSIS IN MICE. *(Ger.)* Wohlrab, F. (Path. Inst., Karl Marx U., Leipzig, Germany) and C. Bienick. *Exp Path* 9(2-3):101-119, 1970.

8383 PLASMA ESTROGENS IN GYNECOMASTIAS AND HEPATOPATHIES. *(Fr.)* Cedard, L. (Hosp. Cochin, Paris, France), A. Mosse and H. P. Klotz. *Ann Endocr* 31(3):453-458, 1970.

384 ETIOLOGY OF CIRRHOSIS OF THE LIVER. *(E.)* (anon) *J Indian Med Ass* 54(7):331-333, 970.

385 HAZARDS IN UMBILICAL VEIN CATHETERIZATION IN THE CIRRHOTIC PATIENT. *(E.)* Silva, Y. . (Wayne St. U., Sch. Med., Detroit, Mich.). *Surg ynec Obstet* 131(3):532-533, 1970.

386 CURRENT CONCEPTS IN CIRRHOSIS: QUADRENNIAL REVIEW. *(E.)* Popper, H. (Mt. Sinai Sch. ed., City U., New York, N. Y.) and W. Orr. *Scand J astroent* 5(suppl. 6):203-222, 1970.

387 IMMUNOLOGICAL AND HISTOLOGICAL STUDIES IN PRIMARY BILIARY CIRRHOSIS. *(E.)* Scheuer, . J. (Roy. Free Hosp., London, England), S. adziyannis, T. Feizi, R. Naccarato, D. Doniach and . Sherlock. *J Clin Path* 23(2):95-98, 1970.

388 CYTOCHEMICAL STUDY OF LIVER CELL ENZYMES IN CHILDREN. *(Rus.)* Kolokolov, A. R. (N. . Pirogov Med. Inst., Moscow, USSR). *Lab Delo* 5):272-275, 1970.

389 BLOOD CLOTTING FACTORS IN THE ASSESSMENT OF HEPATIC PROTEIN SYNTHESIS IN CASE OF ARENCHYMAL DAMAGE. *(Ger.)* Esser, G. (Surg. U. Clin. olyclin., Bonn, Germany), H. Egli and H. Kalinke. *cta Hepatosplen* 17(3):159-165, 1970.

390 EFFECT OF AN ORNITHINE-ASPARTATE MIXTURE ON ARTERIAL AND VENOUS BLOOD AMMONIA LEVELS N PATIENTS WITH LIVER CIRRHOSIS. *(Ger.)* Schmitt, . (Med. U. Clin. Wurzburg, Germany) and A. Ziegler. *ed Welt* 21(30):1361-1367, 1970.

8391 POSTHEPATITIC CIRRHOSIS. *(Ger.)* John, H. D. (St. Hosp. Kassel, Germany) and W. Wepler. *Deutsch Med Wschr* 95(26):1401-1404, 1970.

8392 LIVER CIRRHOSIS: SYMPTOMATOLOGY AND THERAPY. *(Ger.)* Pfleiderer, T. (Med. U. Clin. Heidelberg, Germany). *Wien Med Wschr* 120(38):635-640, 1970.

8393 CIRRHOSIS OF THE LIVER: STUDIES ON CORRELATION OF CLINICAL, BIOCHEMICAL, AND HISTOLOGICAL CHANGES WITH SPECIAL REFERENCE TO HEPATIC INSUFFICIENCY. *(E.)* Dasgupta, M. (Ramakrishnan Mission Seva Pratishthan, India) and A. B. Mukerjee. *J Indian Med Ass* 54(7):299-309, 1970.

8394 ENTEROHEPATIC CIRCULATION AND ERYTHROCYTE LIFE EXPECTANCY IN PATIENTS WITH LIVER CIRRHOSIS. *(Ger.)* Paumgartner, G. (2nd Med. U. Clin., Vienna, Austria), H. Richter, H. Brunner, P. Lauringer and G. Grabner. *Wien Z Inn Med* 51(6):278-280, 1970.

o P:Absorp (7850)
o Diagproc (8016)
o D:Livbil (8266)
o D:Livbil:A.Nonv.Hep (8321)
o D:Livbil:C.Hep (8364) 8365)
o Gen:Parasit (8492)

LIVER AND BILIARY TRACT

Gallbladder and Biliary Tract Diseases

395 STUDIES OF BILE AS A SUSPENDING MEDIUM AND ITS RELATIONSHIP TO GALLSTONE FORMATION. *E.)* Ostrowitz, A. (St. U. New York, Downstate Med. tr., Brooklyn) and B. Gardner. *Surgery* 68(2):329-33, 1970.

he stability of bile suspensions in relation to allstone formation was studied by measuring the zeta potential (Helmholtz-Smoluchowski formula) of human, rabbit, and dog bile using a standard particle, minusil. In human and rabbit bile, zeta potential were close to zero until 1:4 dilutions were made with isotonic sucrose; then the average potentials (mv) were -16.5 and 13.5, resp. Dog bile was determined undiluted and showed an average potential of -41.0 mv. Heparin (100 U) added to the human bile permitted the use of less diluted bile (1:2) and showed increased zeta potential (-31.0). Florantyrone (Zanchol) reduced the viscosity of the human bile and changed its color but did not affect the zeta potential of the suspended particles. The zeta potential of gallstones (dried and ground) obtained from 5 patients at operation was similar to the results obtained with minusil particles (range of -7 to -20 for the gallstones compared to -9.4 to -28.7 mv for the standard particles) and falls into the range where agglomeration occurs (-20 to -10 mv).

8396 THE PROTEINS OF HUMAN GALLBLADDER BILE WITH AND WITHOUT GALLSTONES. *(E.)* Englert, E., Jr. (U. Utah Med. Ctr., Salt Lake City). *Clin Chim Acta* 29(2):319-331, 1970.

The proteins in seventy-four human gallbladder bile samples were analyzed by techniques of disc-gel electrophoresis combined with immunodiffusion and standard gel-immunoelectrophoresis, employing antiserum to human serum proteins and antisera against normal and against stone-containing human gallbladder bile. Numbers of proteins averaged 6 to 8/sample with a range up to 16; albumin and pigment were commonest and greatest in amount. Serum proteins were identified immunochemically and averaged 4 to 6/sample with a range up to 13. Bile-specific protein was demonstrated by: (a) quantitatively more proteins by chemical staining than by reaction with antiserum to human serum; (b) quantitatively more reactions with anti-bile than with anti-serum antisera; (c) reactions of non-identity along the electrophoretic migration pathway; and (d) immunoreactions to anti-bile-antiserum-absorbed-with-whole-serum on combined disc electrophoresis-immunodiffusion, standard immunoelectrophoresis and Ouchterlony immunodiffusion. One to 4 specific proteins were demonstrated in from 8% to 95% of bile samples tested by any one of these methods. These proteins occurred preponderantly in pigment-prealbumin and α_1-globulin zones of standard immunoelectrophoresis and in post-albumin and pre-stacking gel zones of disc electrophoresis. Evidence for a difference in specific proteins between normal and stone bile was obtained when differences were demonstrated beyween anti-normal-bile and anti-stone-bile antisera. The presence of a "protective" protein in normal bile which is missing in stone bile or the presence of an "abnormal" protein in stone bile may contribute to gallstone formation.

8397 VERY HIGH LEVELS OF SGOT AND LDH IN PATIENTS WITH EXTRAHEPATIC BILIARY TRACT OBSTRUCTION. *(E.)* Ginsberg, A. L. (Walter Reed Army Inst. Res., Washington, D.C.). *Amer J Dig Dis* 15(9):803-807, 1970.

Three cases of extrahepatic biliary disease with transaminase levels exceeding 1000 mU/ml and with minimal morphologic evidence of liver damage were reported. Very high levels of SGOT (1710, 2450 and >1250 mU/ml) and lactate dehydrogenase (1275, 1740 and 1300 mU/ml) were found in these patients with extrahepatic obstruction due to gallstones (the diagnoses were established at operation, and viral hepatitis was ruled out by liver biopsy). Extrahepatic biliary obstruction apparently can produce very high SGOT and lactate dehydrogenase levels in the absence of hepatocellular necrosis.

8398 BIOCHEMICAL AND HISTOCHEMICAL STUDY ON FATTY ACID-CALCIUM GALLSTONES. *(E.)* Sanjo, T. (Tohoku U. Sch. Med., Sendai, Japan). *Tohoku J Exp Med* 101(3):237-249, 1970.

Chemical, mineralogical and histochemical investigations of fatty acid-calcium stones were carried out on gallstones from 3 patients. Systematic chemical analysis, infrared spectroscopy and gas chromatography revealed that the predominant fatty acid in these stones was palmitic acid; small amounts of stearic acid and oleic acid were also detected. Fatty acid-calcium gallstones showed a laminated structure characterized by eccentrically arranged layers; examination under polarized light revealed fatty acid-calcium crystals between the layers of bile pigment particles which extended outwards in a fan-shape. Histochemical examination revealed the presence of diffuse networks of acid mucopolysaccharides containing sulfated radicals in fatty acid-calcium stones, suggesting that these substances played an important role in holding crystals and particles together as bridges among other components of the stones. Severe infection of the biliary tract, release of fatty acid-calcium into the bile by enzymes and concurrent formation of composite materials by acid mucopolysaccharide seem to be essential in the formation of gallstones of this type.

8399 EMPHYSEMATOUS CHOLECYSTITIS. *(Ger.)* Keller, H. L. (Tech. Coll. Munich, Germany) and M. Ferstl. *Z Gastroent* 8(4):227-229, 1970.

8400 CHOLELITHIASIS: A CLINICAL AND DIETARY SURVEY. *(E.)* Wheeler, M. (Dept. Surg., U. Melbourne, Australia), L. L. Hills and B. Laby. *Gut* 11(5):430-437, 1970.

8401 PRIMARY SCLEROSING CHOLANGITIS: COMPLETE GROSS AND HISTOLOGIC REVERSAL AFTER LONG-TERM STEROID THERAPY. *(E.)* Myers, R. N. (Jefferson Med. Coll., Philadelphia, Pa.), J. H. Cooper and N. Padis. *Amer J Gastroent* 53(6):527-538, 1970.

8402 CARCINOMA OF THE GALLBLADDER AND OF THE EXTRAHEPATIC BILE DUCTS EXCLUSIVE OF THE AMPULLA. *(E.)* McLaughlin, C. W. (U. Nebraska Coll. Med., Omaha) and J. D. Coe. *Nebraska Med J* 55(9):524-527, 1970.

8403 EXPERIMENTAL REPLACEMENT OF THE COMMON BIL DUCT WITH AN AUTOLOGOUS VENOUS PROSTHESIS: TECHNIQUE AND RESULTS. *(It.)* Nasta, A. G. (Dept. Clin. Surg., Surg. Ther., U. Genoa, Italy), A. Calcagno, G. Sorice, R. Bernardini, E. Paolini and C. Berretti. *Minerva Chir* 25(15):1054-1063, 1970.

8404 MICROSURGERY OF THE COMMON BILE DUCT: AN EXPERIMENTAL AND CLINICAL STUDY. *(E.)* Rand, R. W. (Dept. Surg., U. California, Los Angeles), J. A. Cannon and R. S. Rodriguez. *Amer J Surg* 120(2):215-221, 1970.

8405 DOUBLE GALL BLADDER: REPORT OF A CASE REVIEW. *(E.)* Kazmers, N. (Kelsey Mem. Hosp., Lakeview, Michigan). *Abdom Surg* 12(9):158-161, 1970.

8406 CYTOCHEMICAL STUDIES OF THE GALLBLADDERS IN CHOLELITHIASIS AND CHOLEDOCHOLITHIASIS. *(E.)* Jonek, J. (Silesian Acad. Med., Zabrze-Rokitnica, Poland), C. Sadlinski, Z. Olkowski and M. Martula. *Exp Path* 4(4):284-290, 1970.

8407 CHANGES IN THE LIVER AND BILE DUCTS IN EXPERIMENTAL ENZYMATIC CHOLECYSTOPANCREATITIS. *(Rus.)* Fedjushina, N. A. (Kemerovo Med. Inst., USSR) and G. A. Samodumova. *Vestn Khir* 104(3):122-124, 1970.

8408 CANCER OF THE GALLBLADDER: ALTERATIONS OF GALLBLADDER EPITHELIUM. *(Rus.)* Derizhanova, I. S. (Med. Inst. Rostov, USSR). *Vop Onkol* 16(4):67-71, 1970.

8409 SURGICAL TREATMENT OF CICATRICIAL STENOSES OF BILE DUCTS. *(Rus.)* Topchiashvili, Z. A. (Botkin Hosp. Moscow, USSR). *Klin Khir* (2):18-23, 1970.

8410 DISORDERS OF WATER-ELECTROLYTE BALANCE IN DIFFERENT FORMS OF CHOLECYSTITIS BEFORE AND AFTER SURGICAL TREATMENT. *(Rus.)* Girlia, V. I. (Odessa Med. Inst., USSR). *Vrach Delo* (4):121-124, 1970.

8411 CHOLECYSTODUODENAL AND CHOLECYSTOCOLONIC FISTULA: REPORT OF A CASE AND REVIEW OF THE LITERATURE. *(E.)* Birnbaum, J. J. (VA Hosp., Bronx, N. Y.) and S. H. Tolins. *Mount Sinai J Med* 37(5):625-631, 1970.

8412 CHOLECYSTOCOLONIC FISTULA ASSOCIATED WITH MALABSORPTION. *(E.)* Augur, N. A., Jr. (U. Michigan Med. Ctr., Ann Arbor) and W. A. Gracie, Jr. *Amer J Gastroent* 53(6):558-563, 1970.

8413 SURGERY OF BILIARY TRACT IN SOUTH VIETNAM. *(Fr.)* Caron, J. J. (Grall Hosp., Saigon, Vietnam), R. Cosson, R. Ollivier and J. Garnier. *Med Trop* 30(3):363-382, 1970.

8414 OBSTRUCTIVE JAUNDICE OF UNUSUAL ETIOLOGY. *(Ger.)* Frank, H. (Sophien Hosp., Vienna, Austria). *Wien Z Inn Med* 51(6):289-290, 1970.

8415 CHOLELITHIASIS IN CHILDHOOD. *(E.)* Corbett, J. J. (Mem. Hosp., Casper, Wyo.) and W. B. Watson. *Rocky Mountain Med J* 67(7):25-28, 1970.

8416 THE INFLUENCE OF VAGOTOMY ON THE NORMAL AND DISEASED GALLBLADDER. *(E.)* Schein, C. J. (Montefiore Hosp., Bronx, N. Y.) and M. L. Gliedman. *Digestion* 3(4):243-250, 1970.

8417 SPONTANEOUS EXTERNAL BILIARY FISTULA. *(E.)* Fitchett, C. W. (Norfold, Va.). *Virginia Med Month* 97(9):538-543, 1970.

8418 AN EXTRAPERITONEAL APPROACH TO REMOVE A MISSED COMMON BILE DUCT STONE. *(E.)* Ong, G. B. (Dept. Surg., U. Hong Kong). *J Roy Coll Surg Edinb* 15(4):234-235, 1970.

8419 ACUTE SUPPURATIVE CHOLANGITIS, A MEDICAL AND SURGICAL EMERGENCY: A REVIEW OF TEN YEARS EXPERIENCE EMPHASIZING EARLY RECOGNITION. *(E.)* Andrew, D. J. (Honolulu, Hawaii) and S. E. Johnson. *Amer J Gastroent* 54(2):141-154, 1970.

o P:Secr:Hepatobil (7894) (7901) (7930)
o Diagproc (8004) (8018) (8031) (8036) (8041) (8047)
o D:Stomduo (8097)
o D:S.Intest (8150)
o D:Pancreas:Pancreat (8254)
o D:Livbil (8266) (8288) (8312)
o D:Livbil:Cirrh (8372)
o D:Gen:Parasit (8495)

8420 SELECTIVE ARTERIAL DRUG INFUSIONS IN THE TREATMENT OF ACUTE GASTROINTESTINAL BLEEDING. *(E.)* Rosch, J. (U. Oregon Med. Sch., Portland), R. K. Gray, J. H. Grollman, G. Ross, R. J. Steckel and M. Weiner. *Gastroenterology* 59(3):341-349, 1970.

Acute gastrointestinal bleeding was treated by selective arterial infusions of vasoconstrictors. The effects of selective infusions of a combination of epinephrine (3.8 μg/min) and propranolol (3 ng/min) and of pitressin (0.3-4 U/min) into the superior mesenteric artery were explored first in 12 dogs. Subsequently, 5 patients with massive acute gastrointestinal bleeding were treated successfully by selective arterial infusions of propranolol (5 mg/2 min) and epinephrine (4-8 μg/min).

8421 GLOVE STARCH GRANULOMATOUS PERITONITIS. *(E.)* Taft, D. A. (Mason Clin., Seattle, Wash.), J. T. Lasersohn and L. D. Hill. *Amer J Surg* 120(2):231-236, 1970.

Clinical manifestations, operative and pathologic findings in a recent epidemic of glove starch granulomatous peritonitis due to rice starch were described. Characteristically, severe abdominal pain developed 2 to 6 weeks postoperatively and was sometimes accompanied by fever, leucocytosis, nausea and vomiting. Examination of the abdominal cavity revealed ascites, dense fibrous adhesions, and starch-filled miliary nodules, while microscopic examination revealed a foreign body-type granulomatous reaction with foamy cytoplasmic histiocytes, multinucleated giant cells, eosinophils, polymorphonuclear leucocytes, and lymphocytes. Steroid treatment assisted the recovery; meticulous removal of all powder from surgical gloves and equipment is imperative to prevent this problem.

8422 IMMUNITY IN EXPERIMENTAL SALMONELLOSIS: I. PROTECTION INDUCED BY ROUGH MUTANTS OF SALMONELLA TYPHIRMURIUM. *(E.)* Germanier, R. (Swiss Serum Vaccine Inst., Berne). *Infect Immun* 2(3):309-315, 1970.

Different rough mutants of *Salmonella typhimurium* were tested to determine their virulence and immunizing capacity when used as live vaccines for mice. All uridine diphosphate-galactose-4-epimeraseless mutants tested were much more potent immunizing agents than any other mutants. This capacity was not correlated with virulence or complexity of cell wall polysaccharide. For good protection, persistence of the rough strains *in vivo* was essential, but the protection lasted longer (4 weeks) than the period during which bacteria were demonstrable in the liver and spleen of the mice. The outstanding immunizing capacity of the epimeraseless mutants was apparently not dependent on the persistence of viable bacteria in the mouse, but may be related to the manner in which lipopolysaccharide synthesis is blocked in challenge organisms.

8423 A SURVEY OF INFANTILE GASTROENTERITIS. *(E.)* Ironside, A. G. (Monsall Hosp., Manchester, England), A. F. Tuxford and B. Heyworth. *Brit Med J* 3(5713):20-24, 1970.

The most common biochemical abnormality found in 339 cases of infantile gastroenteritis accompanied by dehydration was hypernatremia, sometimes with metabolic acidosis. A higher incidence of dehydration was found in the patients who had received p.o. glucose fluids before admission. Enteropathic *E. coli* were isolated from the feces of 16% of the cases; associated infections, especially of the respiratory tract, were common. Treatment was aimed at the restoration of fluid and electrolyte balance with p.o. fluids, though i.v. fluids were used in the most severely dehydrated cases. Recovery was complete in 320 cases and a further 14 cases were discharged as carriers of enteropathic *E. coli;* 5 deaths, 3 immediately after admission, occurred in the series.

8424 THE LOCATION OF *ESCHERICHIA COLI* IN THE PIG INTESTINE. *(E.)* Arbuckle, J. B. R. (Roy. Vetr. Coll., Hertfordshire, England). *J Med Microbiol* 3(2):333-340, 1970.

The localization of enteropathogenic strains of *Escherichia coli* in the porcine intestine of naturally occurring and experimentally reproduced cases of *E. coli* diarrhea was studied mainly by fluorescent staining techniques. Three different enteropathogenic strains were found on villi of the small intestine, but only small numbers of these bacteria were found on the colonic mucosa except when they were contiguous with the mass of bacteria in the lumen. A non-enteropathogenic strain of *E. coli* was found on villi of the small intestine in small numbers. Coliform attachment to villi was found to be most marked when diarrhea was clinically well established, but such attachment was also sometimes observed during the early clinical stages of diarrhea. Adhesion of *E. coli* to small-intestinal villi appears to be a significant lesion of porcine diarrhea associated with enteropathogenic strains of *E. coli*.

8425 CENTRAL VENOUS PRESSURE IN CLINICAL MANAGEMENT OF ACUTE GASTROINTESTINAL BLEEDING. *(E.)* Northfield, T. C. (Guy's Hosp., London, England) and T. Smith. *Lancet* 2(7673):584-586, 1970.

Central venous pressure, red-blood-cell volume, blood-volume, and fecal blood-loss were determined in 23 patients with acute upper gastrointestinal tract bleeding. In 13 patients transfusion to a normal central venous pressure (5 cm water) brought the patient's blood-volume to a value within the normal range in 95% of cases. All of 6 patients having an initial transfusion requirement, based on central venous pressure measurements, of more than 6 pints of blood subsequently rebled. Of 12 patients having a definite rebleed during the course of central venous pressure measurements, as demonstrated by a fall in red-blood-cell volume together with abnormal fecal blood-loss, 10 showed a rapid fall in central venous pressure to zero, but only 6 had a hematemesis; of the 6 patients not having a hematemesis, only one had an early change in pulse-rate or blood-pressure. Central venous pressure can be useful in assessing transfusion requirements, recurrent hemorrhage probability, and in early detection of recurrent hemorrhage.

8426 THE EFFECT OF REFEEDING ON PANCREATIC EXOCRINE FUNCTION IN MARASMIC INFANTS. *(E.)* Solimano, G. (Hosp. Roberto Del Rio, Santiago, Chile), O. Danus, A. M. Urbina and I. Valenzuela. *J Pediat* 77(2):334-337, 1970.

8427 NONATHEROMATOUS STENOSES AND COMPRESSIONS OF THE CELIAC AXIS. *(Fr.)* Olivier, Cl. (Hotel-Dieu Hosp., Paris, France), R. Rettori and G. Di Maria. *Chirurgie* 96(7):471-482, 1970.

8428 CONTROL OF HEPATIC VENOUS BLEEDING BY TRANSVENOUS BALLOON CATHETER. *(E.)* Doty, D. B. (Walter Reed Army Med. Ctr., Washington, D. C.) and I. R. Berman. *Surg Gynec Obstet* 131(3):449-452, 1970.

8429 THE USE OF LEUCOVORIN ORALLY IN NORMAL AND LEUKEMIC L1210 MICE TO PREVENT THE TOXICITY AND GASTROINTESTINAL LESIONS CAUSED BY HIGH DOSES OF METHOTREXATE. *(E.)* Sandberg, J. S. (Natl. Cancer Inst., Bethesda, Md.) and A. Goldin. *Cancer Res* 30(5):1276-1280, 1970.

8430 INFECTION AND FAILURE OF PORTACAVAL ANASTOMOSES. *(E.)* Hellstrom, H. R. (Dept. Path., U. Pittsburgh, Pa.) and F. C. Jackson. *Surg Gynec Obstet* 131(2):201-205, 1970.

8431 STENOSES AND OBSTRUCTIONS OF THE LARGE VISCERAL ARTERIES. *(Ger.)* Brucke, P. (1st Surg. U. Clin. Vienna, Austria), J. Funovic, F. Piza and H. Pokieser. *Wien Z Inn Med* 51(6):280-288, 1970.

8432 GASTROINTESTINAL DISEASE IN SJOGREN'S SYNDROME. *(E.)* Naiken, V. S. (Albert Einstein Med. Ctr., Philadelphia, Pa.) and R. Rachman. *J Albert Einstein Med Ctr* 18(2):82-86, 1970.

8433 NEWER STUDIES IN THE ZOLLINGER-ELLISON SYNDROME. *(E.)* Passaro, E., Jr. (VA Ctr. Wadsworth Hosp., Los Angeles, Calif.), N. Basso, R. E. Sanchez and H. E. Gordon. *Amer J Surg* 120(2):138-143, 1970.

8434 A FATAL COMPLICATION OF HYPERALIMENTATION: A CASE REPORT. *(E.)* Raffensperger, J. G. (Cook Cty. Child. Hosp., Chicago, Ill.) and M. L. Ramenofsky. *Surgery* 68(2):393-394, 1970.

8435 INFANTILE GASTROENTERITIS. *(E.)* (anon) *Brit Med J* 3(5713):2-3, 1970.

8436 CHEMOTHERAPY OF GASTROINTESTINAL CANCER. *(E.)* Nelson, R. S. (M.D. Anderson Hosp. Tumor Inst., Houston, Texas) and F. L. Lanza. *Adom Surg* 12(9):150-155, 1970.

8437 NEONATAL GUT INFARCTION. *(E.)* De Sa, D. J. (Radcliffe Infirm., Oxford, England), E. S. Mucklow and M. H. Gough. *J Pediat Surg* 5(4):454-459, 1970.

8438 THE GENERAL SURGEON'S APPROACH TO ABDOMINAL PAIN OF OBSCURE ORIGIN. *(E.)* White, T. T. (Swedish Hosp. Med. Ctr., Seattle, Wash.). *Northwest Med* 69(9):669-672, 1970.

8439 EPIDEMIOLOGY OF SALMONELLOSIS IN KINSHASA: THE ROLE OF HEALTHY CARRIERS AND OF FOOD PRODUCTS. *(Fr.)* Krubwa, F. (St. Rafael Acad. Hosp., Louvain, Belgium), E. Van Oye, F. Gatti and J. Vandepitte. *Ann Soc Belg Med Trop* 50(3):319-338, 1970.

8440 POTASSIUM THERAPY AND GASTRO-INTESTINAL LESIONS. *(E.)* Emerson, D. N. (Mead Johnson Res. Ctr., Evansville, Ind.). *Rhode Island Med J* 53(7):378-381,408, 1970.

8441 "TURNED OFF" BLEEDERS. *(E.)* Donaldson, R. M., Jr. (U. Hosp., Boston, Mass.). *Gastroenterology* 59(3):477-478, 1970.

8442 NONSPECIFIC DIARRHEA IN A PEDIATRIC PRACTICE. *(E.)* Rosenberg, P. (Albert Einstein Med. Ctr., Philadelphia, Pa.). *Clin Med* 77(8):29-32, 1970.

8443 COMBINATION CHEMOTHERAPY IN GASTROINTESTINAL CANCER. *(E.)* Reitemeier, R. J. (Mayo Clin., Rochester, Minn.), C. G. Moertel and R. G. Hahn. *Cancer Res* 30(5):1425-1428, 1970.

8444 MESENTERIC INFARCTION. *(E.)* Nathan, H. (Albert Einstein Coll. Med., New York, N. Y.), R. Bernstein and C. Blatt. *Amer J Gastroent* 53(6):539-551, 1970.

8445 STUDIES ON ACUTE MESENTERIC INFARCTION. *(E.)* Carey, J. P. (Dept. Surg., U. California, Irvine), E. A. Stemmer and J. E. Connolly. *Amer J Gastroent* 53(6):552-557, 1970.

8446 FUNCTIONAL GASTROINTESTINAL DISEASE IN THE AGED. *(E.)* Sklar, M. (Wayne State U. Sch. Med., Detroit, Mich.). *Amer J Gastroent* 53(6):570-575, 1970.

8447 LOW PROTEIN INTAKE AND RESPONSE TO *ESCHERICHIA COLI* 055 INFECTION IN PATAS MONKEYS. *(E.)* Felsenfeld, O. (Tulane U. Delta Primate Ctr., Covington, La.), R. H. Wolf, R. B. Brannon and W. E. Greer. *Amer J Dig Dis* 15(9):819-833, 1970.

8448 ENTERIC DUPLICATIONS IN INFANCY AND CHILDHOOD: AN 18-YEAR REVIEW. *(E.)* Clatworthy, H. W., Jr. (Ohio St. U. Sch. Med., Columbus), J. L. Grosfeld and J. A. O'Neill, Jr. *Ann Surg* 172(1):83-90, 1970.

8449 COAGULATION DEFECTS IN UNDIAGNOSED RECURRENT GASTROINTESTINAL BLEEDING. *(E.)* Toskes, P. P. (U. Maryland Sch. Med., Baltimore), G. M. Wagger, H. F. Raskin and S. Attar. *Ann Surg* 172(1):98-108, 1970.

8450 DELIBERATE LIGATION OF HEPATIC ARTERY. *(Fr.)* Couinaud, C. (Hosp. Corentin-Celton, Molineaux, France), Juin and C. Weinfeld. *Chirurgie* 96(7):494-499, 1970.

8451 STENOSIS OF CELIAC AXIS. *(Fr.)* Leger, E. (Hosp. Cochin, Paris, France), R. Viguie, P. Moulle and T. Dentan. *Chirurgie* 96(7):467-470, 1970.

8452 EXTRINSIC STENOSIS OF CELIAC AXIS. *(Fr.)* Cormier, J. M. (Hosp. St. Joseph, Paris, France) and P. De La Fontaine. *Chirurgie* 96(7):453-456, 1970.

8453 CHRONIC STENOSIS OF CELIAC AXIS. *(Fr.)* Hivet, M. (Hosp. St. Antoine, Paris, France), B. Lagadec and J. Poilleux. *Chirurgie* 96(7):483-486, 1970.

8454 DYSENTERY IN THE EUROPEAN PART OF THE USSR: I. ANNUAL CHANGES OF DYSENTERY INCIDENCE IN 1955-1966. *(Rus.)* Krasheninnikov, O. A. (Central Sci. Res. Inst. Epidemiology, USSR). *Zh Mikrobiol* 47(3):25-31, 1970.

8455 METCLOPRAMIDE IN THE TREATMENT OF GASTROINTESTINAL DISORDERS. *(Fr.)* Stanescu, M. (S. J. Cantacuzino Clin. Intern. Med., Bucarest, Rumania), C. Petrescu, A. Belchija and I. B. Iamandescu. *J Med* 141(19):771-780, 1970.

8456 MESENTERIC VEIN INFARCT: EXTENDED RESECTION OF SMALL INTESTINE. *(Fr.)* Quandalle, P. (West Surg. Clin., France) and J. P. Capoen. *Lille Med* 15(3):491-494, 1970.

8457 GASTROPULGITE MEDICATION IN 65 PATIENTS WITH UPPER GASTROINTESTINAL TRACT DISEASES. *(Fr.)* Bel, A. (Red Cross Hosp., Lyon, France), G. Proni, A. Rubet and M. Girard. *Therapeutique* 46(h.s.):39-46, 1970.

8458 DIAGNOSIS AND MANAGEMENT OF GASTROINTESTINAL HEMORRHAGE. *(Ger.)* Liebeskind, R. (St. Hosp. Prenzlauer, Berlin, Germany). *Z Aertzl Fortbild* 64(10):487-493, 1970.

8459 CHROMIUM ENTEROPATHY. *(Ger.)* Wohlenberg, H. (Med. U. Clin. Heidelberg, Germany) and J. Lenhard. *Deutsch Med Wschr* 95(22):1224-1226, 1970.

8460 INTESTINAL LYMPHANGIECTASIS. *(Ger.)* Peller, P. (Child. Clin. U. Munich, Germany), J. Schaub, H. Zobel and H. J. Bremer. *Deutsch Med Wschr* 95(22):1219-1224, 1970.

8461 INVASIVENESS OF *SALMONELLA* ADMINISTERED ORALLY TO COLD EXPOSED MICE. *(E.)* Previte, J. J. (U. S. Army Res. Inst. Environ. Med., Natick, Mass.), J. C. Alden, M. Gagliardi, M. William and J. Shampine. *Infect Immun* 2(3):274-278, 1970.

8462 BLUNT ABDOMINAL TRAUMA. *(E.)* Menick, F. (United Hosp., Port Chester, N. Y.) and M. C. C. Kim. *New York J Med* 70(14):1897-1902, 1970.

8463 EPIDEMIC SHIGA DYSENTERY IN CENTRAL AMERICA. *(E.)* Levine, M. M. (U. Maryland Sch. Med., Baltimore), H. L. DuPont, S. B. Formal and E. J. Gangarosa. *Lancet* 2(7673):607-608, 1970.

8464 PERSISTENCE OF LYMPHATICO-VENOUS SHUNTS AT THE LEVEL OF THE MICROCIRCULATION: THEIR RELATIONSHIP TO "LYMPHANGIOMA" OF MESENTERY. *(E.)* Elliott, G. B. (Vancouver Gen. Hosp., British Columbia, Canada), M. R. Kliman and K. A. Elliott. *Ann Surg* 172(1):131-136, 1970.

8465 IDIOPATHIC HYPOGAMMAGLOBULINEMIA, PERNICIOUS ANEMIA, ARTHRITIS AND DIARRHEA: EFFECTS OF PREDNISONE. *(E.)* Lowe, W. C. (VA Hosp., East Orange, N. J.) and E. D. Palmer. *New York J Med* 70(16):2125-2132, 1970.

8466 THE PATHOPHYSIOLOGICAL ROLE OF SMALL INTESTINAL BACTERIAL FLORA: QUADRENNIAL REVIEW. *(E.)* Tabaqchali, S. (Hammersmith Hosp., London, England). *Scand J Gastroent* 5(suppl. 6):139-163, 1970.

8467 EFFECTIVENESS OF GASTROPULGITE IN GASTROENTEROLOGY. *(Fr.)* Duffaut, M. (Hosp. Purpan, Toulouse, France) and A. Ribet. *Therapeutique* 46(h.s.):36-38, 1970.

8468 A NEW DIGESTIVE COATING. *(Fr.)* Dupuy, R. (Hosp. Beaujon, Clichy, France) and J. Thiroloix. *Therapeutique* 46(h.s.):27-30, 1970.

8469 SOLITARY OR APPARENTLY SOLITARY TUMORS OF THE ABDOMEN. *(Fr.)* Mazingarbe, A. (Hosp. Cochin, Paris, France), L. Leger, T. Dentan, J. Vilotte, G. Palmade and G. Lemaigre. *Chirurgie* 96(6):402-409, 1970.

8470 SPONTANEOUS HEMATOMAS OF ABDOMINAL FASCIA RECTA. *(Fr.)* Stoppa, R. (C. H. U. Amiens, France), M. Quintyn and H. Abourachid. *Chirurgie* 96(5):354-358, 1970.

8471 CHYLOUS ASCITES WITH INTESTINAL LYMPHANGIECTASIS: A CASE WITH FAVORABLE DEVELOPMENT. *(Fr.)* Linquette, M. (no affil), A. Dupont, R. Mesmacque, C. L'Hermine, M. Vankemmel, J. M. Andre and J. M. Bedoret. *Lille Med* 15(4):666-673, 1970.

8472 INFRA-CLINICAL COLLAGENOSES AND VISCERAL CANCERS. *(Fr.)* Galinier, L. (C. H. U. Nord, Marseilles, France) and E. Gascard. *Marseilles Med* 107(5):399-402, 1970.

8473 STENOSES OF THE LIVER ARTERY (4 CASES). *(Fr.)* Bessot, M. (C. H. U. Nancy, France), J. Fays, R. Piccioli, F. Boileau and J. Bauquet. *Chirurgie* 96(7):457-466, 1970.

8474 TREATMENT OF INTESTINAL HEMORRHAGE. *(Ger.)* Lubcke, P. (Altona Hosp., Germany). *Internist Prax* 10(2):306-308, 1970.

8475 EXPERIMENTAL INTESTINAL INFECTION INDUCED BY ENTEROPATHOGENIC *E. Coli* 0127:K72: AN AGENT OF DYSENTERY-LIKE DISEASES OF ADULTS AND CHILDREN. *(Rus.)* Polotskii, Yu. E. (Acad. Med. Sci. USSR, Leningrad) and N. R. Wasser. *Biull Eksp Biol Med* 69(2):20-23, 1970.

8476 RUPTURED SPLENIC ARTERY ANEURYSM WITH RESULTANT UPPER GASTROINTESTINAL BLEEDING. *(E.)* Hootkin, L. (Johns Hopkins Hosp., Baltimore, Md.) and A. E. Cocco. *Amer J Dig Dis* 15(9):848-850, 1970.

8477 ENHANCEMENT OF *ESCHERICHIA COLI* INFECTION AND ENDOTOXIC ACTIVITY BY HEMOGLOBIN AND FERRIC AMMONIUM CITRATE. *(E.)* Bornside, G. H. (Louisiana St. U. Sch. Med., New Orleans), P. J. Bouis, Jr. and I. Cohn, Jr. *Surgery* 68(2):350-355, 1970.

8478 ANTICOAGULANTS AND THE ACUTE ABDOMEN. *(E.)* Cocks, J. R. (Alfred Hosp., Melbourne, Australia). *Med J Aust* 1(23):1138-1141, 1970.

8479 ZOLLINGER-ELLISON SYNDROME: REPORT OF A CASE WITH 7½ YEAR FOLLOW-UP. *(E.)* Chernish, S. M. (Marion Cty. Gen. Hosp., Indianapolis, Ind.) and B. D. Rosenak. *Amer J Dig Dis* 15(7):659-666, 1970.

8480 STUDIES ON THE RESORPTION OF EXPERIMENTAL AMYLOIDOSIS. *(E.)* Polliack, A. (Rothschild-Haddassah U. Hosp., Jerusalem, Israel), A. Laufer and C. Tal. *Brit J Exp Path* 51(3):236-241, 1970.

8481 THE ALIMENTARY TRACT MALFORMATIONS IN THE RABBIT THALIDOMIDE EMBRYOPATHY. *(E.)* Vickers, T. H. (U. Queensland, Brisbane, Australia). *Brit J Exp Path* 51(3):286-297, 1970.

8482 ILEOCOLITIS ASSOCIATED WITH MEASLES (RUBEOLA). *(E.)* Monif, G. R. G. (U. Florida Coll. Med., Gainesville) and C. I. Hood. *Amer J Dis Child* 120(3):245-247, 1970.

8483 EFFECT OF KWASHIORKOR ON ABSORPTION AND EXCRETION OF NITROGEN, FAT, AND MINERALS. *(E.)* McCance, R. A. (Dunn Nutr. Lab., Cambridge, England), I. H. E. Rutishauser and C. N. Boozer. *Arch Dis Child* 45(241):410-416, 1970.

8484 POTASSIUM THERAPY AND GASTROINTESTINAL LESIONS. *(E.)* Emerson, D. N. (Mead Johnson Res. Ctr., Evansville, Indiana). *Nebraska Med J* 55(9):518-523, 1970.

o P:Absorp (7835) (7849)
o P:Secr:Hepatobil (7978)
o P:Secr:Int (7987)
o P:Gen (8000)
o Diagproc (8017) (8019) (8032) (8054)
o D:Esoph (8058) (8073)
o D:Stomduo (8102) (8103)
o D:S.Intest (8142) (8145) (8147) (8151) (8152)
o D:S.Intest:Regent (8158)
o D:L.Intest (8194) (8208)
o D:Pancreas (8226)
o D:Livbil (8263)
o D:Livbil:Gallb (8414)

Parasitology

8485 COMPARATIVE EVOLUTION OF THE FLUORESCENT ANTIBODIES DIRECTED AGAINST THE LARVAL STAGES AND THE ADULTS OF *SCHISTOSOMA MANSONI:* I. EXPERIMENTAL SCHISTOSOMIASIS IN UNTREATED MICE. *(E.)* Truong, T. K. (Swiss Trop. Inst., Basel, Switzerland), G. Sarasin and P. Ambroise-Thomas. *Ann Trop Med Parasit* 64(1):87-92, 1970.

The sequence of appearance and the evolution of the antibodies corresponding to the different stages of the life cycle of schistosomes was studied in mice harboring a bisexual infection of *Schistosoma mansoni.* Each blood sample was tested by the indirect fluorescent antibody method against frozen sections of parasitized mouse liver (adult worm- and egg-antigen) and, simultaneously, against frozen sections of schistosome-infected hepato-pancreas of *Biomphalaria glabrata*(cercarial antigen). The anti-cercarial antibodies appeared early and predominated around the 40th day after infection. The antibodies against the adults and the eggs showed an almost identical evolution, but they appeared later than cercarial antibodies and reached their maximum level only around the 70th day after infection.

8486 COMPARATIVE EVOLUTION OF THE FLUORESCENT ANTIBODIES DIRECTED AGAINST THE LARVAL STAGES AND THE ADULT OF *SCHISTOSOMA MANSONI:* II. EXPERIMENTAL SCHISTOSOMIASIS IN MICE AFTER TREATMENT WITH NIRIDAZOLE. *(E.)* Ambroise-Thomas, P. (Swiss Trop. Inst., Basel, Switzerland), G. Sarasin and T. K. Truong. *Ann Trop Med Parasitol* 64(1):93-99, 1970.

The fluorescent cercarial, adult-worm and egg antibodies were studied in mice infected with *Schistosoma mansoni* and treated with niridazole at different intervals after infection. Except when administered very early during the infection, niridazole treatment (150 mg/day for 10 days) provoked a significant rise of antibodies against the adults and the eggs, whereas the antibodies directed against the cercariae were only slightly modified. After a radical cure, the antibodies disappeared about 170 days later, but they persisted at a low titre if some worms, even in very low numbers, survived the treatment. This phenomenon, which has already been reported in man, seems to be connected with the liberation of somatic antigens following the lysis of the schistosomes.

8487 INTESTINAL PROTEIN LOSS IN SCHISTOSOMAL POLYPOSIS OF THE COLON. *(E.)* Lehman, J. S., Jr. (U.S. Naval Med. Res. Unit #3, Cairo, Egypt), Z. Farid, S. Bassily, J. Haxton, M. F. A. Wahab and D. C. Kent. *Gastroenterology* 59(3):433-436, 1970.

Excessive intestinal protein loss was demonstrated in 5 of 6 patients with colonic polyposis due to *Schistosoma mansoni* infection. The degree of protein loss was associated with the extent of polyposis and mucosal inflammation and ulceration but not with the intensity of infection as measured by the 24-hr excretion of schistosome eggs. This previously undescribed complication of intestinal schistosomiasis may lead to serious depletion of the body albumin in patients with concomitant protein malnutrition, resembling depletion of body iron stores due to chronic blood loss from schistosomal polyposis.

8488 *TOXOPLASMA GONDII:* RESISTANCE AND TRANSMISSION THROUGH GASTROINTESTINAL TRACT. *(Fr.)* Cranz, G. (Fac. Med. Strasbourg, France) and M. Kremer. *J Med Strasbourg* 1(5):389-391, 1970.

8489 A CASE OF PARASITIC EOSINOPHILIC GRANULOMA OF THE INTESTINE WITH ACUTE INTESTINAL OCCLUSION. *(Fr.)* Hirtz, R. (Lariboisiere Hosp., Paris, France), C. Faguer and J. P. Calvet. *Chirurgie* 96(9):612-614, 1970.

8490 EXPERIMENTAL EXTRAINTESTINAL INFECTIONS OF THE HAMSTER WITH *ENTAMOEBA HISTOLYTICA* FROM BACTERIA-FREE MICE. *(Ger.)* Michel, R. (Benhard-Nocht Inst. Trop. Dis., Hamburg, Germany) and A. Westphal. *Z Tropenmed Parasit* 21(3):230-239, 1970.

8491 CARBON TETRACHLORIDE METABOLISM IN SHEEP AND IN *FASCIOLA HEPATICA.* *(E.)* Fowler, J. S. L. (Dept. Vetr. Pharmacol., U. Edinburgh, Scotland). *Brit J Pharmacol* 39(3):599-607, 1970.

8492 A STUDY OF CIRRHOSIS OF THE LIVER DUE TO CHRONIC KALA-AZAR. *(E.)* Goswami, B. M. (Assam Med. Coll., Dibrugarh, India). *J Indian Med Ass* 54(7):315-320, 1970.

8493 INTESTINAL PARASITE TESTING IN PEOPLE RETURNING FROM THE TROPICS. *(Ger.)* Muller, W. A. (Med. Acad. Carl Gustav Carus, Dresden, Germany). *Z Inn Med* 25(9):402-404, 1970.

8494 EVALUATION OF PHENYLENE 1,4-DIISOTHIOCYANATE (BITOSCANATE: JONIT) IN INTESTINAL PARASITIC INFECTION: A FIELD STUDY. *(E.)* Mutalik, G. S. (Sassoon Gen. Hosp., Poona, India), R. B. Gulati and A. K. Iqbal. *Ann Trop Med Parasit* 64(1):79-85, 1970.

8495 ASCARIASIS OF THE BILE DUCT COMPLICATED WITH PANCREATITIS. *(Por.)* Iuchtman, M. (Miguel Couto Hosp., Brazil), J. A. Papi, M. Nahon, M. Lossio and M. R. De Andrade. *Folha Med* 60(5):471-477, 1970.

8496 CLINICAL TRIAL OF HETOL (1,4-BIS-TRICHOLOROMETHYLBENZOL) IN THE TREATMENT OF OPISTHORCHIASIS. *(E.)* Bunnag, D. (Bangkok Hosp. Trop. Dis., Thailand), T. Harinasuta, C. Harinasuta, P. Suntharasamai, C. Viravan and S. Petchklah. *Ann Trop Med Parasit* 64(1):109-113, 1970.

8497 THE TREATMENT OF SCHISTOSOMIASIS WITH NIRIDAZOLE IN BRITAIN. *(E.)* Kanani, S. R. (London Sch. Hyg. Trop. Med., England), R. Knight and A. W. Woodruff. *J Trop Med Hyg* 73(7):162-169, 1970.

8498 THE KATAYAMA SYNDROME: REPORT ON AN OUTBREAK IN RHODESIA. *(E.)* Clarke, V. De V. (Blair Res. Lab., Salisbury, Rhodesia), B. Warburton and D. M. Blair. *C Afr J Med* 16(6):123-126, 1970.

8499 IMMUNOGLOBULIN LEVELS IN KATAYAMA DISEASE: A PRELIMINARY REPORT. *(E.)* Ashworth, T. G. (Dept. Path., U. Coll. Rhodesia). *C Afr J Med* 16(6):127-128, 1970.

8500 EXPERIMENTS ON THE CONTROL OF PARASITIC GASTROENTERITIS IN CALVES. *(E.)* Michel, J. F. (Central Vetr. Lab., Weybridge, England) and M. B. Lancaster. *J Helminth* 44(2):107-140, 1970.

8501 METRONIDAZOLE IN THE TREATMENT OF INTESTINAL AMEBIASIS. *(E.)* Grewal, M. S. (Postgrad. Inst. Med. Educ. Res., Chandigarh, India) and P. N. Chhuttani. *Indian Pract* 23(4):269-271, 1970.

o Diagproc (8013) (8021)

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE
    Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON
    Cancer, Polyps, Radiological Detection (0188)*

RECTUM
    Cancer, Polyps, Precancerous (0188)*

CANCER
    Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS
    Radiology, Cancer, Large Intestine (0188)*

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

ABBOTT, A.G. 8370*
ABOUMRAD, M.H. 8121
ABOURACHID, H. 8470
ABRASHEV, I. 7848
ABRAHAM, A. 8354
ACHER, R. 7814
ACKERMAN, N.B. 8263*
ADAM, S.E.I. 8331
ADAMS, J.T. 8209
ADAMS, T.H. 7836*
ADIBI, S.A. 7835*
AGARWAL, D.P. 7812
AGOSTI, A. 7877*
AHSAN, I. 8120
AIKAWA, T. 8321*
AJDUKIEWICZ, A. 8346*
AKGUN, S. 8375*
AKINO, T. 7781*
AKOPYAN, V.G. 8365
ALAUPOVIC, P. 8293
ALBACETE, R.A. 8067
ALBOT, G. 8159
ALDEN, J.C. 8461
ALEXANDER, F.W. 8313
ALEXANDER, R.H. 8187
ALLEGRA, S.R. 8115
ALLEN, E.R. 7835*
ALLEN, J.G. 8357
ALLEN, J.R. 8322*
ALLISON, P.R. 8066
ALSTON, W.C. 8335
AMBROISE-THOMAS, P. 8485*, 8486*
AMMANN, R. 8259
ANDERSON, B.M. 7926
ANDERSON, J.R. 8181
ANDERSON, K. 8019
ANDERSSON, R. 7854*
ANDRE, J.M. 8471
ANDRE, L.J. 8134
ANDREASSEN, M. 8048
ANDREW, D.J. 8419
ANDRUS, P. 8181
ANGELUCCI, L. 7859*, 7878*
ANGULO, M. 7876
ANISHIN, N.S. 8150
ANJARIA, R.K. 8052
ANKERMANN, H. 7898*
ANONYMOUS 8384, 8435
ANTHONY, P.P. 8151
ANYOK, E. 7937
AOUN, A. 8093
ARAKAWA, T. 8262*
ARBUCKLE, J.B.R. 8424*
ARBULU, A. 8194
ARENDT, R. 7870
ARIAS, I.M. 7956
ASATOOR, A.M. 8166*, 8170
ASBURY, A.K. 8269*
ASHCAVAL, M. 8035
ASHIDA, K. 7893*
ASHWORTH, T.G. 8499
ATAMANCHUK, E.I. 8002
ATARE, Z.A. 7867
ATTAR, S. 8449
AUBREY, D.A. 7871, 7872
AUGIER, D. 7987
AUGUR, N.A., JR. 8412
AUNE, S. 8081
AURES, D. 7865*
AUST, G. 7875
AVILA BELLO, E.M. 7892*
AZERAD, E. 8249
BACCHIN, P.G. 7901*
BADER, J.P. 8172
BAGGENSTOSS, A.H. 8216
BAGSHAWE, A. 8294
BAIBEKOV, I.M. 7808
BAILLET, J. 8158
BALDIERI, M. 7878*
BALL, P. 7820
BALLARD, P.L. 8264*
BALSLEY, I. 8182
BANDLER, M. 8122
BARBORIAK, J.J. 7852*
BARDEBHEIER, J.A., III 8236
BARGE, J. 8251
BARNARD, E.A. 7811
BARNER, H.B. 8236
BARNES, R.H. 7991*
BARNETT, J.E.G. 7834*
BARON, J.H. 8033
BASKIN, S.A. 8055*
BASSILY, S. 8487*
BASSO, N. 8433
BATINOV, I.N. 8042
BAUMANN, M. 8366
BAUQUET, J. 8473
BEATTIE, E.J., JR. 8303
BEAULIEU, J.C. 8015
BEAVEN, M.A. 7993*
BECHAR, M. 8380

BECK, C.
8015
BECK, I.T.
8244
BECKER, K.
8369
BECKWITH, B.
8267*
BECKWITH, J.B.
8187
BEDORET, J.M.
8471
BEHRINGER, B.R.
7873
BEL, A.
8457
BELBER, J.P.
8026
BELCHIJA, A.
8455
BELL, C.C., JR.
8381
BENCOSME, S.A.
8244
BENDER, F.
8063
BENKO, G.
8034
BENNETT, G.
7794*
BENNETT, T.
7819
BENOIT, J.F.
8255
BERENI, J.
8356
BERESNEV, A.V.
7977
BERG, T.
7818
BERGELSON, L.D.
8287
BERGMAN, F.
7894*
BERIZZI, G.F.
8114
BERK, P.D.
8314
BERLINER, S.D.
8152
BERMAN, I.R.
8428
BERNARDINI, R.
8403
BERNDT, J.
7959
BERNE, T.V.
8142*
BERNIER, J.J.
7840, 8249
BERNSTEIN, R.
8444
BERRETTI, C.
8403
BERTACCINI, G.
7977*
BESSOT, M.
8473
BEYLOT, J.C.
8073
BEZON, A.
8356
BHATNAGAR, S.P.
7917*
BIASIOLI, S.
7877*
BICKEL, M.H.
7944
BIERUYCK, J.F.
8344
BIELSKA, H.
7809
BIENENGRABER, A.
7790*
BIENICK, C.
8382
BILL, A.H.
8187
BILLING, B.H.
7779*
BIRD, J.W.C.
7818
BLACK, M.
7779*
BLACKMAN, A.H.
8009*
BLAIR, D.M.
8498
BLAISDELL, F.W.
8232
BLAKER, F.
8217
BLANC, D.
8249
BLANQUET, P.
8015
BLATT, C.
8444
BLAUENSTEIN, U.W.
8053
BLENDIS, L.M.
8301
BLOCH, R.
7827*
BLOOM, J.B.
8329
BLOOMER, J.R.
8314
BLUMBERG, W.E.
7801
BOCK, F.G.
7928
BOESE, W.
8017
BOGENHARD, H.
8292
BOGNEL, C.
7840
BOGNEL, J.C.
7840
BOHLE, E.
8307
BOILEAU, F.
8473
BOLIN, T.D.
8175
BOLOOKI, H.
8248
BONAKDARPOUR, A.
8086*
BONANDRINI, L.
8233
BONO, V.H., JR.
7945
BOOZER, C.N.
8483
BORNSIDE, G.H.
8477
BORNSTEIN, P.
8380
BORRI, P.
8233
BOS, C.J.
7802
BOUIS, P.J., JR.
8477
BOUR, H.
8247
BOYETT, J.D.
8369*
BRAGHERI, R.
8114
BRAGUINSKY, J.
8169
BRALOW, S.P.
8086*
BRANNON, R.B.
8447
BRAZENAS, N.
8271*
BREMER, H.J.
8460
BRENNER, G.
7961
BRESNICK, E.
7943
BREUER, H.
7783*, 7820
BRIERE, N.
8282
BRODERICK, P.A.
8115
BRONSTEIN, J.
8356
BROWN, R.E.
8069
BRUCKE, P.
8431
BRUNNER, H.
8394
BRUNT, P.W.
8238
BUHAC, I.
8381
BULLIVANT, S.
7797*
BUNNAG, D.
8496
BURBERI, S.
8132*
BURNS, W.A.
8067

BURSON, L.C.
8152
BUSHNELL, D.E.
7902*
BUSTOS FERNANEZ, L.
8169
BUTLER, M.M.T.
7909*
BYNUM, T.E.
8138
CALCAGNO, A.
8403
CALVERT, J.
8268*
CALVET, J.P.
8489
CAMILLERI, J.P.
8159, 8200
CAMPBELL, P.N.
7950
CANNON, J.A.
8404
CAPEK, V.
8219
CAPOEN, J.P.
8456
CAPRON, J.P.
8158
CAREY, J.P.
8445
CAREY, J.S.
8083
CARON, J.J.
8413
CARRASQUILLA, C.
8144, 8194
CARRERAS, A.
8169
CARSTEINS, L.A.
8322*
CARTER, D.C.
8239
CASANELLO, D.E.
7795*
CASTELLO, D.
8359
CASTRUP, H.J.
7853*
CATANESE, B.
7863*
CAYEN, M.N.
7887*
CEDARD, L.
8383
CEPURNEEK, C.P.
7785*
CHALCROFT, J.P.
7797*
CHANG, A.Y.
7919*, 8279
CHARKEY, I.W.
7909*
CHARLES, M.A.
8266*
CHARLESWORTH, D.
8145
CHARLEUX, H.
8255
CHASTEL, C.
8356
CHAUVET, J.
7814
CHEBYKINA, N.V.
8277
CHELIBONOVA-LORER, KH.
8340
CHENG, B.
8166*
CHERNISH, S.M.
8479
CHERNY, V.A.
8125
CHEW, B.K.
8311
CHEY, W.Y.
8090*
CHHUTTANI, P.N.
8501
CHRISTOPHER, N.L.
8027
CHRISTOFFERSEN, P.
8298
CHUNG, R.S.K.
7862*, 7883*
CIOLI, V.
8132*
CIVARDI, F.
7934
CLARET, M.
7838
CLARK, R.M.
8156*
CLARKE, V.DF V.
8498
CLASSEN, M.
8109
CLATWORTHY, H.W., JR.
8448
CLEARFIELD, H.
8334
CLEATOR, I.G.M.
8054
COBB, J.L.S.
7819
COCCO, A.E.
8027, 8058, 8476
COCKS, J.
8315
COCKS, J.R.
8478
COE, J.D.
8402
COHEN, A.M.
7907*
COHN, I., JR.
8477
COHN, L.H.
8232
COLE, F.H.
8074
COLLIE, R.J.
8193
COLOMBO, P.
8233
COLVIN, M.
7945
COMBEMALE, B.
8062, 8257
CONNOLLY, J.E.
8445
CONNOLLY, J.M.
8202
CONRAD, M.E.
7832*
CONSTANTINO, D.
8346*
COODLEY, E.L.
8031
COOK, G.C.
7850
COOK, J.D.
7842
COOPER, J.H.
8401
CORABOEUF, E.
7838
CORBETT, J.J.
8415
CORCORAN, P.L.
8314
CORMIER, J.M.
8452
CORNATZER, W.E.
7962
COSSA, J.F.
8255
COSSON, R.
8413
COTUL, S.
8020
COUINAUD, C.
8450
CRABBE, P.A.
8165*
CRANE, R.K.
7831
CRANZ, G.
8488
CREUTZFELDT, W.
7764, 8245
CRITCHLEY, D.R.
7831
CROHN, B.
8223
CROISIER, J.C.
8249
CROOM, R.D., III
8107
CROSS, G.
8347*
CROWLEY, L.V.
7829*
CRUMB, C.K.
8110
CULLEN, A.B.
8375*
CULLEN, R.A.
8309
CUMMACK, D.H.
8241
CUSSLER, E.L.
7930
DAIDO, R.
8113

DALE, M.M.
7856
DALLNER, G.
7782*
DANILYAK, V.YA.
7980
DANUS, O.
8426
DAOUST, R.
8282
DAROCZY, A.
8319*
DAS, M.L.
7891*
DAS, N.P.
8185
DASGUPTA, M.
8393
DATTAGUPTA, A.K.
8146
DAVID, H.
7816
DAVIS, A.E.
8175
DAVIS, L.E.
8360
DAVIS, N.
8329
DAVIS, P.S.
7785*
DAVIS, W.L.
7833*
DAVIS, W.W.
7843
DAVYDOV, I.I.
8124
DAWSON, J.L.
8301
DAWSON, W.
7913*
DEAN, D.
8106
DE ANDRADE, M.R.
8495
DEBELUT, J.
8228
DE BOER, W.
8315
DECKER, K.
8376*
DEGKWITZ, E.
7933
DEHLINGER, P.J.
7899*
DEINEKA, I.YA.
8013
DE LA FONTAINE, P.
8452
DE LAMIRANDE, G.
7946
DEL PRETE, S.
8346*
DE LUCA, H.F.
7990
DE MEDICI, A.
8233
DEMIDAS, V.V.
8013
DEMLING, L.
8109
DENISYUK, V.G.
8129
DENK, H.
7901*
DENNIN, H.F.
8178
DENNIS, P.
8315
DENTAN, T.
8451, 8469
DE PALMA, R.G.
7930
DE PAULA, A.
8169
DEPIEDS, R.
7821
DE PIJPER, A.M.
7986*
DERIZHANOVA, I.S.
8408
DEROT, M.
8247
DE SA, D.J.
8437
DESPRUNIEE
8231
DEVROEDE, G.J.
7845
DI DIO, L.J.A.
7804
DIEBOLD, J.
8159, 8200
DIEKMANN, L.
8284
DIETZ, F.
7849
DI MARIA, G.
8427
DINOSO, V.P.
8090*
DITTRICH, H.
8291
DIXON, R.L.
7897*
DOBERNECK, R.
8299
DOBRUNOV, K.M.
8336
DODDS, W.J.
8055*, 8079
DOGLIA, M.
8346*
DOHRMANN, R.E.
8274
DOLETSKY, S.YA.
8365
DONALDSON, R.M., JR.
8441
DONDO, U.M.
8052
DONIACH, D.
8387
DONOVAN, A.J.
8142*
DOREMIEUX, J.
8148
DORF, G.
8102
DOST, F.H.
7880*
DOTY, D.B.
8428
DOUGLAS, A.P.
8165*
DOUGLASS, H.O., JR.
8131*
DOUTRE, L.P.
8015
DOWNER, H.D.
7841
DRAGSTEDT, L.R.
8136
DRENICK, E.J.
8178
DRISCOLL, S.
7984*
DRURY, R.A.B.
8151
DUBOVYI, E.D.
8013
DUBROVSKY, A.K.
8296
DUCLERT, N.
8251
DUDLEY, F.J.
8346*
DUFFAUT, M.
8467
DUPONT, A.
8471
DUPONT, H.L.
8463
DUPRAS, M.
7946
DUPREY, J.
8249

DUPUY, R.
8468
DURIE, B.
8239

DYATLOVITSKAYA, E.V.
8287
DZHAPARIDZE, M.N.
7978
ECKERT, J.D.
8011*
EDER, M.
8105
EDWARDS, K.D.G.
8166*
EGGER, G.
8180*
EGLI, H.
8389
EGOROVA, V.D.
7978
EGOVILLE, J.W.
8379
EICHHOLZ, A.
7831
EICKHOFF, K.
7812

EKKERS, T.J.
8037
EL-DOMEIRI, A.
8199
EL GAMAL, M.
7816
ELGER, J.
7898•
EL HASSAR, S.
8062
ELLIOTT, G.B.
8464
ELLIOTT, K.A.
8464
ELSTER, K.
8064
ELWYN, D.H.
7771•
EMERSON, D.N.
8440, 8484
EMMELOT, P.
7802
ENDERS, J.F.
7984•
ENGELHART, G.
8053
ENGLERT, E., JR.
8396•
ERB, W.
8307
ERICHSEN, H.G.
8237
EROZAN, Y.S.
8027
ESSER, G.
8389
ESTES, L.W.
7798•
ETHERINGTON, D.J.
7864•
EVANS, D.F.
7930
EXTON, J.H.
7951
FAGIN, R.R.
8118
FAGUER, C.
8489
FAHIM, M.S.
7947
FAHIM, Z.
7947
FAHIMI, H.D.
7792•
FAILES, D.
8161
FALCONER, C.W.A.
8226•, 8240
FALK, G.
8131•
FALL, D.J.
8005•
FALOON, W.W.
8179, 8374•
FARBER, E.
8317•
FARID, Z.
8487•
FARMER, R.G.
8221
FARROW, L.J.
8349•
FAVIER, M.P.
7838
FAYS, J.
8473
FEDJUSHINA, N.A.
8407
FEINGOLD, D.S.
7798•
FEIZI, T.
8387
FELIX, H.
8203
FELLER, D.R.
7941
FELSENFELD, O.
8447
FELSHER, B.F.
7832•
FERGUSON, F.F.
8173
FERRIS, A.A.
8347•
FERSTL, M.
8399
FILIN, V.I.
8057
FINCH, C.A.
7842
FINIK, V.I.
8124
FINK, W.J.
8084
FIROR, H.V.
8213
FISHER, B.
8281
FISHER, E.R.
8281
FISHMAN, W.H.
7923
FITCHETT, C.W.
8417
FLATMARK, A.
8276
FLETCHER, R.
7929
FLIEDNER, T.M.
7958
FLORES, P.A.
8067
FODOR, G.P.
8354
FODOR, O.
8020
FOLKMAN, J.
7984•
FORELL, M.M.
7880•
FORMAL, S.B.
8463
FORREST, A.P.M.
7872
FORTNER, J.G.
8303
FORTUN, H.
8237
FOSSATI, P.
8250
FOSTER, J.H.
8300
FOURLINNIE, J.C.
8250
FOWLER, J.S.L.
8491
FOX, H.
8145
FOX, R.A.
8346•
FRAGA, F.
8186
FRANK, H.
8414
FRANK, P.
8258
FRANKE, H.
7898•
FRENCH, E.B.
8242
FREUD, M.
8380
FRIEDMANN, N.
7951
FRITZ, H.
7880•
FROMANTIN, M.
8362
FROMM, D.
7862•
FROMM, S.
8194
FROMMER, U.
7886•, 7921•
FUJIMURA, S.
8088•
FULLER, G.C.
8323•
FULLHAAS, J.
7823, 7983•
FUNOVIC, J.
8431
FURMAN, R.H.
8293
GABELLA, G.
7786•
GABRIELLI, F.
7966
GABRYS, B.
7861•
GADALETA, M.N.
7939
GADZHIEVA, Z.M.
7979
GAGLIARDI, M.
8461
GAJEWSKI, H.
8024
GALAMBOS, J.T.
8375•
GALINIER, L.
8472

GALLOWAY, R.W.
7841
GANG, M.J.
8037
GANGAROSA, F.J.
8463
GANZALEZ-LICEA, A.
7775*
GARDNER, B.
8395*
GARNIER, J.
8413
GARNJOBST, W.
8188
GASCARD, E.
8472
GATTI, F.
8439
GAUTAM, H.P.
8080
GAUTIER-BENOIT, C.
8288
GAZAIX, M.
8072
GEEVER, E.F.
7829*, 8227*
GELB, A.
8271*
GEORGIEV, D.
7848
GERALD, M.
7941
GERAMI, S.
8074
GERARD, A.
8093
GERBER, G.B.
7936, 7988
GERHARD, H.
8325*
GERMANIER, R.
8422*
GERRON, G.G.
8375*
GERSCHENSON, L.E.
7795*
GEUZE, J.J.
7793*
GHEORGHIU, T.
8105
GHOSH, D.K.
8146
GIBSON, M.J.
8036
GILL, W.
8239
GILLET, M.
8148
GILLETTE, J.R.
7918*, 7925
GILMOUR, I.E.W.
8226*
GINSBERG, A.L.
8397*
GIRARD, M.
8457
GIRDANY, B.R.
8192
GIRLIA, V.I.
8410
GLADER, B.E.
7832*
GLAUMANN, H.
7782*
GLENDE, E.A., JR.
7920*
GLICK, D.M.
7811
GLIEDMAN, M.L.
8248, 8416
GLOGNER, P.
7932
GOEDDE, H.
7812
GOETZ, H.P.
8037
GOGOLASHVILY, G.D.
8056
GOLDBERG, H.I.
8055*, 8079
GOLDBLATT, P.J.
7799, 8278
GOLDIN, A.
8429
GOLDMAN, M.
7906*
GOLDSTEIN, F.
8003*
GOLLAN, F.
8051
GOLOLOBOVA, M.T.
7807
GOLTYAKOVA, T.V.
7869

GONZALEZ-CADAVID, N.F.
7892*
GOODGE, B.J.
7926

GORAYER, F.
8065
GORDON, E.
8315
GORDON, H.F.
8433
GORKOVA, N.P.
8287
GOSWAMI, B.M.
8492
GOUGH, M.H.
8437
GRABICKI, P.
8111
GRABNER, G.
8394
GRACIE, W.A., JR.
8412
GRADAUS, D.
8063
GRANT, D.B.
8313
GRAVIOU
8231
GRAY, R.K.
8420*
GRAZIINA, A.
8346*
GREASLEY, R.E.
8011*
GRECHISHKIN, L.L.
7868
GRECO, M.
7939
GREDJEV, A.F.
8150
GREER, W.E.
8447
GREGG, J.A.
8216
GREWAL, M.S.
8501
GRIFFEN, W.O., JR.
3243*
GRIFFIN, A.C.
7906*
GRIFFIN, B.G.
8032
GRIMES, O.F.
8068
GRINDON, A.
8363

GRIZZLE, J.E.
8111
GROGAN, D.E.
7885*

GROLLMAN, J.H.
8420*
GROSFELD, J.L.
8280, 8448
GROSSMAN, M.I.
7860*
GRUENSTEIN, M.
8086*
GRUMINSKY, V.S.
8365
GRUMMT, F.
7817
GUERRE, J.
8096
GUIRAUD, R.
7987
GUIVARC'H, M.
8094
GUIVIK, V.D.
8043
GULATI, R.B.
8494
GULY, M.F.
7981
GULZOW, M.
7870
GUNN, A.A.
8018
GUST, I.D.
8347*
GUY-GRAND, B.
8247
GYEPES, M.T.
7993*
HAAS, R.J.
7958

HADZIYANNIS, S.
8387
HAGA, J.Y.
7784*
HAGEMANN, R.F.
7778*
HAHN, R.G.
8443
HAIG, T.H.B.
8260
HAINES, D.S.M.
7912*
HAK-HAGIR, A.
8116
HALL, D.G.
7947
HALLETT, G.W.
8304
HAMILTON, D.G.
8011*
HAMILTON, J.W.
7830*
HAMILTON, M.G.
7784*
HANCOCK, R.L.
7952
HARDCASTLE, J.D.
7855
HARDELAND, B.
7938
HARDWICK, C.
8188
HARINASUTA, C.
8496
HARINASUTA, T.
8496
HARPER, D.T., JR.
8027
HARRISON, R.C.
8025
HAWK, W.A.
8221
HAXTON, J.
8487*
HECHT, Y.
8014
HEIMLICH, H.J.
8082
HEINKEL, K.
8211*
HEIRWEGH, K.P.M.
7779*
HELLSTROM, H.R.
8430
HENDERSON, G.D.
7970
HENNINGHAUSEN, G.
7870
HENRICH, H.
7999
HENRION, C.
8061
HENRY, C.
7821
HERMANN, R.E.
8308
HERNANDEZ, J.
8198
HESS, W.
8324*
HEYWORTH, B.
8423*
HICKMAN, R.
8001
HIEBERT, C.
8065
HILL, L.D.
8421*
HILLEMAND, B.
8095
HILLS, L.L.
8400
HIRSCHFELD, J.
8354
HIRTZ, R.
8489
HIVET, M.
8453
HOBBS, J.R.
8165*
HODSON-WALKER, N.J.
8261
HOFFMANN, E.
8098
HOJMAN, D.
8169
HOKAMA, Y.
7957
HOLBOROW, E.J.
8349*
HOLDSWORTH, E.S.
7830*
HOLLENDER, L.F.
8103
HOLTZAPPLE, P.G.
8273*
HOLUBITSKY, I.B.
8025
HONG, S.S.
7879*
HOOD, C.I.
8482
HOOTKIN, L.
8476
HOOTKIN, L.A.
8058
HOPTON, D.
8252
HORAKOVA, Z.
7993*
HORNSBY, L.G.
8215
HORNTRICH, J.
8153
HORWICH, L.
7841
HOUCKE, M.
8288
HOWARD, C.H.
8375*
HOWELL, T.R.
8069
HOWLAND, W.S.
8303
HUBERHUS, H.
8174
HUBERMAN, A.
8373*
HUCHET, R.
8143
HULL, D.
8243*
HULSMANN, W.C.
7986*
HUNT, P.
8315
HUNT, S.M.
8270*
HUTTERER, F.
7901*
HUTZEL, M.
7880*
HVIDT, S.
8296
IAMANDESCU, I.B.
8455
IBER, F.L.
8168*
IEMHOFF, W.G.J.
7986*
IKEDA, S.
8004*
IQBAL, A.K.
8494
IRONSIDE, A.G.
8423*
ISHIKAWA, H.
8008*
ISHIKAWA, K.
7910*, 7911*, 7916*
ITOIZ, J.E.
7847
IUCHTMAN, M.
8495
JABLONSKI, P.
8315
JACKSON, F.C.
8430
JACOBI, M.A.
8190
JAECK, D.
8148
JAMES, N.J.
8283
JANECKI, J.
8016
JANOVSKI, N.A.
8299
JAVITT, N.B.
8312
JEFFAY, H.
7771*
JEFFERSON, L.S.
7951
JELLINCK, P.H.
7929
JENNINGS, J.B.
7777*
JENSEN, H.E.
8182

JESSUP, S.J.
7913*
JHUNG, J.W.
8173
JOBLING, S.A.
8201
JOHN, H.D.
8391
JOHNSON, A.E.
8051
JOHNSON, G.D.
8349*
JOHNSON, K.L.
7968
JOHNSON, L.R.
7865*
JOHNSON, S.E.
8419
JOHNSON, W.D.
8111
JOHNSTON, P.W.
8117
JOLY, J.C.
8371*
JONEK, J.
8406
JONES, F.A.
8224
JONES, R.O.
7815
JONES, T.M.
7947
JUNEMANN, A.
8098
JUNG, F.
8345
JUNGBLUTH, H.
8324*
JUUL, A.H.
7894*
KABRAWALA, V.N.
8377
KAGAN, YU.S.
8339
KALANT, H.
7888*, 7971
KALDOR, J.
8347*
KALINKE, H.
8389
KALOUSEK, G.
8360
KANANI, S.R.
8497
KANISCHEV, P.A.
8043
KANOH, H.
7781*
KAPANDJI, M.
8097
KARACADAG, S.
8003*
KASTNER, D.
8345
KATO, R.
7960, 7967
KATSUBE, Y.
8008*
KATTERMANN, R.
8318*
KAVIN, H.
8011*
KAWANO, N.
8303
KAWASHIMA, T.
8087*
KAZMERS, N.
8405
KEATS, T.E.
8191
KELLER, H.L.
8399
KELLOCK, T.D.
8180*
KENT, D.C.
8487*
KEPPLER, D.
8376*
KERA, K.
8321*
KETTNER, W.
8153, 8332
KHANNA, J.M.
7888*, 7971
KHARAT'YAN, A.M.
8171

KHLEBNIKOVA, I.M.
8355
KHODYKIN, A.V.
8336

KHOVANSKAYA, M.G.
8286
KIENECKER, D.
8063
KIESEWETTER, W.B.
8192
KIM, M.C.C.
8462
KIMENIS, A.A.
7867
KIMMICH, G.A.
7825*, 7982*
KIN, T.
8004*
KINDLER, U.
8007*
KIRSNER, J.B.
8218
KISHI, T.
7893*
KITTLICK, P.D.
7975, 7976
KLEIMENOVA, I.I.
8365
KLEIN, H.J.
8105
KLEINIG, H.
7789*
KLIMAN, M.R.
8464
KLINGER, W.
7898*
KLOTZ, H.P.
8383
KLUGE, T.
8276
KNECHTGES, T.C.
8144
KNIGHT, R.
8497
KOBAYASHI, S.
8118
KOCH, D.
8007*
KOCH, H.
8109
KOCMIERSKA-GRODZKA, D.
7988
KODAMA, Y.
7928
KOFLER, E.
7959
KOGURE, K.
8088*

KOHATSU, S.
7874

KOHEIL, A.
7866*
KOHLER, J.J.
8103
KOLOKOLOV, A.R.
8388
KONCHALOVSKAYA, N.M.
8336
KONOPLIA, P.P.
8150
KONRAD, D.
8274
KONTUREK, S.J.
7861*
KOROTKORUCHKO, V.P.
7974
KOSITCHEK, R.J.
8309
KOTT, E.
8380
KOTT, I.
8380
KOWALEWSKI, K.
7866*
KOWLESSAR, O.D.
8003*
KOZLOV, V.I.
7997
KOZUKA, S.
8305
KRAFT, S.C.
7985*
KRASHENINNIKOV, O.A.
8454
KRASNICKA, Z.
8272*
KRATZER, G.L.
8198
KRAVVIC, H.
8380
KREBS, H.A.
7903*
KREMER, K.
8076

KREMER, M.
8488
KREMLI, S.M.
8286
KRISHNAN, P.S.
7969
KRONDI, A.
7846
KRONERT, H.
7932
KROPP, R.
8324*
KRUBWA, F.
8439
KRUH, J.
7800
KRYLOVA, O.M.
8355
KUBLER, W.
7851
KUDRMANN, J.
8210, 8220
KUHL, I.
8274
KUHLMANN, W.D.
7822
KUHN, H.
8024
KUHN, H.A.
8289
KUIPER, D.H.
8005*
KULCSAR, A.
8319*
KULCSAR-GERGELY, J.
8319*
KULAGIN, O.M.
8339
KULIK, V.P.
8147
KUMAKURA, K.
8004*
KUMMEROW, F.A.
7828*
KUN, E.
7968
KUPFER, D.
7953
KURITA, N.
7893*
KURODA, C.
7910*, 7911*
KURYGIN, A.A.
8041
KUZNETSOV, V.G.
8043
KUZNETSOV, V.N.
8286
KWONG, F.
7991*
LAASTUEN, L.
7948
LAATIKAINEN, T.
7837
LARY, B.
8400
LAGACHE, G.
8062, 8257
LAGADEC, B.
8453
LAL, H.
8323*
LAMB, S.G.
8349*
LAMBERT, D.L.
8009*
LANCASTER, M.B.
8500
LANDER, J.H.
7873
LANE, M.
7885*, 8268*
LANGE, P.
8345
LANGE, R.
7805
LANGENDORFF, M.
7959
LANT, A.F.
8166*
LANZA, F.L.
8436
LARDY, H.A.
7966
LASERSOHN, J.T.
8421*
LATSINIK, G.E.
8351
LAUFER, A.
8480
LAURINGER, P.
8394
LAVERDANT, C.
8362
LAVOIE, P.
8371*
LAWS, J.W.
8301
LAWSON, R.A.M.
8018
LEAR, J.
7874
LEAR, P.F.
8152
LEBEDEV, V.D.
8128
LEBER, H.W.
7733
LEBLOND, C.P.
7794*
LECHNER, G.
8075
LEE, N.M.
7968
LEELAVATHI, D.E.
7798*
LEENDERS, F.
8192
LEGER, E.
8451
LEGER, L.
8044, 8469
LEGG, M.A.
8202
LEHMAN, J.S., JR.
8487*
LEHNERT, P.
7880*
LEIBMAN, K.C.
7922*
LEIGHTON, J.
8278
LEMAIGRE, G.
8469
LEMAITRE, G.
8073
LENCZYK, M.
8127
LENHARD, J.
8457
LENRIOT, J.P.
8044
LEONARDI, M.
8047
LE QUINTREC, M.
8099
LE QUINTREC, Y.
8099, 8140
LESCH, R.
7890*, 6376*
LESHER, J.
7813
LESHER, S.
7778*, 7813
LE VEEN, H.H.
8131*
LEVENSON, S.M.
7829*, 8227*
LEVINE, M.M.
8463
LEVINE, R.J.
7796*
LEVINSON, J.D.
8118
LEVITAN, M.KH.
8212
LEVITT, M.D.
8010*
LEVY, F.
7800
LEVY, M.
7931
LEVY, M.J.
8078
LEYMARIOS, J.
8045
L'HERMINE, C.
8073, 8288, 8471
LIANG, H.
8317*
LIE, T.S.
8285
LIEBELT, A.
8268*
LIEBELT, R.A.
7885*, 8268*
LIEBESKIND, R.
8458

LIEDBERG, G.
7858
LIEN, W.M.
8263*
LILLIE, R.D.
7895*
LIN, G.
7888*
LIN, T.Y.
8310
LINARI, G.
7859*, 7878*
LINDBERG, K.
7904*
LINQUETTE, M.
8250, 8471
LISCIANI, R.
7863*
LOCKER, J.
8278
LOFT, P.M.
8322*
LOHRS, U.
7853*
LOMBARDI, R.
7798*
LONSDALE, D.
8308
LOPUKHIN, YU.M.
8286
LORANSKAYA, T.I.
8130
LORBER, S.H.
8090*
LOSSIO, M.
8495
LOTH, J.
7971
LOWE, W.C.
8465
LUBCKE, P.
8474
LUBETZKI, J.
8249
LUCAS, C.
8194
LUDEMANN, W.
8079
LUGO-DE-RIVERA, C.
8167*
LUTZ, J.
7999
MAC LEAN, N.
8226*
MACLEOD, I.R.
8089*
MAC MAHON, H.E.
8372*
MADAPPALLY, M.M.
7935, 7949
MADGE, S.E.
8069
MAGEE, D.F.
7879*
MAHAJAN, S.K.
8378
MAIDANOVA, [illegible].V.
7963
MAINWARING, A.R.
8145
MAKOS, R.P.
8129
MALETTE, L.F.
7951
MALINOW, M.R.
7948
MANI, J.C.
7973
MANIER, J.W.
8030
MANN, C.V.
7855
MARATKA, Z.
8210, 8219, 8222
MARGOLIS, S.
8169*
MARGULIS, A.R.
8068
MARKO, O.P.
8212
MARLEAU, D.
8371*
MARQUAND, J.
8256
MARSTON, A.
8206
MARTENS, L.A.
7978
MARTIN, F.
8089*
MARTIN, H.F.
8009*
MARTULA, M.
8406
MARUYAMA, M.
8004*
MASLENNIKOVA, L.D.
8002
MASSAIOLI, N.
8246
MASSARI, N.
7934
MATEEV, A.A.
8350
MATHIEU, O.
7936
MATSUDA, T.
8283
MATSUMOTO, T.
8087*
MATTHEWS, D.M.
8166*
MAURER, W.
8375*
MAVLANOV, F.
8171
MAXIMENKOVA, A.N.
8147
MAYDAY, G.R.
8253
MAZINGARBE, A.
8469
MC AFEE, J.G.
8038
MC BEE, J.W.
8121
MC CANCE, R.A.
8483
MC CLEERY, J.L.
7985*
MC CLENNAND, R.N.
8028
MC CRAY, R.S.
8037
MC DONALD-GIBSON, W.
7913*
MC KAY, R.T.
8139
MC KELL, W.M., JR.
8342
MC KINNEY, A.S.
8375*
MC LAUGHLIN, C.W.
8402
MC LAUGHLIN, P.
7948
MC LEAN, A.E.M.
8341
MC MACKEN, M.L.
7896*
MEADE, R.C.
7852*
MELLMAN, W.J.
8273*
MELMAN, E.P.
8002
MENDE, D.
7964
MENGE, H.
7827*
MENICK, F.
8462
MERANZE, D.R.
8086*
MERLO, G.
8235
MESMACQUE, R.
8471
MEYERS, H.I.
8142*
MEYMANDI
8231
MICHAELS, M.
8112
MICHEL, J.F.
8500
MICHEL, R.
8490
MILEWSKI, R.
8016
MILLER, M.J.
8021
MILLER, T.R., JR.
7951
MILNE, M.D.
8166*
MINDER, R.
7944
MININ, V.V.
8150
MIRCHEFF, A.K.
7836*
MISTRY, S.P.
7935, 7949

MITASOV, I.G.
8254
MITCHELL, D.N.
8157*
MITUS, A.
7984*
MIYAI, K.
8330
MOERTEL, C.G.
8443
MOHME-LUNDHOLM, E.
7854*
MOLLER, C.
8184
MONIF, G.R.G.
8482
MONTGOMERY, C.
8055*, 8079
MOODY, F.G.
7933*
MORA, L.O.
8342
MOREAU, J.
8140
MORGAN, A.
8187, 8252
MORGANROTH, J.
8162
MORISSET, J.A.
7882
MORSON, B.C.
8160, 8207
MOSCHINSKI, D.
8060
MOSHYEDI, A.
8067
MOSSAKOWSKI, M.J.
8272*
MOSSE, A.
8383
MOUCHET, A.
8256
MOULLE, P.
8451
MOUZAS, G.I.
7905*
MUCKLOW, F.S.
8437
MUKERJEE, A.B.
8393
MULCARE, D.P.
8178
MULHOLLAND, D.D.
8030
MULLER, C.
8074
MULLER, M.A.
8493
MULLER-BUCHHOLTZ, W.
7823, 7983*
MULTANI, J.S.
7785*
MUNDAY, K.A.
7834*
MUNRO, A.I.
8025
MURATA, F.
8097*
MURLAGA, S.E.
8046
MURRAY-LYON, I.M.
8301
MUSSO, M.
8235
MUTALIK, G.S.
8494
MYERS, R.N.
8401
NACCARATO, R.
8387
NAGAI, K.
7916*
NAHON, M.
8495
NAIKEN, V.S.
8432
NAKADA, Y.
8316*
NAKAGAWA, Y.
8004*
NAKAMURA, S.
8321*
NAKAMURA, T.
8321*
NAKANO, H.
8004*
NAKANO, K.
7823*
NASRALLAH, S.M.
8168*
NASSAL, J.
8000
NASTA, A.G.
8403
NATARAJAN, K.
8348*
NATHAN, H.
8444
NAVAR, F.
8164*, 8170
NAYLOR, H.G.
8201
NEGRI, S.
7934
NELSON, R.S.
8436
NICOARA, G.
8020
NIELSEN, J.
8182
NIELSEN, P.F.
8085
NIESSING, J.
7915*
NILSSON, G.
7955
NISHIMURA, F.T.
7957
NISTICO, G.
7965
NITSCHKE, M.
8153
NOLAN, D.J.
8036
NOLL, F.
7809
NOLL, W.E.
7796*
NORBACK, D.H.
8322*
NORDGREN, H.
7773*
NORELLI, M.T.
8359
NORMAL, A.W.
7836*
NORMANN, E.
8081
NORTHFIELD, T.C.
8425*
NOVIKOV, K.V.
8041
OATES, M.D.C.
7772*
OBERHELMAN, H.A., JR.
7874
OBOSHI, S.
8088*
OEHLERT, W.
8376*
OGATA, K.
7910*, 7911*, 7916*
OGATA, T.
8087*
OKUMURA, Y.
8316*
OLIVIER, C.
8200
OLIVIER, CL.
8427
OLKOWSKI, Z.
8406
OLLIVIER, R.
8413
O'MARA, R.F.
8039
O'NEILL, J.A., JR.
8442
ONG, G.B.
8419
ONODA, K.
7967
ONODERA, A.
8321*
ORLOFF, M.J.
8370*
ORLOVA, L.V.
7954
ORR, W.
8336
ORTMANS, H.
8367
OSNOS, M.
8270*
OSTROWITZ, A.
8395*
OSZACKI, J.
8127
OTTENJANN, R.
8064, 8104
OTTO, H.F.
8091*
OZA, G.G.
8377

PADIS, N.
8401
PAILTHORP, K.G.
7842
PALMADE, G.
8469
PALMER, F.D.
8071, 8465
PALMER, H.F.
7842
PANAYOTOV, D.N.
8340
PANTEA, R.
8354
PAOLINI, F.
8403
PAPADOPOULOUS, N.M.
8264*
PAPI, J.A.
8495
PARASHCHAK, A.P.
8133
PARIS, J.
8093, 8100, 8250
PARIS, J.C.
8093, 8158, 8288
PARK, C.R.
7951
PARKE, D.V.
7841
PARKER, A.M.
8294
PARONETTO, F.
8326*
PARSONS, V.A.
8301
PARTRIDGE, R.
7953
PARTURIER-ALBOT, M.
8159
PASCAL, J.P.
7987
PASSARO, E., JR.
8433
PATACQ-CROUZET, J.
8356
PATHAK, M.A.
8269*
PAUMGARTNER, G.
8394
PAVLAS, J.
8116
PAVLICA, P.
8119
PAYARD, J.
8228
PAYARD, J.M.
8228
PEETERS, R.
8012*
PEISACH, J.
7801
PELLER, P.
8460
PENFOLD, E.
8006*
PENTTILA, A.
8327*
PEREMITINA, A.D.
8339
PERISSAT, J.
8015
PERKINS, E.G.
7829*
PERKINS, J.R.
7903*
PERLEY, A.
7948
PERSSON, C.G.A.
7858
PETCHKLAH, S.
8496
PETERMANN, M.L.
7784*
PETERS, R.L.
8035
PETRESCU, C.
8455
PFEIFFER, R.R.
7843
PFLEIDERER, T.
8392
PHEILS, M.T.
8253
PHILIBERT, H.
8356
PHILLIPS, S.F.
7845
PICARD-LEROY, G.
8229
PICCINELLI, D.
8132*
PICCIOLI, R.
8473
PIETRUSZKO, R.
7973
PILCHMAYR, I.
8361
PIMPARKAR, B.D.
8052
PINCHUK, V.G.
7974
PITOT, H.C.
8265*
PIZA, F.
8431
PIZZOLATO, P.
7895*
PLATONOV, O.M.
7974
PLESTED, W.G.
8083
POILLEUX, J.
8453
POKIESER, H.
8075, 8431
POLCAK, J.
8214
POLISHCHUK, A.S.
7974
POLLARD, H.M.
8005*
POLLIACK, A.
8480
POLOTSKII, YU.E.
8475
PONKA, J.L.
8197
POPE, C.E., II
8070
POPOVA, E.A.
7869
POPOVA, T.B.
8336
POPPER, H.
7991*, 8326*, 8386
PORTUGAL, F.H.
7771*
POSCH, J.
8017
POSTLETHWAIT, R.W.
8111
POTET, F.
8251
POTTER, V.R.
7902*
POTYK, D.
8154
POULSEN, H.
8298
POWELL, C.
7774*
PRATT, J.L.
8176
PREVITE, J.J.
8461
PREZIOSI, P.
7965
PRICE, W.F.
8111
PRICHARD, J.S.
7989
PRIZONT, R.
8169
PROCACCIA, S.
7734
PROLLA, J.C.
8118
PRONASZKO, A.
8272*
PRONI, G.
8457
PROYE, C.
8073
PURI, S.K.
8323*
PUTZKE, H.P.
7790*
QUANDALLE, P.
8456
QUAY, J.F.
7843
QUINTERO, O.
8236
QUINTYN, M.
8470
RACHMAN, R.
8112, 8432
RAFFENSPERGER, J.G.
8434
RAFTELL, M.
7774*

RAGHAVAN, P.
8052
RAICK, A.N.
8330
RAKE, M.O.
8301
RALPH, A.
7834*
RAMENOFSKY, M.L.
8434
RAMIREZ, J.L.
7892*
RAMWELL, P.W.
7913*
RAND, M.J.
7940
RAND, R.W.
8404
RAO, G.S.
7783*
RAO, K.S.
7920*
RAO, M.L.
7783*
RAPP, W.
7822
RASKIN, H.F.
8449
RAWAT, A.K.
7972
READ, R.C.
8084
RECKNAGEL, R.O.
7920*
REED, L.S.
8176
REES, R.J.W.
8157*
REID, I.M.
7788*, 8317*
REINICKE, C.
7898*
REITEMEIER, R.J.
8443
REIZIS, A.R.
8365
REMBERT, A.
8073
REMY-DEFRAIGNE, J.
7936, 7988
RENKAWEK, K.
8272*
RETTORI, R.
8427
REUTER, A.M.
7936
REUTTER, W.
8376*
REYNES, M.
8200
RHODES, J.M.
7839
RIBET, A.
8467
RICHARDS, A.J.
8166*
RICHTER, H.
8394
RIECKEN, E.O.
7827*
RIND, H.
8177
RITCHIE, A.C.
8330
RIVAROLA, C.H.
8084
RIVLIN, R.S.
8270*
ROBINSON, M.
8333
ROCHE, A.C.
7840
RODIONOV, G.A.
8339
RODIONOV, V.M.
7954
RODRIGUEZ, R.S.
8404
RODRIGUEZ-DE-CURET, H.
8167*
RODRIQUEZ, A.
7896*
ROE, C.G.
8209
ROGERS, S.
8273*
ROIN, J.
8296
RONGEY, K.
8363
ROSATI, G.
7826*
ROSATO, F.F.
8181, 8208
ROSCH, J.
7993*, 8420*
ROSE, C.I.
7912*
ROSE, R.C.
7844
ROSEN, H.
8370*
ROSEN, R.G.
8248
ROSENAK, B.D.
8479
ROSENBERG, J.C.
7804
ROSENBERG, P.
8442
ROSER, H.
8023
ROSS, G.
8420*
ROSS, H.
7883*
ROTH, H.
8135
ROTHBERG, R.M.
7985*
ROUCAYROL, J.C.
8044
RUBENSTEIN, E.
8360
RUBERT, M.
8374*
RUBET, A.
8457
RUBIN, P.
8209
RUBULIS, A.
8374*
RUDAITENE, A.P.
8337
RUDDON, R.W.
7907*
RUDIGER, J.
8376*
RUDMAN, D.
8375*
RUSCHKE, G.
7849
RUTISHAUER, I.H.E.
8483
RUTTER, W.J.
7780*
RYTTER, D.J.
7962
RYWLIN, A.M.
8333
SACCONE, C.
7939
SACOMAN, N.
7821
SADLINSKI, C.
8406
SAHBA, M.M.
7882
SAILER, R.
8060
SAKAGUCHI, N.
8004*
SAKSELA, E.
8184
SALEMBIER, M.Y.
8230
SALI, A.
8315
SALTMAN, P.
7785*
SAMAJA, U.
7934
SAMODUMOVA, G.A.
8407
SAMUELS, H.H.
7900*
SAMUELS, L.D.
8280
SANCHEZ, R.F.
8433
SANDBANK, U.
8380
SANDBERG, J.S.
8429
SANJO, T.
8398*
SANTAMBROGIO, C.
7934
SAPOZHKOVA, M.YA.
7996
SARASIN, G.
8485*, 8486*
SARTONI GALLONI, S.
8119

SASAME, H.A.
7918*, 7925
SAUNDERS, S.J.
8001
SAWAF, G.
8316*
SCHADE, S.G.
7832*
SCHAEFER, J.W.
8243*
SCHAFER, K.H.
8217
SCHAFFNER, F.
7901*
SCHALLER, J.
8267*
SCHAUB, J.
8460
SCHAUMLOEFFEL, E.
7827*
SCHEIN, C.J.
8416
SCHELLER, C.
7957
SCHERER, H.
8149
SCHEUER, P.J.
8387
SCHIANTARELLI, P.
7826*
SCHIER, J.F.
7866*
SCHIMKE, R.T.
7899*
SCHINDLER, S.C.
8243*
SCHLOSSER, H.
8320*
SCHMIDT, E.
8063
SCHMIDT, H.
8245
SCHMITT, W.
8390
SCHNACK, H.
7924
SCHNEIDER, D.I.
7919*, 8279
SCHOLTHOLT, J.
7994*, 7995*
SCHRAGER, J.
7772*, 7803
SCHREIBER, G.
7890*
SCHREIBER, J.
8307
SCHROTER, W.
7776*
SCHULTZ, S.G.
7844
SCHULTZE, B.
8325*
SCHUMAN, B.M.
8163
SCHWARTZ, S.I.
8209
SCKENKMAN, I.R.
7901*
SCOTT, F.
8021
SCOTTI, A.
8114
SEAKINS, J.M.T.
8313
SEELIG, L.L., JR.
8328*
SEGAL, S.
8273*
SEIBERT, R.A.
7943
SEIDEL, E.
8293
SEIFTER, E.
8227*
SEKERIS, C.E.
7915*
SELKE, A.C.
8108
SELMAIR, H.
8367
SELTZER, M.U.
8208
SERAPINAS, I.I.
7806
SESHANARAYANA, K.N.
8191
SEVERS, W.B.
7993*
SHAFRIR, E.
7889*
SHAH, M.N.
8306
SHAH, R.M.
8377
SHAMPINE, J.
8461
SHARMA, B.N.
8049
SHAW, J.F.
7913*
SHCHELOKOVA, A.V.
8254
SHEARER, T.R.
7914*
SHELDON, G.F.
8232
SHERLOCK, S.
8343, 8346*, 8387
SHIMIZU, M.
8008*
SHIMKIN, M.B.
8086*
SHIMOJO, T.
7781*
SHINOZUKA, H.
7787*, 7788*, 8317*
SHIRAISHI, T.
7995*
SHIRES, G.T.
8028
SHISHIDO, M.
8008*
SHISHOVA, E.K.
7808, 8155
SHIU, M.H.
8303
SHOEMAKER, W.C.
8283
SHULL, K.H.
8317*
SIDRANSKY, H.
7788*
SIE, H.G.
7923
SIEBER, W.K.
8192
SIGDESTAD, C.P.
7778*
SILEN, W.
7862*, 7883*, 8137
SILVA, Y.J.
8385
SILVERBERG, S.G.
8189
SILVESTRINI, B.
7863*
SIMON, J.
8172
SIMONSEN, F.F.
8296
SINGER, H.C.
8118
SIPERSTEIN, M.D.
8275
SIPLET, H.
8090*
SIRCUS, W.
8054, 8089*
SITARAMAYYA, A.
7969
SKEIE, E.
8298
SKILIFTER, D.N.
7968
SKILLMAN, J.A.
8137
SKLAR, M.
8446
SLADEK, N.F.
8265*
SLEGERS, J.F.G.
7824
SMALL, W.P.
8238
SMIALEK, M.
8272*
SMIRNOVA, S.A.
8355
SMITH, A.N.
8234
SMITH, B.
8077
SMITH, F.E.
7885*
SMITH, G.
7929
SMITH, G.W.
7905*
SMITH, S.
7943
SMITH, T.
8425*
SNEIDER, T.W.
7902*

SNOSWELL, A.M.
7970
SNYDER, W.H.
8117
SOBERON, G.
8373*
SOLIMANO, G.
8426
SOLING, H.D.
7964
SOMEYA, N.
8004*
SOMMERSCHILD, H.
8276
SONNTAG, H.G.
7823, 7983*
SOPER, R.T.
8108
SOPIN, E.F.
8338
SORICE, G.
8403
SOROKINA, I.B.
8287
SOSKIN, A.M.
8351
SOTTANO DE RUSSO, F.
7847
SOUTHCOTT, F.D.C.
8205
SPARRER, E.
7958
SPEZIA, C.A.
7874
SPIELVOGEL, A.
7836*
SPINGOLA, L.J.
8131*
SPOONER, R.S.
7780*
SPRATT, J.S., JR.
8196
SREE KUMAR, K.
7969
STAALAND, H.
7905
STADELMANN, O.
8022, 8059, 8064
STAHLHEBER, H.
7880*
STANESCU, M.
8455
STARINSKY, R.
7889*
STARINSKY, V.V.
8042
STAUDINGER, H.
7886*, 7921*, 7933
STECKEL, R.J.
8420*
STEFFENELLI, N.
7924
STEIGMANN, F.
8306
STEIN, J.A.
8314
STEINRUCK, H.
8353

STEMMER, E.A.
8445
STENHOUSE, A.C.
7998
STENING, G.F.
7860*
STENRAM, U.
7773*
STEPHENS, H.B.
8068
STEPHENSON, H.E.
8110
STERN, J.
8380
STEWART, J.S.
8349*
STILLER, D.
8297
STOGNY, N.A.
7981
STOLL
8204
STOLLER, J.L.
8025
STOPPA, R.
8470
STROTHER, A.
7942
SUGIMURA, T.
8088*
SULLIVAN, J.F.
8369*
SULLIVAN, R.J.
7799
SUN, P.T.
7883*, 8244
SUNDERMAN, F.W., JR.
7922*
SUNTHARASAMAI, P.
8496
SURTYA, M.
7937
SUSSMAN, H.
8271*
SUTTIE, J.W.
7914*
SWEENEY, V.P.
8269*
SWELL, L.
8381
SYDOW, G.
8295
SZANTAY, I.
8020
SZELENYI, I.
7937
TABAQCHALI, S.
8466
TADA, K.
8262*
TAFT, D.A.
8421*
TAKADA, A.
8316*
TAKADA, T.
8004*
TAKAGI, K.
8004*

TAKAHASHI, A.
7960
TAKAHASHI, T.
8004*
TAKANAKA, A.
7960
TAKEKOSHI, T.
8004*
TAKEUCHI, J.
8316*
TAL, C.
8480
TAN, K.K.
8311
TANAKA, S.
8087*
TANNENBERG, A.
8315
TARLOW, M.J.
8029
TARLOW, O.
8029
TASHIRO, N.
7857
TASHKHODZHAEV, P.I.
7808, 8155
TASSINI, T.
8047
TAYLOR, P.F.
8349*
TAYLOR, W.H.
7864*
TENCONI, L.
7934
TERBLANCHE, J.
8001
THALER, H.
8290
THAYER, W.R.
8009*, 8164
THEISINGER, W.
8149
THEMANN, H.
8284
THEORELL, H.
7973
THIROLOIX, J.
8468
THOMAS, C.G., JR.
8107
THOMAS, F.
8348*
THOMPSON, G.R.
8123
THOMPSON, J.H.
7876
THOMSON, C.G.
8054
THORPE, E.
8331
TICHONICKY, L.
7800
TIDWELL, T.
7884*
TISCORNIA, C.M.
8169

TODD, I.P.
8222, 8225
TOLINS, S.H.
8411
TOMITA, T.
7957
TOMKINS, G.M.
7900*, 8264*
TOPCHIASHVILI, Z.A.
8409
TORKHOVSKAYA, T.I.
8287
TORRES-PINEDO, R.
8167*
TOSHKOV, A.
7848
TOSKES, P.P.
8449
TOUHAMI, M.
8134
TOURY, P.
7931
TOYAMA, W.M.
8195
TOYE, D.K.M.
8141
TRAEGER, A.
7898*
TRAKHTENBERG, A.KH.
8042
TRENCIS, L.
7862*, 7883*
TRIBUKAIT, B.
7904*
TRINKER, F.R.
7940
TROGNON, B.
8158
TROP, D.
8012*
TRUB, C.L.P.
8017
TRUONG, T.K.
8485*, 8486*
TRYFIATES, G.P.
7927
TSCHUDY, D.P.
8314
TSUDA, H.
8087*
TSUDZEVICH, B.O.
8338
TURNBULL, R.B., JR.
8221
TURNER, G.
7952
TUTIN, M.
8247
TUXFORD, A.F.
8423*
UEKI, M.
7910*, 7916*
ULLRICH, V.
7886*, 7921*
URBAN, A.
8127
URBINA, A.M.
8426

VACHHA, S.M.
7828*
VAILLET, A.
8371*
VAISBROT, V.V.
8155
VALENZUELA, I.
8426
VALLIN, J.
8101
VAN DEN BERG, J.W.O.
7986*
VANDEPITTE, J.
8439
VAN DER LINDEN, W.
7894*
VAN HOOK, E.
7948
VANKEMMEL, M.
8257, 8471
VAN OS, C.H.
7824
VAN OYE, E.
8439
VAN ZWIETEN, P.A.
7875
VAYESSE, N.
7987
VEDEL, J.P.
8072
VEIDENHEIMER, M.C.
8202
VELICHKO, L.A.
8339
VENEZIALE, C.M.
7966
VICKERS, T.H.
8481
VICTOR, G.
8050
VIDNE, B.
8078
VIDO, I.
8367
VIGUIE, R.
8451
VILOTTE, J.
8469
VIRAVAN, C.
8496
VISCHER, T.L.
8364*
VISHNEVSKAYA, YU.S.
8336
VISHNEVSKY, A.S.
8336
VITEBSKY, YA.D.
8126
VITULOVA, V.
8214
VLAHCEVIC, Z.R.
8381
VOLKMANN, H.
7898*
VOLKOVA, I.S.
8130
VON BASSEWITZ, D.B.
8284

VORONINA, L.YA.
8339
WAGGER, G.M.
8449
WAHAB, M.F.A.
8487*
WAHRENBERG, I.
7898*
WALKER, R.J.
8039
WALLACH, R.
8271*
WALTHER, B.T.
7780*
WARBURTON, B.
8498
WARNER-SCHIECK, R.
8000
WASSER, N.R.
8475
WATSON, D.W.
8162
WATSON, F.R.
8196
WATSON, W.P.
8415

WATTIAUX, R.
7810
WATTIAUX DE CONINCK, S.
7810
WATTS, J.MCK.
8315
WEBB, J.H.
8226*
WEBSTER, P.D.
7882
WEDGWOOD, R.J.
8267*
WEILL, J.
8258
WEINER, M.
8420*
WEINFELD, C.
8450
WEINFELD, JUIN
8450
WEINSSEN, U.
7890*
WEISS, J.B.
8037
WEITZNER, S.
8302
WENCKERT, A.
8183
WENGER, J.
8006*
WEPLER, W.
8391
WERLE, E.
7880*
WESTERN, J.R.H.
7777*
WESTPHAL, A.
8490
WHEELER, M.
8400

WHITE, T.T.
8252, 8438
WHITELEY, H.W., JR.
8199
WHITT, F.D.
7947
WIDMAIER, F.
8211*
WIEBECKE, B.
7853*
WIEDEMANN, I.
7968
WILD, R.A.
7873
WILDGRUBE, J.
8307
WILDHIRT, E.
8367
WILKEN, D.R.
7896*
WILLEN, R.
7773*
WILLETTS, P.F., JR.
8110
WILLIAM, M.
8461
WILLIAMS, G.D.
8084
WILLIAMS, J.A.
8141
WILLIAMS, R.
8301
WILLMS, B.
7964
WILSON, S.E.
8083
WINBORN, W.B.
8328*
WIONTZEK, H.
8358
WIRTS, C.W.
8003*
WISE, W.S.
8084
WISSE, E.
7791*
WITTENBERG, J.
8010*
WOESTIJNE, K.P.
8012*
WOHLENBERG, H.
8459
WOHLRAB, F.
8382
WOLF, R.H.
8447
WOLFF, G.L.
7908*
WOLFRUM, D.I.
8318*
WONG, E.H.A.
7951
WOODRUFF, A.W.
8497
WOODS, J.M.
8261
WOODS, J.S.
7897*
WOODWARD, E.R.
8136
WORMSLEY, K.G.
7881*, 8040
YAMADA, K.
7957
YAROPOLOV, V.I.
8150
YASTREB, N.I.
8092
YATSENKO, L.A.
8352
YOFFA, D.
8315
YOSHIDA, T.
8262*
ZACHARIAE, F.
8085
ZAHRINGER, J.
7890*
ZAUNBAUER, W.
8075
ZBORALSKE, F.F.
8055*, 8079
ZHIGILEVA, V.I.
8351
ZHIVKOV, V.I.
8340
ZHURBIN, G.I.
7981
ZIEGLER, A.
8390
ZIEGLER, D.M.
7891*
ZILF, M.
7990
ZILLETTI, L.
7856
ZIMMER, K.
8324*
ZINOVYEV, I.I.
8150
ZOBEL, H.
8460
ZUCKERMAN, A.J.
8349*
ZUFAROV, K.A.
7808, 8155
ZUIDEMA, G.
8011*

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- ABDOMEN
  - ACUTE, ANTICOAGULANTS, INTESTINAL HEMORRHAGE, THERAPY (8478)
  - BLUNT TRAUMA (8462)
  - EXPLORATORY LAPAROTOMY, DIAGNOSTIC PROCEDURE, INDICATIONS (8032)
  - PAIN, SURGERY (8438)
  - TRAUMA, PANCREATIC INJURY, SURGERY (8232)
- ABSORPTION
  - DIGESTION, AGE DEPENDENCY, GASTROINTESTINAL TRACT (7849)
  - ELECTROLYTES, WATER, RECTUM, COLON, MAN (7845)
  - FOOD LOAD, MUCOSA, ENZYMES (7827)*
  - HYDROGEN ION, SODIUM, GASTRIC MUCOSA (7833)*
  - ILEUM POTENTIAL, ALANINE, GLUCOSE (7844)
  - INTESTINAL, GASTRITIS, RESORT TREATMENT (8129)
  - INTESTINE, FOOD INTERACTION, DRUG INTERACTION, RAT (7846)
  - INTESTINE, PHARMACOKINETICS, MATHEMATICAL PROCEDURES (7851)
  - IRON, GASTROINTESTINAL TRACT, COBALT (7832)*
  - IRON, QUANTITATION, WHOLE-BODY COUNTING (7842)
  - JEJUNUM, IMPAIRED, AMINO ACID (7835)*
  - LYMPH, CORN OIL, EXCRETION (7828)*
  - NITROGEN, FAT, MINERALS, KWASHIORKOR, CHILDREN (8483)
  - PERITONEAL CELL, 125 I LABELED HUMAN SERUM ALBUMIN, MOUSE (7839)
  - RADIOIRON, NEOMYCIN, GERMFREE RATS (7829)*
  - SMALL INTESTINE, EPITHELIAL CELL, CARBOHYDRATE METABOLISM (7989)
  - STOMACH POUCH, SURFACTANT, HYPERABSORPTION (7843)
  - SUCROSE, METABOLITE, INTESTINE (7850)
- ACHALASIA
  - NEUROLOGICAL, LESION, ACHALASIA (8077)
  - NEUROMUSCULAR MECHANISM, ESOPHAGEAL HISTOLOGY, RADIOLOGY (8068)
- ACID
  - PEPSIN, ACUTE ESOPHAGITIS MODEL (8055)*
- ADENOCARCINOMA
  - APPENDIX, PSEUDOMYXOMA PERITONEI, NEURAMINIDASE (8208)
  - EXCLUDED LOOP OF ILEUM, REGIONAL ILEITIS, SURGERY (8163)
- ALBUMIN
  - DEGRADATION, IRRADIATION, PERFUSED INTESTINE (7988)
  - SYNTHESIS, LIVER, DISTRIBUTION (7890)*
- ALCOHOL
  - LIVER INJURY, CIRRHOSIS, DIABETES, CCL4 (8316)*
- AMEBIASIS
  - INTESTINAL, METRONIDAZOLE TREATMENT (8501)
- AMINO ACID
  - CATABOLISM, ENZYMES, LIVER (7893)*
- AMYLASE
  - ACUTE PANCREATITIS, EDEMA, NECROSIS (8257)
- ANASTOMOSIS
  - COMMON BILE DUCT, MICROSURGERY, DOG (8404)
  - ESOPHAGEAL PROSTHESIS, THORACIC SEGMENT, DOG (8056)
  - PORTACAVAL, INFECTION, FAILURE (8430)
- ANEURYSM
  - SPLENIC ARTERY, UPPER GASTROINTESTINAL BLEEDING, SURGERY (8476)
- ANTIBIOTIC
  - RESISTANT SHIGELLA, EPIDEMIC, CENTRAL AMERICA (8463)
  - TETRACYCLINE, FATTY LIVER (8333)
- ANTIBODY
  - DESTRUCTION, INTESTINAL JUICE, PROTEINASE INHIBITOR (7983)*
  - FECES, IMMUNIZATION, RABBIT (7985)*
  - FLUORESCENT, SCHISTOSOMIASIS, EVOLUTION (8485)*
- ANTIGEN
  - AUSTRALIA, HEPATITIS, ACUTE VIRAL (8353)
- ANUS
  - ANAL CANAL, SQUAMOUS CELL CARCINOMA, MELANOMA (8184)
  - IMPERFORATE, ADULT, SURGERY (8195)
- APPENDIX
  - MUCINOUS ADENOCARCINOMA, PSEUDOMYXOMA PERITONEI NEURAMINIDASE (8208)
- ASCITES
  - CHRONIC, PANCREAS, PSEUDOCYST (8243)*
- ATRESIA
  - ANUS, ADULT, SURGERY (8195)
  - GASTRIC ANTRUM, SURGERY (8097)
- BACTERIA
  - DIAGNOSTIC PROCEDURE, FLUORESCENT IMMUNOTEST, ENTEROPATHOGENIC COLI (8017)
  - E. COLI, ENTEROPATHOGENIC, DIARRHEA (8424)*
  - E. COLI, INTESTINAL PENICILLIN RETENTION, GUINEA PIG (7848)
  - E. COLI, GASTROENTERITIS, ANTIBIOTICS, INFANTS (8435)
  - GRAM NEGATIVE, SEPSIS, PERITONITIS (8152)
  - MYCOBACTERIA, FECES, MAN (8000)
  - SMALL INTESTINE, PATHOPHYSIOLOGY, MAN (8466)
- BACTERIAL DISEASE
  - SALMONELLOSIS, SALMONELLA TYPHIMURIUM ROUGH MUTANT (8422)*
- BILE
  - ACUTE PANCREATITIS, PATHOGENESIS (8244)
  - EXCRETION, CONTRAST MEDIA, PLASMA PROTEIN BINDING (7826)*
  - EXCRETION, STEROID HORMONES, MAN (7837)
  - FLOW, INTESTINAL PHASE, REGULATION (7883)*
  - MICELLE UPTAKE, IMIPRAMINE, DESMETHYLIMIPRAMINE, METABOLISM (7944)

- PROTEINS, GALLSTONES, ANTISERA (8396)•
- SUSPENSION, GALLSTONE (8395)•

BILE ACID
- ABNORMAL METABOLISM, CIRRHOSIS (8381)
- CHOLESTEROL, NEOMYCIN, COLCHICINE (8374)•
- LIPID, FECAL EXCRETION, CHOLERESIS (8307)

BILE DUCT
- ASCARIASIS, PANCREATITIS, DIAGNOSIS, TREATMENT (8495)
- AUTOLOGOUS, VENOUS PROSTHESIS, VENOUS DUODENAL ANASTOMOSIS, DOG (8403)
- CICATRICIAL STENOSIS, SURGERY, COMPLICATIONS (8409)
- STONE REMOVAL, EXTRAPERITONEAL PROCEDURE (8418)

BILIARY TRACT
- CHOLANGITIS, SCLEROSING, STEROID (8401)
- GALLSTONE, FATTY ACID-CALCIUM, HISTOCHEMISTRY (8398)•
- OBSTRUCTION, SGOT, LACTATE DEHYDROGENASE (8397)•
- OBSTRUCTIVE CIRRHOSIS, CASE REPORT (8372)•
- SURGERY, CHOLELITHIASIS, BILE DUCT CANCER, SOUTH VIETNAM (8413)

BILIRUBIN
- HYPERBILIRUBINEMIA, ALBUMIN, FREE FATTY ACIDS (7889)•
- METABOLISM, TRANSFER, CONJUGATION, GLUCORONYL TRANSFERASE DEFICIENCY (7956)

BLOOD
- ALTERATIONS, LIVER DISEASE, VITAMIN B12 (8291)
- CLOTTING FACTORS, PROTEIN, CIRRHOSIS (8389)
- SCREENING, AUSTRALIA ANTIGEN, VIRAL HEPATITIS (8363)
- TRANSFUSION, SERUM HEPATITIS, EPIDEMIOLOGY, GAMMA GLOBULIN CONTROL (8361)

BLOOD FLOW
- INTESTINE, CAPILLARY AND NEURO-CELLULAR RELATIONS, MATHEMATICAL ANALYSIS (8002)

BLOOD VESSEL
- ARTERY, LIGATION, LIVER, RIGHT LOBE METASTASES, COLONIC CANCER (8450)
- CELIAC ARTERY, NONATHEROMATOUS STENOSTENOSIS, PHYSIOPATHOLOGY (8427)
- MESENTERIC VEIN, INFARCT, SMALL INTESTINE, RESECTION (8456)
- MESENTERY, VASOCONSTRICTOR INFUSION, GASTROINTESTINAL BLEEDING (8441)
- SPLENIC ARTERY ANEURYSM, UPPER GASTROINTESTINAL BLEEDING, SURGERY (8476)
- VEIN, BILE DUCT REPLACEMENT, DOG (8403)
- VISCERAL ARTERIES, STENOSIS, OBSTRUCTION (8431)

CALCIUM
- DEFICIENCY, MALABSORPTION, VITAMIN B12 (8174)

CANCER
- ANUS, ANAL CANAL, SQUAMOUS CELL, MELANOMA (8184)
- GALLBLADDER, EPITHELIAL ALTERATIONS (8408)
- GASTRIC, 5-FLUOROURACIL PERIPHERAL BLOOD MORPHOLOGY (8125)
- GASTROINTESTINAL, CHEMOTHERAPY, 5-FLUOROURACIL (8436)
- GASTROINTESTINAL, COMBINATION CHEMOTHERAPY (8443)
- PRIMARY, LIVER, GALLBLADDER, ORTHOTOPIC AND HETEROTOPIC LIVER HOMOGRAFTS (8302)
- PRIMARY, LIVER, HEPATOMA, CHOLANGIOMA (8310)
- SIGMOID, VISCERA, COLLAGENOSES, IMMUNOLOGY (8472)
- STOMACH, INCIDENCE, SURGERY, MORTALITY RATE (8110)

CARBOHYDRATE
- METABOLISM, GLYCOLYSIS, PENTO PHOSPHATE SHUNT, HEPATOMA (8295)

CARCINOGEN
- LIVER, 4-DIMETHYLAMINOAZOBENZENE, HISTOCHEMISTRY (8282)

CARCINOGENESIS
- DIACETAMIDOFLUORENE, LIVER, RESERPINE INHIBITION, MOUSE (8305)
- LIVER, DIETHYLNITROSAMINE, SORBITOL DEHYDROGENASE, RAT (8297)
- LIVER, DNA SYNTHESIS, AZO DYE (7902)•
- LIVER, REGENERATION, NUCLEAR DNA TRANSFER (7974)

CARCINOMA
- ARGENTAFFIN, MESENTERIC CIRCULATION, SCLEROSIS (8151)
- CECUM, ABDOMINAL WALL, PROGNOSIS (8276)
- COLON, RECTUM, POLYPS (8202)
- COLON, SURGERY, SUBCUTANEOUS EMPHYSEMA (8195)
- COLON PERFORATION, RADIOGRAPHY, COLOSTOMY (8201)
- COLORECTAL, METASTASIS, LYMPH NODES (8196)
- ESOPHAGUS, RADIATION THERAPY, ESOPHAGOGASTRECTOMY (8083)
- GALLBLADDER, EXTRAHEPATIC BILE DUCT (8402)
- GASTRIC, ENZYMES, PROGNOSIS (8087)•
- HEPATOCELLULAR, DNA-LIKE RNA, CYTOPLASM (8265)•
- PANCREAS, EARLY DIAGNOSIS, SURGERY (8239)
- RECTUM, SURGERY, ENDORECTAL RESECTION (8183)
- SMALL INTESTINE, SARCOMA (8149)
- STOMACH, ESOPHAGEAL STENOSIS, PROSTHESIS (8060)
- STOMACH, HISTOPATHOLOGY, SECRETION (8086)•
- STOMACH, MORPHOLOGY, SURGERY, LIFE EXPECTANCY (8127)
- OBSTRUCTIVE, COLON, CECOSTOMY (8182)

CECUM
- CARCINOMA, ABDOMINAL WALL, PROGNOSIS (8276)

  - PERFORATION, ADYNAMIC ILEUS, INTESTINAL DISTENSION (8194)
  - VOLVULUS, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (8193)
- CELIAC AXIS
  - CHRONIC STENOSIS, AORTOGRAPHY, SURGERY (8453)
  - EXTRINSIC STENOSIS, SURGERY, MOTILITY (8452)
  - STENOSIS, VISCERAL ANGIOGRAPHY, SURGERY (8451)
- CELL
  - ACINAR, PANCREAS, PENTAGASTRIN, RAT (8309)
  - ACINAR, PANCREATITIS (8260)
  - DAMAGE, LIVER, RAT, RABBIT (8339)
  - GROWTH INHIBITION, LIVER EXTRACT, MAN (7955)
  - ISOLATED INTESTINAL, METABOLISM (7986)*
  - MEMBRANE POTENTIAL, IONIC CONCENTRATIONS, PERFUSED LIVER (7838)
  - NUCLEAR HISTONE SYNTHESIS, LIVER REGENERATION, RAT (7954)
- CHOLANGIOGRAPHY
  - DIAGNOSTIC PROCEDURE, GALLBLADDER, GALLSTONE (8018)
  - INTRAVENOUS, DRIP INFUSION TECHNIQUE, BILIGRAFIN FORTE (8036)
  - OPERATIVE, CHOLEDOCHOPANCREATIC REFLUX, CHRONIC CHOLECYSTITIS (8041)
- CHOLANGITIS
  - ACUTE, EARLY DIAGNOSIS, BACTEREMIA, LIVER ABSCESS (8419)
  - PRIMARY SCLEROSING, STEROID (8401)
- CHOLECYSTECTOMY
  - BILIARY, ALCOHOLIC, VASCULAR, PANCREATITIS, SERUM AMYLASE (8253)
  - HEPATIC ARTERY ANEURYSM, OBSTRUCTIVE JAUNDICE, ACUTE HEPATITIS (8414)
- CHOLECYSTITIS
  - CHOLELITHIASIS, VAGAL STASIS, VAGOTOMY DOG (8416)
  - CHRONIC, OPERATIVE CHOLANGIOGRAPHY, CHOLEDOCHOPANCREATIC REFLUX (8041)
  - GALLBLADDER EMPHYSEMA, RADIOLOGY, CLINICAL FEATURES (8399)
  - WATER BALANCE, ELECTROLYTE BALANCE, SURGERY (8410)
- CHOLEDOCHOLITHIASIS
  - BILIARY TRACT SURGERY, BILE DUCT CANCER, SOUTH VIETNAM (8413)
  - ETIOLOGY, DIAGNOSIS, CHILDREN (8415)
  - EXTRAPERITONEAL PROCEDURE (8418)
  - GALLBLADDER, GALLSTONES, DIET (8400)
  - GALLBLADDER CYTOCHEMISTRY, HISTOLOGY, CHOLEDOCHOLITHIASIS (8406)
  - LIVER CELL NECROSIS, GRANULOCYTE, INFILTRATION, SURGERY (8298)
  - SPONTANEOUS RUPTURE, GALLBLADDER, CHOLECYSTECTOMY (8417)
- CHOLEDOCHUS
  - END-TO-END ANASTOMOSIS, MICROSURGERY, DOG (8404)
- CHOLERA
  - VIBRIO ENDOTOXINS, LIVER MITOCHONDRIA, KREBS CYCLE INTERMEDIATES (7978)
- CHOLERESIS
  - DRUG-STIMULATED, EXCRETION, BILE ACID, LIPIDS (8307)
- CHOLESTASIS
  - LIVER, HEPATOSIS, TREATMENT (8290)
  - LIVER, THERAPY (8289)
  - ULCERATIVE COLITIS (8216)
- CHOLESTEROL
  - LIVER, CANCER, MOUSE (8276)
- CHOLINE
  - DEFFICIENCY, BIOSYNTHESIS, PHOSPHATIDYL CHOLINE (7962)
  - DEGRADATION, ANTIBIOTICS, COPROPHAGY (7991)*
- CIRCULATION
  - ACUTE GI BLEEDING, CENTRAL VENOUS PRESSURE (8425)*
  - BLOOD VESSEL, LIVER, VEIN, INNERVATION (7996)
  - ENTEROPATHY, GAS, PORTAL VEIN (8142)*
  - HEPATIC BLOOD FLOW, DRUG EFFECTS, CHOLERESIS (7924)
  - LIVER INJURY, INTRAHEPATIC SHUNT (8321)*
  - LYMPHATICO-VENOUS SHUNTS, LYMPHANGIOMA MESENTERY (8464)
  - MESENTERIC ARGENTAFFIN CARCINOMA, SCLEROSIS (8151)
  - OCCLUSION, X-RAY DIAGNOSIS, COLOSTOMY, CECOSTOMY (8444)
- CIRRHOSIS
  - BILIARY, LIVER, HISTOLOGY, IMMUNOLOGY (8387)
  - COMPENSATED, LIVER, INDOCYANINE-GREEN TEST (8016)
  - LIVER, BILE ACIDS, ABNORMAL METABOLISM (8381)
  - LIVER, CYTOCHEMISTRY, CHILDREN (8388)
  - LIVER, ENTEROHEPATIC CIRCULATION, ERYTHROCYTES (8394)
  - LIVER, EPIDEMIOLOGY, ETIOLOGY (8377)
  - LIVER, ETIOLOGY, HISTOLOGY (8384)
  - LIVER, HEMORRHAGE, TREATMENT (8379)
  - LIVER, HEPATIC MYELOPATHY, ANATOMOPATHOLOGY (8380)
  - LIVER, KALA-AZAR INFECTION (8393)
  - LIVER, ORNITHINE-ASPARTATE MIXTURE, BLOOD AMMONIA LEVELS (8390)
  - LIVER, PATHOLOGY, IMMUNOLOGY (8386)
  - LIVER, PORTAL, NITROGEN METABOLISM (8375)*
  - LIVER, SYMPTOMATOLOGY, THERAPY (8392)
  - LIVER, UMBILICAL VEIN CATHETERIZATION, PERITONEOTOMY (8385)
  - LIVER, VENOUS PRESSURES (8371)*
  - LIVER, VIRAL HEPATITIS, SERUM LIPOPROTEINS (8266)*
  - LIVER, ZINC, COLLAGEN (8369)*
  - LIVER INSUFFICIENCY, PATHOLOGY, BIOCHEMISTRY (8393)
  - LIVER MORPHOLOGY, CHRONIC HEPATITIS, VIRAL HEPATITIS (8391)
  - LIVER SLICES, ALBUMIN SYNTHESIS (8373)*
  - OBSTRUCTIVE BILIARY, LIVER INJURY, ATRESIA (8372)*

- THIOACETAMIDE INDUCED, LIVER, DEHYDROGENASES, HISTOCHEMISTRY (8382)

COENZYME
- Q, LIVER MITOCHONDRIA, HYPERTHYROIDISM (7909)*

COLITIS
- GRANULOMATOUS, THERAPY (8224)
- ISCHEMIC (7846), (8206)
- NON-NECROTIZING, REGIONAL, SEGMENTAL (8180)*
- REGIONAL, GRANULOMATOUS (8220)
- ROENTGENOLOGY, SEGMENTAL, GRANULOMATOUS (8219)
- SEGMENTAL, GRANULOMATOUS (7960)
- TRANSMURAL, CHRONIC ULCERATIVE (8221)
- ULCERATIVE, AGE, SEX, RELAPSE (8211)*
- ULVERATIVE, ETIOLOGY, THERAPY (8215)
- ULCERATIVE, MICROFLORA, LARGE INTESTINE, FECES (8212)
- ULCERATIVE, POLYARTHRITIS, SACROILEITIS (8214)

COLON
- CARCINOMA, PRIMARY LINITIS PLASTICA (8190)
- CARCINOMA, SURGERY, SUBCUTANEOUS EMPHYSEMA (8185)
- CECUM, MORPHOLOGY, RODENTS (7805)
- DISEASE, GUAR GUM THERAPY, ATAPULGITE (8203)
- DIVERTICULITIS, HEMORRHAGE, SURGERY (8198)
- DIVERTICULOSIS, SURGERY (8197)
- FISTULA, GALLBLADDER, MALABSORPTION (8412)
- MORPHOLOGY, JEJUNAL RESECTION (7808)
- MUCOSA ANTIGENS, PHOSPHATASES, MAN (7821)
- OBSTRUCTIVE CARCINOMA, CECOSTOMY (8182)
- PERFORATION, CARCINOMA, RADIOGRAPHY, COLOSTOMY (8201)
- ULCERATIVE, GRANULOMATOUS, MICRODIVERTICULA (8156)*

CONSTIPATION
- FUNCTIONAL GASTROINTESTINAL DISEASES, DRUG TREATMENT, AGE (8446)

CORTICOSTEROID
- URINARY EXCRETION, HYDROCORTISONE, VIRAL HEPATITIS (8350)

CROHN,S DISEASE
- COLON, THERAPY (8224)
- ILEUM, COLON, RECTUM, ANUS (8159)
- PATHOPHYSIOLOGY, DIAGNOSIS, ANTIMETABOLITE THERAPY (8164)
- PERITONITIS, INTESTINAL PERFORATION (8158)

CULTURE
- SMALL INTESTINE, VIRUS MULTIPLICATION, HUMAN EMBRYO (7998)

CYST
- FALSE, PANCREAS, COLON INVOLVEMENT, INTESTINAL OCCLUSION (8231)

CYTOPLASM
- LIVER, PROTEIN, HEMOGLOBIN SYNTHESIS, RABBIT (7800)

DIAGNOSIS
- CARCINOMA, PANCREAS HEAD (8241)
- COMPENSATED, CIRRHOSIS, INDOCYANINE-GREEN TEST (8016)
- DIFFERENTIAL, ANGIOGRAPHY, PANCREATITIS, CARCINOMA (8034)
- DIFFERENTIAL, JAUNDICE, ETIOLOGY (8031)
- GASTRIC DILATATION, PREVENTIVE MEASURE (8046)
- INTESTINAL GAS, RADIOLOGIC APPEARANCE (8010)*
- LIVER TRAUMA, TREATMENT (8028)
- PANCREAS CARCINOMA, SELENO METHIONINE SCANNING (8039)
- PANCREAS TUMOR, SELENOMETHIONINE SCAN, DIARRHEA, HISTOLOGY (8238)
- PANCREATIC INJURY, SERUM AMYLASE, LAPARATOMY (8237)
- RADIOISOTOPE SCANNING, LIVER, REGENERATION (8280)
- ROENTGEN, PEPTIC ULCER, GASTRIC, DUODENAL, PYRILENE TEST (8043)

DIAGNOSTIC PROCEDURE
- ABDOMINAL, EXPLORATORY, LAPARATOMY, INDICATIONS (8032)
- ABSORPTION TESTS, MALABSORPTION, ETIOLOGY (8052)
- AMEBIASIS, SKIN TEST (8021)
- CHOLECYSTOGRAPHY, CODEINE, SPHINCTER OF ODDI (8047)
- COLITIS, SEGMENTAL, GRANULOMATOUS (8219)
- DISACCHARIDE ABSORPTION, LACTOSE INTOLERANCE, LACTASE ACTIVITY (8177)
- D-XYLOSE ABSORPTION TEST, SMALL INTESTINE, LIMITATION (8003)*
- ENTEROPATHOGENIC COLI, FLUORESCENT IMMUNO TEST (8017)
- ESOPHAGEAL MANOMETRY, ACHALASIA, HIATAL HERNIA (8030)
- ESOPHAGITIS, MANOMETRY, ENDOSCOPY, BIOPSY (8022)
- ESOPHAGOGASTRIC PH, MANOMETRY, HIATAL HERNIA (8081)
- ESOPHAGUS PRESSURE, CARDIAC ARTIFACTS (8012)*
- FIBER DUODENOSCOPE, PANCREATOGRAPHY, CHOLANGIOGRAPHY (8004)*
- GASTRIC FUNCTION TESTS, SURGERY (8033)
- GASTROSCOPY, CYTOLOGIC WASHING, INTRAGASTRIC BRUSHING (8027)
- GASTROSCOPY, DIRECT VISION BIOPSY, GASTRIC CARCINOMA, BENIGN ULCER (8037)
- GASTROSCOPY, TECHNIQUE, CONTRAINDICATIONS (8045)
- HEPATOMEGALY, BIOPSY (8050)
- HISTALOG TEST, CONTRAINDICATIONS, MYOCARDIAL ISCHEMIA (8162)
- INTRAVENOUS, CHOLANGIOGRAPHY, BILIGRAFIN FORTE, DRIP INFUSION TECHNIQUE (8036)
- LIVER, COLLOIDAL GOLD (8020)
- LIVER, ROSE BENGAL EXCRETION (8049)
- LIVER SCANNING, 99M TC TECHNETIUM DIOXIDE, BLOOD FLOW STUDY (8050)
- OPERATIVE CHOLANGIOGRAPHY, CONGENITAL DOUBLE GALLBLADDER (8405)

  - PANCREAS SCANNING, SELENIUM METHIONINE ACUTE PANCREATITIS (8044)
  - PANCREATIC SCINTILLOGRAPHY, SURGERY, DRAWBACKS (8015)
  - SCANNING ELECTRON MICROSCOPY, RECTAL MUCOSA (8011)•
  - SCINTILLATION SCANNING, LIVER ABSCESS, CHILDREN (8038)
  - SERUM IMMUNOGLOBULIN DETERMINATION, LIVER, STEATOSIS, CIRRHOSIS, HEPATITIS (8023)
  - STOMACH, EXFOLIATIVE CYTOLOGY (8006)•
  - STOMACH RADIOLOGY, OPTIMAL IMAGE (8024)
  - TRYPSIN, CHYMOTRYPSIN, PANCREATIC INSUFFICIENCY, ENTEROKINASE (8029)
  - ULTRASOUND, TUMOR, PANCREAS (8053)
  - VI HEMAGGLUTINATION TEST, TYPHOID CARRIERS (8019)
- DIARRHEA
  - GASTRIC SURGERY, INTESTINAL MALABSORPTION (8102)
  - INFANT, SUGAR TRANSPORT, ABSORPTION (8167)•
  - NONSPECIFIC, TINCTURE OF OPIUM - HMB - PECTIN COMBINATION, CHILDREN (8442)
- DIET
  - CHOLELITHIASIS, GALLSTONES (8400)
- DIETARY DEFICIENCY
  - CHOLINE, PHOSPHATIDYL BIOSYNTHESIS (7962)
- DIGESTION
  - AGE DEPENDENCY, ABSORPTION, GASTROINTESTINAL TRACT (7849)
- DISACCHARIDE
  - MALABSORPTION, LACTOSE INTOLERANCE, LACTASE ACTIVITY (8177)
- DISEASE
  - AMYLOIDOSIS, HEPATIC, SPLENIC, RESORPTION HISTOLOGY, MOUSE (8480)
  - CROHN'S, ADENOCARCINOMA, EXCLUDED LOOP OF ILEUM, SURGERY (8163)
  - CROHN'S, COLON, SURGERY (8222)
  - CROHN'S, COLON, ULCERATIVE COLITIS (8223)
  - CROHN'S, MACROSCOPIC, PATHOLOGY (8160)
  - CROHN'S, RECTUM, ANUS, ULCERATIVE COLITIS (8225)
  - CROHN'S, TRANSMISSABLE AGENT (8157)•
  - GANGLIOSIDOSIS, ULTRASTRUCTURE, HUMAN LIVER (8284)
  - GRANULOMATOUS, ACUTE, LIVER (7901)•
  - HARTNUP, INTESTINAL ABSORPTION, AMINO ACIDS (8170)
  - HARTNUP, MALABSORPTION, INTESTINAL (8166)•
  - HIRSCHSPRUNG'S, ENTEROCOLITIS, INTESTINAL OBSTRUCTION, COLOSTOMY, INFANT (8192)
  - HYPOGAMMAGLOBULINEMIA, PERNICIOUS ANEMIA, ARTHRITIS, DIARRHEA (8465)
  - ISOLATED MESENTERIC LIPODYSTROPHY (8173)
  - LIVER INTOXICATIONS, RESORT TREATMENT (8336)
  - WALDMANN'S, INTESTINAL LYMPHANGIECTASIA, CHYLOUS ASCITES (8471)
  - WILSON'S, GLIOPATHY, HEPATOGENIC (8272)•
- DIVERTICULITIS
  - COLON, HEMORRHAGE, SURGERY (8198)
  - SIGMOID COLON, ANASTOMOSIS, CRITERIA (8188)
- DIVERTICULOSIS
  - COLON, SURGERY (8197)
  - JEJUNUM, VOLVULUS, METABOLISM (8146)
- DIVERTICULUM
  - DUODENUM, RADIOLOGY, SURGERY (8116)
- DRUG
  - EFFECTS, HEPATIC BLOOD FLOW, CHOLERESIS (7924)
  - GI BLEEDING, ACUTE, PROPANOLOL, EPINF PHRINE (8420)•
  - HISTAMINE, PENTAGASTRIN, SECRETION (7872)
  - LEUCOVORIN, METHOTREXATE, GI LESION (8429)
  - METABOLAN, LIVER DISEASE (8292)
  - MICROSOME, ANDROGEN, ESTROGEN (7967)
  - NEOMYCIN, COLCHICINE, CHOLESTEROL LOWERING (8374)•
  - NIRIDAZOLE, SCHISTOSOMIASIS, ANTIBODIES (8486)•
  - OXIDATION, LIVER MICROSOMES (7925)
  - TOXICITY, RESERPINE, ULTRASTRUCTURE (8328)
  - TRANQUILIZERS, LIVER DISTURBANCE, HISTOPATHOLOGY (8329)
  - ULCEROGENIC, ANTIULCER, GASTRIC SECRETION (7863)•
  - URETHAN, TUMOR, HEPATECTOMY (8268)•
- DUODENITIS
  - MORPHOLOGY, INCIDENCE, DIVERTICULOSIS (8109)
- DUODENUM
  - ASPIRATE, OSMOLALITY, SECRETIN (7987)
  - DIVERTICULUM, RADIOLOGY, SURGERY (8116)
  - EPITHELIUM, IRRADIATION, DNA SYNTHESIS, MITOSIS (7813)
  - PANCREAS, CLOSED TRAUMA, SURGERY (8288)
  - ULCER, SURGERY, COMPLICATIONS (8357)
  - ULCER, VAGOTOMY, ANTRECTOMY, PYLOROPLASTY (8093)
- DYSENTERY
  - EPIDEMIC, SHIGELLA, ANTIBIOTIC RESISTTANT (8463)
  - EPIDEMIOLOGY, U.S.S.R. (8454)
- DYSPHAGIA
  - ESOPHAGEAL RING, SURGERY (8074)
  - LUSORIA, ESOPHAGUS, SUBCLAVIAN ARTERY (8058)
- ELECTROLYTE
  - ABSORPTION, COLON, RECTUM, MAN (7845)
  - POTASSIUM ION, THIAZIDE DIURETICS, SMALL INTESTINE LESIONS (8484)
- ENTEROPATHY
  - CHROMIUM (8459)
- ENZYME
  - ALCOHOL DEHYDROGENASE, METHANOL ACTIVITY (7973)
  - ALKALINE PHOSPHATASE, L-HOMOARGININE, INHIBITOR (7923)

- ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, LIVER, HEPATOMA, THYROID (8270)*
- AMINO ACID CATABOLIZING, LIVER, DIET (7893)*
- AMINOPYRINE METHYLASE, NICKEL CARBONYL LIVER (7922)*
- CCl4 LIVER DAMAGE, SORBITOL DEHYDROGENASE, GLUTAMATE DEHYDROGENASE (8320)*
- CHOLINESTERA , LIVER, NICOTINAMIDE CCl4 (7917)*
- DIHYDROURACIL DEHYDROGENASE, PIG LIVER (7812)
- ESTERASE, LIVER, SUBMICROSOMAL FRACTION (7774)*
- GALACTOSE-1-PHOSPHATE URIDYL TRANSFERASE, MUCOSA, GALACTOSEMIA (8273)*
- GLUCURONIDE TRANSFERASE, BILIRUBIN CONJUGATION, TRANSFER (7956)
- GUANINE DEAMINASE, LIVER, INDUCTION (7969)
- HISTIDINE DECARBOXYLASE, BACTERIAL, STOMACH (7992)*
- HISTIDINE DECARBOXYLASE, GASTRIC TISSUE (7796)*
- HISTONE, METHYLASE ACTIVIEY, EMBRYONIC ADULT, NEOPLASTIC LIVER (7952)
- INBORN ALDOLASE DEFICIENCY, FRUCTOSE INTOLERANCE, TYROSINE, METABOLISM (8313)
- INDUCTION, PHENYLBUTAZONE, LIVER MORPHOLOGY, RAT (7898)*
- INDUCTION, SPIRONOLACTONE, LIVER MICROSOME, MOUSE (7941)
- LIVER, ABNORMALITIES, DIABETES (7919)*
- LIVER, ALCOHOL, DEHYROGENASE, PHYSIOLOGICAL ROLE (7903)*
- LIVER, AMINOLEVULINIC ACID SYNTHETASE, INDUCTION, NEONATAL (7897)*
- LIVER, BILIRUBIN, UDP-GLUCURONYL TRANSFERASE (7779)*
- LIVER, GLUCONEOGENIC, GLYCOLYTIC, DIABETIC HAMSTERS (8279)
- LIVER, N-DEALKYLASE, N-OXIDASE, AGE (7891)*
- LIVER, PYRUVATE, HOLOCARBOXYLASE, SYNTHESIS, CHICKEN (7935)
- LIVER CATALASE INDUCTION, HEMATIN, CX-REACTIVE PROTEIN RESPONSE (7957)
- LIVER HOMOGENATE, MICROSOMES, UDP-GLUCURONIC ACID PYROPHOSPHATASE (7776)*
- MITOCHONDRIAL, EVOLUTION, HEPATOCYTES (7931)
- MONAMINE OXIDASE INHIBITION, PERFUSED LIVER, AMPHETAMINE REMOVAL, CAT (7940)
- MONOOXYGENASE, STEROID HYDROXYLATION, LIVER, PHENOBARBITAL (7953)
- MONOOXYGENASE INDUCTION, ASCORBIC ACID LIVER MICROSOME, RAT (7933)
- PANCREATIC RIBONUCLEASE, LYSINE RESIDUES (7811)
- PEPSINS, GASTRIC MUCOSA, ZONES (7864)*
- PHOSPHATASES, COLON MUCOSA, ANTIGENS, MAN (7821)
- PLEURAL EFFUSION, CHRONIC PANCREATITIS HEMORRHAGIC ASCITES, SURGERY (8255)
- PYROPHOSPHATASE, GLUCOSE PHOSPHOTRANSFERASE, GLUCOSE-6-PHOSPHATASE (7802)
- PYRUVATE CARBOXYLASE PROTECTION, AVIDIN INHIBITION, LIVER, CHICKEN (7949)
- RNA POLYMERASE, RIFAMPICIN, LIVER MITOCHONDRIA, RAT (7939)
- SERUM CHOLINESTERASE, INFANTILE HEPATITIS (8359)
- 17-HYDORXYSTEROID NAD(P) OXIDOREDUCTASE, LIVER CYTOPLASM (7820)
- SGOT, LACTATE DEHYDROGENASE, BILIARY OBSTRUCTION (8397)*
- 16-ALPHA-GLUCURONYLTRANSFERASE, LIVER CYTOSOL, PROPERTIES (7783)*
- TRANSKETOLASE ACTIVITY, LIVER, SOUND EFFECT (7963)
- TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, QUINOLINIC ACID, RAT, LIVER (7938)
- TYROSINE AMINOTRANSFERASE, HYDROCORTISONE INDUCTION, HISTONES, PERFUSED LIVER (7934)
- TYROSINE AMINOTRANSFERASE INDUCTION, HEPATOMA (7900)*

EPIDEMIOLOGY
- DYSENTERY, U.S.S.R. (8454)
- SERUM HEPATITIS, INTRAVENOUS METHAMPHETAMINE ABUSE (8360)

EPITHELIUM
- DUODENAL, GAMMA IRRADIATION, DNA SYNTHESIS, MITOSIS (7813)
- INTESTINAL, QUANTITATIVE DESCRIPTION (7778)*
- MITOTIC CYCLE, ESOPHAGUS, HYDROCORTISONE (7807)

ERYTHROPOIESIS
- LIVER, GROWTH, PROLIFERATION KINETICS (7958)

ESOPHAGITIS
- ACUTE, HISTOLOGY, RADIOLOGY, CAT (8079)
- ESOPHAGEAL MOTILITY, ENDOSCOPY, BIOPSY (8022)
- MORPHOLOGY, ETIOLOGY, HIATUS HERNIA, DIAGNOSIS (8064)
- REFLUX, THERAPY (8059)
- TOTAL BYPASS SURGERY, REVERSED GASTRIC TUBE OPERATION (8082)

ESOPHAGOPLASTY
- PERICARDIUM, ESOPHAGEAL STENOSIS (8078)

ESOPHAGUS
- ACHALASIA, NEUROMUSCULAR MECHANISM, HISTOLOGY, RADIOLOGY (8068)
- ANASTOMOSIS, TOTAL GASTRECTOMY, TECHNIQUE (8113)
- CANDIDIASIS, RADIOLOGY (8073)
- CARCINOMA, RADIATION THERAPY, ESOPHAGOGASTRECTOMY (8083)
- COLUMNAR EPITHELIUM, MALIGNANCY, ADENOCARCINOMA (8067)
- CONGENITAL STENOSIS, PERICARDIUM, ESOPHAGOPLASTY (8078)
- DYSPHAGIA LUSORIA, ESOPHAGOSCOPY (8058)

  - EPITHELIUM, MITOTIC CYCLE, HYDROCORTISONE (7807)
  - ESOPHAGEAL RING, DYSPHAGIA (8074)
  - ESOPHAGITIS, ACUTE, MODEL (8055)•
  - ESOPHAGITIS, PEPTIC, STENOSIS, HIATUS HERNIA, INTESTINAL, GRAFT (8066)
  - ESOPHAGOPLASTY, ILEOCECAL VALVE, ESOPHAGEAL PROSTHESIS, PYLORIC SPASMS (8057)
  - ESOPHAGOPLASTY, THAL'S PROCEDURE, GASTRIC FUNDUS GRAFT, CARDIOESOPHAGEAL SPHINCTER (8084)
  - GASTRODUODENAL DISEASES, GASTROPULGITE THERAPY (8072)
  - HIATAL HERNIA, ESOPHAGOGASTRIC PH, MANOMETRY (8081)
  - HIATUS HERNIA, STOMACH, COLON INVOLVEMENT (8080)
  - MALIGNANT FISTULA, PERORAL ESOPHAGEAL PROSTEHSIS (8071)
  - MALIGNANT STENOSIS, PROSTHESIS, GASTRIC CARCINOMA (8060)
  - MANOMETRY, ACHALASIA, HIATAL HERNIA (8030)
  - MEGA-ESOPHAGUS, HELLER'S OPERATION, MALIGNANCY, MORTALITY RATE (8062)
  - MOTILITY, HIATUS HERNIA, ANATOMOPATHOLOGY (8070)
  - NEUROLOGICAL LESION, ACHALASIA, CARDIA (8077)
  - PRESSURE, DIAGNOSTIC PROCEDURE, CARDIAC ARTIFACTS (8012)•
  - SHORT, CONGENITAL PARTIAL THORACIC STOMACH (8069)
  - SPASM (8076)
  - SPONTANEOUS RUPTURE, VOMITING, SURGERY (8065)
  - STENOSIS, STARVATION MANAGEMENT, CATHETERIZATION (8063)
  - THORACIC SEGMENT, PROSTHESIS, DOG (8056)

- EXCRETION
  - CONTRAST MEDIA, BILIARY, URINARY (7826)•
  - FECAL, BILE ACIDS, LIPIDS, CHOLEPESIS (8307)
  - RADIOIRON, ABSORPTION (7842)
- FAT
  - PERIPHERAL, NECROSIS, ACUTE PANCREATITIS, PANCREATIC ENZYMES (8261)
- FECES
  - 51CR, RADIOASSAY, ASHING TECHNIQUE (8005)•
- FISTULA
  - CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
  - GASTROJEJUNOCOLIC, ETIOLOGY, INFANT (8213)
- FLORA
  - ATYPICAL, MYCOBACTERIA, FECES (8000)
- FUNGUS
  - CANDIDA ALBICANS,ESOPHAGITIS, RADIOLOGY (8073)
- GALLBLADDER
  - BILE, GALLSTONE, FORMATION (8395)•
  - CANCER, EPITHELIAL ALTERATIONS (8408)
  - CHOLANGIOGRAPHY, GALLSTONE, DIAGNOSTIC PROCEDURE (8018)
  - CONGENITAL, DUPLICATION, RADIOLOGY, OPERATIVE CHOLANGIOGRAPHY (8405)
  - CONTRACTION, CHOLECYSTOKININ, GASTRIC SECRETION (7869)
  - CYTOCHEMISTRY, CHOLELITHIASIS, HISTOLOGY (8406)
  - EMPHYSEMA, CHOLECYSTITIS, RADIOLOGY, CLINICAL FEATURES (8399)
  - FISTULA, CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
  - FISTULA, COLON, MALABSORPTION (8412)
  - MOTILITY, BILE CONSTITUENTS, CHOLESTEROL GALLSTONE (7930)
  - PRIMARY DISEASE, CHOLELITHIASIS, ETIOLOGY, CHILDREN (8415)
  - SPONTANEOUS EXTERNAL FISTULA, CHOLELITHIASIS, CHOLECYSTECTOMY (8417)
  - VAGAL STASIS, CHOLECYSTITIS, VAGOTOMY, DOG (8416)
- GALLSTONE
  - BILE PROTEIN, ANTISERA (8396)•
  - FATTY ACID, CALCIUM, HISTOCHEMISTRY (8398)•
  - ILEUS, SMALL INTESTINE (8150)
- GASTRECTOMY
  - GASTROINTESTINAL HEMORRHAGE, GASTROESOPHAGEAL REFLUX, GASTRIC STUMP CANCER (8095)
  - TOTAL, TECHNIQUE, ESOPHAGEAL ANASTOMOSIS (8113)
  - TOTAL, ZOLLINGER-ELLISON SYNDROME, TUMOR, HYPERCALCEMIA, GASTRIN (8433)
  - VITAMIN D DEFICIENCY, CALCIUM ACTIVE TRANSPORT, SMALL INTESTINE (8123)
- GASTRIC FUNCTION
  - C-TERMINAL GASTRIN TETRAPEPTIDE, ACID SECRETION (7867)
  - TESTING, SURGERY (8033)
- GASTRIC JUICE
  - GASTROFERRIN, GLYCOPROTEIN, PROPERTIES (7785)•
- GASTRIC MUCOSA
  - ACID, GASTRIN, PENTAGASTRIN, BULLFROG (7874)
  - BARRIER, STRESS ULCER, PATHOGENESIS (8137)
  - HUMAN, ANTIGENIC ESTERASE VI, SPECIES SPECIFICITY (7822)
- GASTRIC SECRETION
  - PHARMACOLOGY, 1- (3(1-CYCLOHEXENYL)-3-PHENYLPROPYL)-1-METHYLPIPERIDINIUM BROMIDE (7875)
  - STIMULATION, SYNTHETIC GASTRIN, PENTAGASTRIN, MUCOSA, BULLFROG (7874)
  - UROCHOLECYSTOKININ, GALLBLADDER CONTRACTION (7869)
- GASTRITIS
  - CHRONIC, ATROPHIC, SUPERFICIAL (8104)
  - CHRONIC, MUCOSA, ACID SECRETION, ATROPHIC GASTRITIS (8128)
  - CHRONIC, RESORT TREATMENT, SOUTHERN CRIMEA (8092)
  - ESOPHAGUS, SMALL INTESTINE, COLON, SJOGREN'S SYNDROME (8432)
  - INTESTINAL ABSORPTION, RESORT TREATMENT (8129)

  - MYELIN FIGURES, ELECTRON MICROSCOPY, HISTOPATHOLOGY (8091)*
  - PHLEGMONOUS, GASTRIC NEOPLASM, SURGERY ANTIBIOTIC MANAGEMENT (8122)
- GASTROENTERITIS
  - E.COLI, ANTIBIOTICS, INFANTS (8435)
  - HELMINTHIC, CONTROL, CALF (8500)
  - INFANT, SURVEY (8423)*
- GASTROINTESTINAL BLEEDING
  - ACUTE, PROPANOLOL, EPINEPHRINE (8420)*
  - COAGULATION DEFECTS, HEMOPHILIA, FIBRINOLYSIS (8449)
  - VASOCONSTRICTOR INFUSION, MESENTERIC VESSELS, MESENTERIC ANGIOGRAPHY (8441)
- GASTROINTESTINAL DISEASE
  - CANCER, CHEMOTHERAPY, 5-FLUOROURACIL (8436)
  - CANCER, COMBINATION CHEMOTHERAPY (8443)
  - FUNCTIONAL, CONSTIPATION, AGED (8446)
  - GASTRIC ACHYLIA, ESOPHAGUS, JEJUNUM, COLON, SJOGREN'S SYNDROME (8432)
  - METCLOPRAMIDE TREATMENT, GASTRODUODENAL MOTILITY (8455)
- GASTROINTESTINAL TRACT
  - ACUTE BLEEDING, CENTRAL VENOUS PRESSURE (8425)*
  - DIGESTION, ABSORPTION, AGE DEPENDENCY (7849)
  - HEMORRHAGE, DIAGNOSIS, TREATMENT (8458)
  - MALFORMATIONS, THALIDOMIDE, RABBIT EMBRYO (8481)
  - MUCUS, FUNCTION, COMPOSITION (7803)
  - THERAPY, DIGESTIVE DRESSING, ATAPULGITE (8134)
  - THERAPY, GASTROPULGITE (8467)
  - TOXOPLASMA GONDI, CIRCULATION, RESISTANCE (8488)
  - UPPER, LESIONS (8075)
  - UPPER, THERAPY, GASTROPULGITE (8457)
- GASTROSCOPY
  - MULTIPLE GASTRIC ULCERS, LEUKEMIA (8138)
  - PEPTIC ULCER, GASTRECTOMY, CONTRAINDICATIONS (8045)
  - RANDOM CYTOLOGIC WASHING, INTRAGASTRIC BRUSHING (8027)
- GASTROSTOMY
  - ACUTE GASTRECTASIA, DIAGNOSIS (8124)
- GENETICS
  - LIVER GROWTH, CASTRATION, HEPATOMA (7908)*
- GLUCOCORTICOID
  - PREDNISONE, HYPOGAMMAGLOBULINEMIA, PERNICIOUS ANEMIA (8465)
- GLUCOSE
  - ETHIONINE TOXICITY, LIVER, ULTRASTRUCTURE (8330)
- HEMOGLOBIN
  - A2, VIRAL HEPATITIS, INFECTION, SUSCEPTIBILITY (8356)
  - H-DISEASE, LIVER (8311)
- HEMORRHAGE
  - ACUTE, INTESTINE, TREATMENT (8474)
  - GASTROINTESTINAL, DIAGNOSIS, TREATMENT (8458)
  - INTESTINE, ANTICOAGULANT, CONSERVATIVE MANAGEMENT (8478)
  - LIVER, VENOUS, BALLOON CATHETER (8428)
  - RECURRENT, GASTROINTESTINAL, HEMOPHILIA, FIBRINOLYSIS (8449)
- HEPATECTOMY
  - MORPHOLOGY, RNA, DIET (7773)*
- HEPATITIS
  - ACUTE, ALCOHOL INDUCED, HALOTHANE, AUSTRALIA ANTIGEN (8343)
  - ACUTE, ALCOHOL INDUCED, HISTOLOGY, GLUCOCORTICOID (8342)
  - CHRONIC, AUSTRALIA ANTIGEN, AUTOANTIBODIES (8364)*
  - CHRONIC, CIRRHOSIS, VEGETATIVE NERVOUS SYSTEM SURGERY, CHILDREN (8365)
  - CHRONIC, LIVER NECROSIS, DYSPROTEINEMIA, MORPHOLOGY (8367)
  - CHRONIC, ORNITHINE-ASPARTATE MIXTURE, LUNG TUBERCULOSIS TREATMENT (8366)
  - CHRONIC, THERAPY, CORTISONE, IMMUNOSUPPRESSIVE CYTOSTATICS, D-PENICILLAMINE (8368)
  - EPIDEMIC, SHORT INCUBATION (8346)*
  - HALOTHANE, LYMPHOCYTE, STIMULATION (8326)*
  - INFANTILE, SERUM CHOLINESTERASE (8359)
  - INFECTIOUS, INTRAVENOUS METHAMPHETAMINE ABUSE, EPIDEMIOLOGY (8360)
  - LUPOID, LUPUS ERYTHEMATODES VISCERALIS, LIVER HISTOLOGY (8332)
  - NON-VIRAL, CC14, COLD ENVIRONMENT (8331)
  - NON-VIRAL, ACUTE, CC14, DIETHYLDITHIOCARBAMATE (8345)
  - PYRAZINAMIDE, TOXICITY, TRANSAMINASE (8324)*
  - SERUM, BLOOD TRANSFUSION, BLOOD BANKS, RISKS (8357)
  - SERUM, EPIDEMIOLOGY, BLOOD TRANSFUSION, ICTERIC AND ANICTERIC COURSE, GAMMAGLOBULIN (8361)
  - SERUM BILIRUBIN, TRANSAMINASE, IMMUNOGLOBULIN (7904)*
  - VIRAL, ACUTE, AUSTRALIA ANTIGEN (8353)
  - VIRAL, ACUTE, AUTOANTIBODIES, ANTIGEN (8349)*
  - VIRAL, AUSTRALIA ANTIGEN, IMMUNOLOGY, BLOOD SCREENING (8363)
  - VIRUS, COMA, NEUROLOGICAL SEQUELAE (8348)*
  - VIRAL, DIABETES MELLITUS, ETIOLOGY, EXOCRINE PANCREAS (8362)
  - VIRAL, DIAGNOSIS, IMMUNOGLOBULIN LEVEL (8035)
  - VIRAL, FECAL ANTIGEN (8347)*
  - VIRAL, HEMOBLOBIN A2, INFECTION, SUSCEPTIBILITY (8356)
  - VIRAL, HYDROCORTISONE, URINARY EXCRETION, CORTICOSTEROIDS (8350)
  - VIRAL, LIVER FUNCTION, BONE MARROW DAMAGE (8358)
  - VIRAL, LIVER FUNCTION, OVARIES ENDOCRINOLOGY (8352)
  - VIRAL, LIVER SCANNING, FUNCTION (8351)

- VIRAL, SELENIUM THERAPY, LIVER REGENERATION, HAMSTER (8354)
- VIRAL, THERAPY, POLYVINYL ALCOHOL PREPARATION (8355)

HEPATOBILIARY TRACT
- CYSTIC ENLARGEMENT, DISSEMINATED PAPILLOMATOSIS (8288)
- DISEASES, LIVER EXCRETION, BILE FLOW (8277)
- JAUNDICE, INTRAHEPATIC, CLINICAL DEVELOPMENT (8014)

HEPATOCYTE
- MITOCHONDRIAL ENZYMES, DEVELOPMENT (7931)

HEPATOMA
- LIVER, ARGININE INCORPORATION, RAT, IN VITRO (7946)
- LIVER METASTASIS, ULTRASTRUCTURE, CHICK EMBRYO (8050)
- MICROSOMES, MITOCHONDRIA, LIPIDS (8287)
- TISSUE CULTURE, STEROID STRUCTURE, TYROSINE AMINOTRANSFERASE (7900)*

HEPATOTOXICITY
- CC14, HEPATITIS, ACUTE NON-VIRAL (8331)
- MICROSOMAL METABOLISM, CC14, INHIBITION (8345)

HERNIA
- HIATAL, ESOPHAGITIS, MORPHOLOGY, ETIOLOGY, DIAGNOSIS (8064)
- HIATAL, ESOPHAGUS, STOMACH AND TRANSVERSE COLON INVOLVEMENT (8080)
- HIATAL, GASTROPEXY, DELAYED RESULTS (8061)
- IRREDUCIBLE, LARGE INTESTINE, OBSTRUCTION (8121)
- PARADUODENAL, INTESTINAL OCCLUSION, SURGERY (8148)

HETEROTOPIA
- PANCREAS, PHYSIOPATHOLOGY, SURGERY (8235)

HISTOCHEMISTRY
- LIVER, THIOPENTAL (7980)

HISTOLOGY
- INTESTINAL ABSORPTION, GLUCOSE, 5-FLUOROURACIL EFFECT (7840)
- INTESTINAL EPITHELIUM, EXPERIMENTAL INFECTION, E.COLI (8475)
- LIVER CELL, JUVENILE RHEUMATOID ARTHRITIS, HEPATOMEGALY (8267)*
- PANCREATITIS, ETIOLOGY, PATHOGENESIS (8245)

HISTOPATHOLOGY
- ULCERATIVE COLITIS, RELAPSE, AGE, SEX (8211)*

HORMONE
- ESTROGEN METABOLISM, LIVER CIRRHOSIS (8383)
- GASTRIN, C-TERMINAL TETRAPEPTIDE, SECRETION (7867)
- INSULIN, CHRONIC PANCREATITIS, ORAL GLUCOSE LOADING (8250)
- INSULIN, DIABETES MELLITUS, CHRONIC PANCREATITIS (8249)
- PORTACAVAL SHUNT, GASTRIC HYPERSECRETION (8370)*
- STEROID, EXCRETION, BILE, MAN (7837)
- THYROXINE, THYROID FUNCTION, LIVER INJURY (8319)*

HYPOXIA
- HEPATIC ARTERY, PORTAL VEIN, MESENTERIC BLOOD FLOW (7995)*
- PRESSURE CHAMBER, ALTITUDE, HEPATIC FAT (7904)*

ILEUM
- COLON, ILEOCOLITIS, RUBEOLA (8482)
- DUPLICATIONS, COLON, APPENDIX, CHILDREN (8448)
- ELECTRICAL POTENTIAL, ABOSRPTION, ALANINE, GLUCOSE (7844)
- EOSINOPHILIC GRANULOMA, ANISAKIS LARVAE, INTESTINAL OBSTRUCTION (8489)
- ILEOCECAL VALUE, LIPOMATOSIS, ADENOPAPILLOMA (8144)
- JUNCTION, LARGE INTESTINE, ANATOMY, CECOSTOMY (7804)
- LONGITUDINAL MUSCLE, SCHULTZ-DALE RESPONSE (7856)
- LYMPHOID HYPERPLASIA, PATHOLOGY, HISTOLOGY (8145)
- TERMINAL, OBSTRUCTION, IMPACTED ANTACID TABLETS (8154)
- ULCERATIVE, GRANULOMATOUS, MICRODIVERTICULA (8156)*

ILEUS
- ADYNAMIC, CECAL PERFORATION, INTESTINAL DISTENSION, LOCALIZED ISCHEMIA (8194)
- GALLSTONE, SMALL INTESTINE (8150)

IMMUNOLOGY
- GASTRIC MUCOSA, ANTIGENIC ESTERASE VI, SPECIES SPECIFICITY (7822)
- INTESTINE, SALMONELLA TYPHIMURIUM, MOUSE (7823)
- SALMONELLOSIS, ROUGH MUTANT (8422)*

IMMUNOPATHOLOGY
- GASTRIC MUCOSA, ALTERATIONS (8105)

INFARCTION
- GUT, NEONATAL (8437)

INFECTION
- E.COLI, ENDOTOXICITY, ENHANCEMENT (8477)
- E.COLI, LOW PROTEIN INTAKE, PATAS MONKEY (8447)
- SALMONELLA, COLD-EXPOSED MICE (8461)

INNERVATION
- SYNAPSE, STOMACH, SMALL INTESTINE (7786)*

INTESTINAL ABSORPTION
- HISTOLOGY, GLUCOSE, S-FLUOROURACIL EFFECT (7840)

INTESTINE
- ABSORPTION, FOOD AND DRUG INTERACTION RAT (7846)
- ABSORPTION, PHARMACOKINETICS, MATHEMATICAL PROCEDURES (7851)
- ACUTE, HEMORRHAGE, TREATMENT (8474)
- BRUSH BORDER, VITAMIN D, CALCIUM TRANSPORT (7836)*
- CAPILLARY AND NEUROCELLULAR RELATIONS MATHEMATICAL ANALYSIS (8002)
- DUPLICATIONS, ILEUM, COLON, CHILDREN (8448)

- EPITHELIUM, QUANTITATIVE DESCRIPTION (7778)*
- EXPERIMENTAL INFECTION, E.COLI, GUINEA PIG (8475)
- FECAL ANTIBODY, IMMUNIZATION, RABBIT (7985)*
- GAS, RADIOLOGY, VOLUME (8010)*
- HARTNUP DISEASE, MALABSORPTION (8166)*
- ILEOCECAL VALVE, ESOPHAGOPLASTY, ESOPHAGEAL PROSTHESIS, PYLORIC SPASM (8057)
- IMMUNOCHEMISTRY, SECRETIONS, MUCOSA, CELIAC SYNDROME (8165)*
- IMMUNOLOGY, IMMUNIZATION, SALMONELLA TYPHIMURIUM (7823)
- INFARCTION, SUPERIOR MESENTERIC ARTERY OCCLUSION, SYMPATHECTOMY (8445)
- JUICE, ANTIBODY DESTRUCTION, PROTEINASE INHIBITOR (7983)*
- LYMPHANGIECTASIA, WALDMANN'S DISEASE, CHYLOUS ASCITES (8471)
- LYMPHANGIECTASIS (8460)
- MALABSORPTION, THERAPEUTIC AGENTS, CHOLESTYRAMINE (8179)
- MEGACOLON, AGANGLIONIC, INTESTINAL OBSTRUCTION, ENTEROCOLITIS, COLOSTOMY, INFANTS (8192)
- MOTILITY, PRESSURE, MUSCLE (7999)
- MUCOSA, MITOCHONDRIA, CALCIUM (7830)*
- NECROSIS, ILEUM, COLON, ILEOCOLITIS, RUBEOLA (8482)
- OCCLUSION, PARADUODENAL HERNIA, SURGERY (8148)
- PARASITE, TESTING, TROPICS (8493)
- PARASITIC INFECTION, CHEMOTHERAPY, PHENYLENE 1,4-DIISOTHIOCYANATE (8493)
- PENICILLIN RETENTION, E.COLI PROLIFERATION, GUINEA PIG (7848)
- PERFORATION, CROHN'S ILEITIS, PERITONITIS (8158)
- PERFUSED, IRRADIATION, ALBUMIN DEGRADATION (7988)
- PROTEIN LOSS, SCHISTOSOMAL POLYPOSIS, COLON (8487)*
- RIBONUCLEIC ACID SYNTHESIS, VITAMIN A DEFICIENCY, RAT (7990)
- SUGAR TRANSIT, ABSORPTION, INFANT DIARRHEA (8167)*
- SUGAR TRANSPORT, MODEL (7825)*

INTESTINE, LARGE
- CARCINOIDS, PATHOLOGY, MALIGNANCY (8181)
- CECUM, COLON, MORPHOLOGY, RODENTS (7805)
- COLITIS, DIAGNOSIS, TREATMENT (8190)*
- COLITIS, REGIONAL, GRANULOMATOUS (8220)
- COLON, CARCINOMA, PRIMARY LINITIS PLASTICA (8190)
- COLON, CROHN'S DISEASE, SURGERY (8222)
- COLON, CROHN'S DISEASE, THERAPY (8224)
- COLON, CROHN'S DISEASE, ULCERATIVE COLITIS (8223)
- COLON, RECTUM, CARCINOMA, METHASTASIS, LYMPH NODES (8196)
- COLON, RECTUM, MOTILITY, PERISTALSIS (7855)
- COLON, RECTUM, POLYPOSIS, CHILDREN (8187)
- COLON, RECTUM, POLYPS, CARCINOMA (8202)
- COLORECTAL CARCINOMA, FLUOROURACIL, RADIOACTIVE GOLD (8209)
- FISTULA, CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
- GRANULOMATOUS COLITIS, SEGMENTAL (7960)
- HERNIA, IRREDUCIBLE OBSTRUCTION (8121)
- ISCHEMIC, COLITIS (7846), (8206)
- JUNCTION, ILEUM, ILEAL PAPILLA, CECOSTOMY (7804)
- RECTOPOLYPOSIS, MESENTERIC FIBROMA (8200)
- RECTUM, COLON, CROHN'S DISEASE, ULCERATIVE COLITIS (8225)
- SIGMOID, CANCER, COLLAGENOSES, IMMUNOLOGY (8472)
- SIGMOID, COLON, DIVERTICULITIS, ANASTOMOSIS (8188)
- TRANSMURAL COLITIS, CHRONIC ULCERATIVE COLITIS (8221)
- ULCERATIVE COLITIS, CHOLESTASIS (8216)
- ULCERATIVE COLITIS, DIAGNOSIS (8048)
- ULCERATIVE COLITIS, ETIOLOGY, THERAPY (8215)
- ULCERATIVE COLITIS, HISTOLOGY, IMMUNOLOGY, IMMUNOSUPPRESSIVE THERAPY (8218)
- ULCERATIVE COLITIS, MICROFLORA, FECES (8212)
- ULCERATIVE COLITIS, SACRO-ILEITIS, POLYARTHRITIS (8214)

INTESTINE, SMALL
- BACTERIAL FLORA, PATHOPHYSIOLOGY, MAN (8466)
- BY-PASS, MALABSORPTION, OBESITY, DIET (8178)
- CALCIUM TRANSPORT, GASTRECTOMY, VITAMIN D DEFICIENCY (8123)
- COLON, RECTUM, ANUS, CROHN'S DISEASE (8159)
- CROHN'S DISEASE, TRANSMISSABLE AGENT (8157)*
- DUODENITIS, MORPHOLOGY, DIVERTICULOSIS (8109)
- DUODENOJEJUNAL JUNCTION, OBSTRUCTION, CONGENITAL (8076)
- DUODENUM, COLUMNAR CELL, RADIOAUTOGRAPHY (7794)*
- DUODENUM, INITIAL JEJUNUM, CALCIUM MALABSORPTION, HYPOCALCEMIA (8172)
- D-XYLOSE ABSORPTION TEST, LIMITATION (8003)*
- E.COLI, ENTEROPATHOGENIC (8424)*
- ENTEROPATHY, GAS, PORTAL VEIN (8142)*
- ENZYME, MUCOSA, FOOD LOAD (7827)*
- EPITHELIAL CELL, ABSORPTION, METABOLISM, CARBOHYDRATES (7989)
- EPITHELIUM, ISOLATED CELLS, METABOLISM (7986)*
- 5-THIO-D-GLUCOSE TRANSPORT (7831)*
- GALLSTONE, ILEUS (8150)

  - HUMAN EMBRYO, ORGAN CULTURE, VIRUS (7998)
  - HUMAN FETAL, VIRUS, CYTOPATHIC CHANGES (7984)*
  - ILEOCECAL VALVE, LIPOMATOSIS, ADENOPAPILLOMA (8144)
  - ILEUM OBSTRUCTION, IMPACTED ANTACID TABLETS (8154)
  - JEJUNAL DIVERTICULOSIS, VOLVULUS, METABOLISM (8146)
  - JEJUNUM, MUCOSA POUCHES, HISTOPATHOLOGY (7853)*
  - MALABSORPTION, FAT, GLUCOSE, HYPERTONIC MANNITOL (8168)*
  - MALABSORPTION, LACTASE, GENETIC (8175)
  - MESENTERIAL MICROCIRCULATION, HEMODYNAMICS (7997)
  - MITOCHONDRIA, LOCATION, INTRASTRUCTURE (7775)*
  - MUCOSAL EPITHELIAL CELLS, ISOLATION (7982)*
  - PEUTZ-JEGHER SYNDROME (8153)
  - POTASSIUM ION INDUCED LESIONS, THIAZIDE (8484)
  - RESECTION, COLON MORPHOLOGY (7808)
  - RESECTION, MESENTERIC VEIN INFARCT (8456)
  - RESECTION, PARENTERAL FEEDING, FATAL ACCIDENTS, RADIOLOGICAL CONTROL (8434)
  - SARCOMA, CARCINOMA (8149)
  - TERMINAL ILEUM, LYMPHOID HYPERPLASIA, HISTOLOGY (8145)
  - TRANSPLANT, EXTRAMURAL SYNAPSES (8147)
- IRRADIATION
  - GAMMA, DNA SYNTHESIS, MITOSIS (7813)
  - LIVER, FAST NEUTRONS, GLYCOGEN CONTENT MICE (7959)
  - PERFUSED INTESTINE, ALBUMIN DEGRADATION (7988)
- ISOENZYME
  - LACTIC DEHYDROGENASE, CHRONIC HEPATITIS, CIRRHOSIS, CHOLELITHIASIS (8296)
- JAUNDICE
  - DIAGNOSTIC PROCEDURE, BILE SALT, BILIRUBIN (8312)
  - DIFFERENTIAL DIAGNOSIS, ETIOLOGY (8031)
  - INTRAHEPATIC, EXTRAHEPATIC, ETIOLOGY, CLINICAL DEVELOPMENT (8014)
  - OBSTRUCTIVE, ACUTE HEPATITIS, CHOLECYSTECTOMY, HEPATIC ARTERY ANEURYSM (8414)
  - SERUM HEPATITIS, BLOOD TRANSFUSION (8357)
- JEJUNUM
  - DISTENSION, SECRETION, GASTRIC, PANCREATIC (7862)*
  - DIVERTICULOSIS, VOLVULUS, METABOLISM (8146)
  - IMPAIRED, ABSORPTION, AMINO ACID (7835)*
- KWASHIORKOR
  - NITROGEN, FAT, MINERALS, CHILDREN (8483)
- LESION
  - ESOPHAGUS, NEUROLOGICAL, ACHALASIA (8077)
  - GASTROINTESTINAL, METHOTREXATE, LEUCOVORIN (8429)
  - LIVER, 5-HYDROXYTRYPTAMINE (8327)*
  - PANCREAS, DEFINED LIQUID DIET (8227)*
  - UPPER GASTROINTESTINAL TRACT (8075)
- LIPID
  - ABSORPTION, CORN OIL (7828)*
- LIVER
  - ABSCESS, BILE DUCT OBSTRUCTION, CHOLANGITIS, BACTEREMIA (8419)
  - ABSCESS, SCINTILLATION SCANNING, CHILDREN (8038)
  - ACID SOLUBLE NUCLEOTIDES, 2,4-DINITROPHENOL POISONING, RAT (8340)
  - ACUTE DAMAGE, ALCOHOL, HALOTHANE, AUSTRALIA ANTIGEN (8343)
  - ALBUMIN SYNTHESIS, CIRRHOSIS (8373)*
  - ALBUMIN SYNTHESIS, DISTRIBUTION (7890)*
  - ALCOHOL DAMAGE, ACUTE HEPATITIS, HISTOLOGY, GLUCOCORTICOID (8342)
  - ALCOHOLDEHYDROGENASE, METHANOL ACTIVITY, YEAST (7973)
  - ALKALINE PHOSPHATASE, BONE, L-HOMOARGININE, INHIBITOR (7923)
  - ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, HEPATOMA, THYROID REGULATION (8270)*
  - ALTITUDE, PRESSURE, FAT (7904)*
  - AMEBIC CYST, HAMSTER (8490)
  - AMINO ACID, METABOLISM, DISORDERS (8262)*
  - AMINOLEVULINIC ACID SYNTHETASE, INDUCTION, NEONATAL (7897)*
  - AMINOPYRINE METHYLASE, NICKEL CARBONYL (7922)*
  - ANATOMY, SURGERY (7806)
  - ARGININE INCORPORATION, HEPATOMA, RAT, IN VITRO (7946)
  - ARTERY, LIGATION, RIGHT LOBE METASTASES, COLON, CANCER (8450)
  - ARTERY, STENOSIS, ARTERIOGRAPHY, SURGERY (8473)
  - AUTORADIOGRAPHY, NECROSIS, CC14-DAMAGE (8325)*
  - BENZO (ALPHA) PYRENE HYDROXYLASE, INDUCTION (7928)
  - BILIARY CIRRHOSIS, HISTOLOGY, IMMUNOLOGY (8387)
  - BILIRUBIN, UDP-GLUCURONYL TRANSFERASE, BIOPSY (7779)*
  - BLOOD FLOW, CHOLERESIS, DRUG EFFECTS (7924)
  - CANCER, DIETARY CHOLESTEROL, MOUSE (8276)
  - CARBON TETRACHLORIDE, PHENOBARBITAL, SKF 525A (8323)*
  - CARCINOGEN, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE, TRNA (7906)*
  - CARCINOGENESIS, DNA SYNTHESIS, AZO DYE (7902)*
  - CARNITINE ESTER, METABOLISM (7970)
  - CATALASE INDUCTION, HEMATIN, CX-REACTIVE PROTEIN RESPONSE (7957)

CC14, HEPATOTOXICITY, COLD ENVIRONMENT (8331)
CC14, NICOTINAMIDE, CHOLINESTERASE (7917)*
CELL INFLAMATION, KUPFFER CELL HYPERPLASIA, JUVENILE RHEUMATOID ARTHRITIS (8267)*
CELLULAR CARCINOMA, DNA-LIKE RNA, TEMPLATE (8265)*
CHOLESTASIS, HEPATITIS, CHOLESTEROL METABOLISM, RAT (8318)*
CHOLESTASIS, THERAPY (8289)
CHOLESTEROL BIOSYNTHESIS, NEOMYCIN, MAN (7882)*
CHOLESTEROL METABOLISM, HEPATECTOMY, RAT (7948)
CHOLESTEROL METABOLISM, PHENOBARBITAL (7932)
CHRONIC ETHANOL, PYRIDINE NUCLEOTIDES (7971)
CIRRHOSIS, BLOOD CLOTTING FACTORS, PARENCHYMAL DAMAGE (8389)
CIRRHOSIS, CHRONIC HEPATITIS, VEGETATIVE NERVOUS SYSTEM SURGERY, CHILDREN (8365)
CIRRHOSIS, CYTOCHEMISTRY, CHILDREN (8388)
CIRRHOSIS, DIABETES MELLITUS, ALCOHOL, CC14 (8316)*
CIRRHOSIS, ENTEROHEPATIC CIRCULATION, ERYTHROCYTES (8394)
CIRRHOSIS, EPIDEMIOLOGY, ETIOLOGY (8377)
CIRRHOSIS, ETIOLOGY, HISTOLOGY (8384)
CIRRHOSIS, FREE PORTAL VENOUS PRESSURE WEDGED HEPATIC (8371)*
CIRRHOSIS, HEMORRHAGE, TREATMENT (8379)
CIRRHOSIS, HEPATIC MYELOPATHY, ANATOMOPATHOLOGY (8380)
CIRRHOSIS, HISTOLOGY, AUTORADIOGRAPHY, RAT (8376)*
CIRRHOSIS, (COMPENSATED), INDOCYANINE-GREEN TEST (8016)
CIRRHOSIS, KALA-AZAR INFECTION (8492)
CIRRHOSIS, ORNITHINE-ASPARTATE TREATMENT, BLOOD AMMONIA LEVEL (8390)
CIRRHOSIS, PATHOLOGY, BIOCHEMISTRY, HEPATIC INSUFFICIENCY (8393)
CIRRHOSIS, PATHOLOGY, IMMUNOLOGY (8386)
CIRRHOSIS, PLASMA ESTROGENS, ESTROGEN METABOLISM (8383)
CIRRHOSIS, SYMPTOMATOLOGY, THERAPY (8392)
CIRRHOSIS, UMBILICAL VEIN CATHETERIZATION, PERITONEOTOMY (8385)
CIRRHOSIS, VIRAL HEPATITIS, SERUM LIPOPROTEINS (8266)*
CIRRHOSIS, ZINC, COLLAGEN (8369)*
COMA, VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (8340)*
CYTOPLASM, PROTEIN, HEMOGLOBIN SYNTHESIS, RABBIT (7800)
CYTOPLASM, 17-HYROXYSTEROID, NAD (P) OXIDOREDUCTASE (7820)
DAMAGE, CARBON TETRACHLORIDE POISONING, MAN (8335)
DAMAGE, TRICHLOROETHYLENE, LOBULE HISTOLOGY (8334)
DIABETIC CHINESE HAMSTER, GLUCONEOGENIC ENZYMES (8279)
DIACETAMIDOFLUORENE, CARCINOGENESIS, RESERPINE INHIBITION, MOUSE (8305)
DIAGNOSTIC PROCEDURE, ROSE BENGAL EXCRETION (8049)
DIHYDROURACIL DEHYDROGENASE (7812)
DRUG METABOLISM, METHYLCHOLANTHRENE DERIVATIVES, RAT (7943)
ECHINOCOCCOSIS, RADIOLOGY, RADIOISOTOPE (8013)
ENDOGENOUS ETHANOL, ALCOHOL DEHYDROGENASE (7903)*
ENZYMES, ABNORMALITIES, DIABETES (7919)*
ERYTHROPOIESIS, GROWTH, PROLIFERATION KINETICS (7958)
EXCRETORY FUNCTION, BILE FLOW, HEPATOBILIARY TRACT DISEASES (8277)
EXPERIMENTAL ACUTE INSUFFICIENCY, MORPHOLOGY, DOG (8286)
EXTRACT INHIBITOR, NUCLEIC ACID SYNTHESIS, MAN (7955)
FATTY, TETRACYCLINE (8333)
FLUORIDE, GLYCOLYSIS, CITRIC ACID CYCLE (7914)*
FREE AND MEMBRANE BOUND RIBOSOMES, ABSOLUTE STARVATION, RAT (7816)
FUNCTION, CYCLOPHOSPHAN TREATMENT, LUNG CANCER (8042)
FUNCTION, PERFUSION TECHNIQUE, RAT (7934)
FUNCTION, STRUCTURE, SEVINE, RAT, RABBIT (8339)
FUNCTION, VIRAL HEPATITIS, BONE MARROW DAMAGE (8358)
FUNCTION, VIRAL HEPATITIS, OVARIES ENDOCRINOLOGY (8352)
GLUCAGON, ETHANOL METABOLISM (7972)
GLUCONEOGENESIS, HORMONAL CONTROL (7951)
GLUCONEOGENESIS, PYRUVATE, RAT (7966)
GLUCOSE, ETHIONINE, ULTRASTRUCTURE (8330)
GLYCOGEN, PESTICIDES, RAT (7979)
GLYCOGEN CONTENT, FAST NEUTRONS, X-RAY (7959)
GLYCOLYSIS, GLUCONEOGENESIS, DIABETES (7964)
GRANULOMATOUS DISEASE, ACUTE (7901)*
GROWTH, GENETICS, CASTRATION, HEPATOMA (7908)*
GUANINE DEAMINASE, INDUCTION, STRESS (7969)
HEMANGIOMATOSIS, THROMBOSIS, ORAL CONTRACEPTIVE (8433)
HEMANGIOPERICYTOMA, HYPOGLYCEMIA (8302)
HEPATOMA, CHOLANGIOMA, PRIMARY CANCER (8310)
HEPATOMEGALY, BIOPSY, DIAGNOSIS (8050)
HEMATOPOIESIS, MORPHOLOGY, FETAL MOUSE (7815)
HEMOGLOBIN H, DISEASE, HEMOSIDEROSIS (8311)

HEMORRHAGE, VENOUS, CONTROL (8428)
HEPATIC ARTERY, PORTAL VEIN, AMINO ACID (7994)•
HEPATITIS, ACUTE VIRAL, AUSTRALIA ANTIGEN (8353)
HEPATITIS, CHRONIC, AUSTRALIA ANTIGEN, AUTOANTIBODIES (8364)•
HEPATITIS, EPIDEMIC, SHORT INCUBATION (8346)•
HEPATITIS, VIRAL, FECAL ANTIGEN (8347)•
HEPATITIS, VIRAL, ACUTE, ANTIGEN, AUTOANTIBODIES (8349)•
HEPATOMA, CARBOHYDRATE METABOLISM, ENZYMES (8295)
HEPATOSIS, CHOLESTASIS (8290)
HISTOCHEMISTRY, CHOLECYSTOPANCREATITIS (8254)
HISTOCHEMISTRY, THIOPENTAL, RAT (7980)
HISTOLOGY, LUPOID HEPATITIS, LUPUS ERYTHEMATODES VISCERALIS (8332)
HISTONE, METHYLASE ACTIVITY, EMBRYONIC ADULT, NEOPLASTIC TISSUE (7952)
HYDROXYUREA, UREA (7945)
IMMUNOGLOBULIN, SERUM BILIRUBIN, TRANSAMINASE (7904)•
INBORN FRUCTOSE INTOLERANCE, LACK OF FRUCTOSE-1-P, SPECIFIC ALDOLASE, TYROSINE METABOLISM (8313)
INJURY, ETHIONINE, POLYRIBOSOMES, NUCLEOLUS (8317)•
INJURY, INTRAHEPATIC SHUNT (8321)•
INJURY, MEGALOCYTOSIS, PYRROLIZIDINE INDUCED (8322)•
INJURY, RADIATION, RNA, ATP (8338)
INJURY, THYROID, BSP (8319)•
ISOLATED CELL, SODIUM TETRAPHENYLBORON MORPHOLOGY (7795)•
JAUNDICE, DIAGNOSTIC PROCEDURE, BILE SALT (8312)
LACTIC DEHYDROGENASE ISOENZYMES, CHRONIC HEPATITIS, CHOLELITHIASIS (8296)
LESIONS, 5-HYDROXYTRYPTAMINE-INDUCED (8327)•
LOBECTOMY, HEPATOBLASTOMA, CHEMOTHERAPY, RADIOTHERAPY, INFANT (8308)
LYSINE COMPARTMENT, METABOLISM (7771)•
LYSOSOMES, ADRENALECTOMY, RAT (7818)
MEMBRANE, ELECTRON MICROSCOPY (7797)•
MEMBRANE, PERMEABILITY, CIRCADIAN (7975)
METABOLISM, DAMAGE, HALOTHANE EFFECT (8344)
METABOLISM, HEPATECTOMY, URETHAN (7885)•
METABOLISM, N-METHYLCARBAMATES, MAN, RAT (7942)
METABOLISM, RESPONSE, PORTACAVAL SHUNT (M905)•
METABOLISM, XANTINOL NICOTINATE (7961)
METASTASIS, HEPATOMA, ULTRASTRUCTURE, CHICK EMBRYO (8050)
MICROSOMAL ENZYMES, SPIRONOLACTONE, INDUCTION, MOUSE (7941)
MICROSOMAL INDUCTION, DDT, PHENOBARBITONE, POISON (8341)
MICROSOME, ETHANOL METABOLISM, RAT (7888)•
MICROSOME, MONOOXYGENASE INDUCTION, ASCORBIC ACID, RAT (7933)
MICROSOME, ALIPHATIC HYDROXYLATION (7897)•
MICROSOME, CYTOCHROME P-450, EPR (7801)
MICROSOME, DRUG METABOLISM, NICOTINAMIDE (7918)•
MICROSOME, DRUG OXIDATION (7925)
MICROSOME, DRUG OXIDATION, REGULATION (7967)
MICROSOME, SMOOTH, MORPHOLOGY (7782)•
MICROSOME, 3-METHYLCHOLANTHRENE, 7,12-DIMETHYLBENZ(A)ANTHRACENE (7929)
MITOCHONDRIA, BIOGENESIS, REGENERATION CHLORAMPHENICOL (7795)•
MITOCHONDRIA, CHOLINE, BETAINE (7896)•
MITOCHONDRIA, ISOPYCNIC CENTRIFUGATION, SUCROSE GRADIENT (7810)
MITOCHONDRIA, RNA POLYMERASE, RIFAMPICIN, RAT (7939)
MITOCHONDRIAL, COENZYME Q, HYPERTHYROIDISM (7909)•
MITOCHONDRIAL RESPIRATION, KREBS CYCLE INTERMEDIATES, VIBRIO, CHOLERAE, ENDOTOXINS (7978)
MONOOXYGENASE, STEROID HYDROXYLATION, PHENOBARBITAL (7953)
MORPHOLOGY, ANTITUBERCULAR, STREPTOMYCIN (8337)
MORPHOLOGY, CHOLECYSTIC PANCREATITIS, BILE DUCT ALTERATIONS, DOG (8407)
MORPHOLOGY, CIRRHOSIS, CHRONIC HEPATITIS (8391)
MORPHOLOGY, ENZYME INDUCTION, PHENYLBUTAZONE, RAT (7790)•
N-DEALKYLASE, N-OXIDASE, AGE (7891)•
NECROSIS, CHRONIC HEPATITIS, DYSPROTEINEMIA (8367)
NECROSIS, GRANULOCYTE, SURGERY, CHOLECYSTOLITHIASIS (8298)
NUCLEAR MEMBRANE, LIPID COMPOSITION (7778)•
NUCLEAR MEMBRANE, PERMEABILITY, DIETHYLNITROSAMINE (7976)
NUCLEI, MESSENGER RNA, PROTEIN MOIETY (7911)•
NUCLEIC, RNA, MESSENGER (7910)•
NUCLEOLI, ACTINOMYCIN D, MORPHOLOGY (7799)
NUCLEOLI, DENSE PARTICLES (7787)•
ORTHOTOPIC AND HETEROTOPIC HOMOGRAFT, PRIMARY CANCER, MAN (8302)
OXIDATIVE PHOSPHORYLATION, ATP-ASE, MG+ (7968)
PANCREAS, TRYPSIN INHIBITOR (7814)
PERFUSED, MEMBRANE POTENTIAL, ION CONCENTRATIONS (7838)
PERFUSED, PROSTAGLANDIN (7913)•
PERFUSION, CIRCUIT CHARACTERISTICS, PIG (8001)
PEROXIDASE, KUPFFER CELLS (7792)•
PHENOBARBITAL DEMETHYLATION, AROMATIC AMINES, PREGNANT RAT, FETUS (7947)

PHOSPHATIDYLETHANOLAMINE, ETHANOLAMINE, CHOLINE DEFICIENCY (7887)*
PHOSPHATIDYLINOSITOL, METABOLIC REACTIVITY (7781)*
POLYRIBOSOME, DEGRADATION, BENZENE (7927)
PORPHYRIA, ACUTE, DELTA-AMINOLEVULINIC ACID (8269)*
PORTACAVAL, ANASTOMOSIS, INFECTION (8430)
PORTAL CIRRHOSIS, NITROGEN METABOLISM (8375)*
PORTAL HYPERTENSION, COLONIC VARICES, HEMORRHAGE (8299)
PORTAL VEIN, HEPATIC ARTERY, MESENTERIC BLOOD FLOW (7995)*
PROTECTION, ORNITHINE-ASPARATATE MIXTURE, LUNG TUBERCULOSIS TREATMENT (8366)
PROTEIN, 4-DIMETHYLAMINOAZOBENZENE, CARCINOGENESIS (8282)
PROTEIN TURNOVER, OROTIC ACID, RAT (7937)
PYRUVATE CARBOXYLASE PROTECTION, AVIDIN INHIBITION, CHICKEN (7949)
PYRUVATE HOLOCARBOXYLASE, SYNTHESIS, CHICKEN (7935)
RED CELL STASIS, SHOCK (8283)
REGENERATION, CARCINOGENESIS, NUCLEAR DNA TRANSFER (7974)
REGENERATION, CO2 FIXATION, RABBIT (7981)
REGENERATION, HEMIHEPATECTOMY, CHILDREN (8280)
REGENERATION, HISTONE SYNTHESIS, RAT (7954)
REGENERATION, SELENIUM THERAPY, VIRAL HEPATITIS, HAMSTER (8354)
REGENERATION, SPLENECTOMY, DOG (7977)
REGENERATION, TRANSFER RNA, METHYLATION (7884)*
RESECTION, PRIMARY CANCER, METASTATIC, CHILDREN (8300)
RESERPINE, TOXICITY, ULTRASTRUCTURE (8328)*
RIBOSOME, PROTEIN SYNTHESIS, RAT (7950)
RIBOSOME, SUBUNIT, MICROSCOPY (7784)*
RIBOSOME FRACTION, POLYPHENYLALANINE SYNTHESIS INITIATION (7817)
RIBOSOME PROTEINS, ATIGENIC PROPERTIES HEPATOMA, RAT (7809)
RNA, HIGH MOLECULAR WEIGHT, NUCLEASE (7915)*
RNA, MESSENGER, POLYSOME (7916)*
SCANNING, 99MTC-TECHNETIUM DIOXIDE, BLOOD-FLOW STUDY (8050)
SCANNING, VIRAL HEPATITIS, FUNCTIONAL ALTERATIONS (8351)
SECONDARY TUMORS, HEPATIC ARTERY, 5-FLUOROURACIL (8301)
SINUSOIDS, ENDOTHELIAL LINING, MICROSCOPY (7791)*
16-ALPHA-GLUCURONYLTRANSFERASE, CYTOSOLIC, PROPERTIES (7783)*
SOLUBLE PROTEIN, DEGRADATION, SIZE (7899)*
SORBITOL DEHYDROGENASE, DIETHYLNITROSAMINE, RAT (8297)
SORBITOL DEHYDROGENASE, GLUTAMIN DEHYROGENASE, CC14 LIVER DAMAGE (8320)*
SPLEEN, AMYLOIDOSIS, RESORPTION HISTOLOGY (8480)
STEATOSIS, CIRRHOSIS, HEPATITIS, DIAGNOSIS, SERUM IMMUNOGLOBULINS (8023)
STEATOSIS, ENCEPHALOPATHY, URIC ACID LEVELS, CHILDREN (8304)
STEATOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS, CHRONIC ALCOHOLISM (8306)
SUBMICROSOMAL FRACTIONS, ESTERASES (7774)*
SUBMITOCHONDRIAL PARTICLES, NADH OXIDATION, N'-ALKYLNICOTINAMIDE CHLORIDE (7926)
THIOACETAMIDE INDUCED, CIRRHOSIS, DEHYDROGENASES, HISTOCHEMISTRY (8382)
TOXIC DAMAGE, RESORT TREATMENT (8336)
TRANQUILIZERS, HISTOPATHOLOGY, HEPATITIS (8329)
TRANSAMINASE, PYRAZINAMIDE, TOXICITY (8324)*
TRANSKETOLASE ACTIVITY, SOUND EFFECT (7963)
TRANSPLANT, IMMUNOLOGY, PIG, DOG (8285)
TRANSPLANT, ISOGENIC, HISTOPATHOLOGY (8281)
TRAUMA, DIAGNOSIS, TREATMENT (8028)
TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, QUINOLINIC ACID STIMULATION (7938)
TUMOR, BLOOD SUPPLY (8263)*
TUMOR, MICROSOMES, MITOCHONDRIA, LIPIDS (8287)
UDP-GLUCURONIC ACID PYROPHOSPHATASE, HOMOGENATE, MICROSOMES (7776)*
ULTRASTRUCTURE, GOLGI, ELECTRON MICROSCOPY (7798)*
VEIN, INNERVATION, CAT, DOG (7996)
VIRAL HEPATITIS, IMMUNOGLOBULIN LEVEL, DIAGNOSIS (8035)
PERFUSED, AMPHETAMINE REMOVAL, MONOAMINE OXIDASE INHIBITORS, CAT (7940)
PERFUSED, TYROSINE AMINOTRANSFERASE, HYDROCORTISONE INDUCTION, HISTONES (7936)

LIVER DISEASE
  BLOOD ALTERATIONS, VITAMIN B12 (8291)
  CHRONIC, SCANNING, RADIOACTIVE COLLOIDAL GOLD (8020)
  HEPATITIS, HALOTHANE, LYMPHOCYTE (8326)*
  METABOLAN (8292)

LYMPH CIRCULATION
  LYMPHANGIECTASIS, INTESTINAL (8460)

LYMPHANGIECTASIA
  INTESTINAL, CHYLOUS ASCITES, WALDMANN DISEASE (8471)

LYSOSOME
  LIVER, ADRENALECTOMY, RAT (7818)

MALABSORPTION

- CHOLECYTOCOLONIC, FISTULA (8412)
- DIAGNOSIS, ABSORPTION TESTS, ETIOLOGY (8052)
- DRUG INDUCED, CHOLESTYRAMINE, ANEMIA (8179)
- FAT, GLUCOSE, HYPERTONIC MANNITOL (8168)*
- HISTOPATHOLOGY, MUCOSA POUCHES, JEJUNUM (7853)*
- INTESTINAL, CALCIUM, VITAMIN B12 (8174)
- INTESTINAL, GLUTENENTEROPATHY, PANCREAS (8169)
- INTESTINE, CALCIUM LOSS, HYPOCALCEMIA (8172)
- LACTASE, GENETIC (8175)
- SMALL BOWEL BY-PASS, OBESITY, DIET (8178)

MALFORMATION
- GASTROINTESTINAL TRACT, THALIDOMIDE, RABBIT EMBRYO (8481)

MALNUTRITION
- MARASMUS, PANCREATIC EXOCRINE FUNCTION INFANTS (8426)

MEMBRANE
- ENZYMES, PLASMA, MICROSOMES, HEPATOMA (7802)
- JUNCTION, LIVER, ELECTRON MICROSCOPY (7797)*
- NUCLEAR, LIVER, LIPID COMPOSITION (7778)*
- NUCLEAR, PERMEABILITY, CIRCADIAN (7976)
- PERMEABILITY, LIVER CELL, NUCLEI (7975)

MESENTERY
- ACUTE INFARCT, SUPERIOR MESENTERIC ARTERY OCCLUSION, SYMPATHECTOMY (8445)
- CIRCULATION, ARGENTAFFIN CARCINOMA, SCLEROSIS (8151)
- FIBROMA, RECTOPOLYPOSIS (8200)
- INFARCTION, X-RAY DIAGNOSIS, VASCULAR OCCLUSION (8444)
- LIPODYSTROPHY (8173)
- LYMPHANGIOMA, MICROCIRCULATION, LYMPHATICO-VENOUS SHUNT (8464)
- SMALL INTESTINE, MICROCIRCULATION, HEMODYNAMICS (7997)

- VENOGRAPHY (7993)*

METABOLISM
- AMINO ACID, LIVER, DISORDERS (8262)*
- AROMATIC AMINES, DEMETHYLATION, PHENOBARBITAL, LIVER (7947)
- BILIRUBIN, TRANSFER, INTRAHEPATIC CONJUGATION, GLUCURONIDE TRANSFERASE (7956)
- CCl4, DRUG, FASCIOLA HEPATICA (8491)
- CHOLESTEROL, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, LIVER DAMAGE (8318)*
- CHOLESTEROL, LIVER, HEPATECTOMY, RAT (7948)
- CHOLESTEROL, LIVER, PHENOBARBITAL (7932)
- CHOLESTEROL BIOSYNTHESIS, NEOMYCIN, LIVER, MAN (7887)*
- ETHANOL, LIVER MICROSOME, RAT (7888)*
- FLUORIDE, LIVER, GLYCOLYSIS, CITRIC ACID CYCLE (7914)*
- GLUCONEOGENESIS, PYRUVATE, PERFUSED RAT LIVER (7966)
- GLYCOREGULATION, GASTRECTOMY (8101)
- HYDROXYUREA, LIVER, MOUSE, UREA (7945)
- IMIPRAMINE, DESMETHYLIMIPRAMINE, BILIARY EXCRETION (7944)
- LIPID, CARBOHYDRATE, PROTEIN, IRON, GASTRECTOMY (8100)
- LIVER, CARNITINE ESTER (7970)
- LIVER, DAMAGE, HALOTHANE EFFECT (8344)
- LIVER, DRUGS, METHYLCHOLANTHRENE DERIVATIVES, RAT (7943)
- LIVER, ETHANOL, GLUCAGON (7972)
- LIVER, GLUCONEOGENESIS, HORMONAL CONTROL (7951)
- LIVER, GLYCOLYSIS, GLUCONEOGENESIS, DIABETES (7964)
- LIVER, LYSINE, COMPARTMENTATION (7771)*
- LIVER, RADIATION INJURY, RNA, ATP (8338)
- LIVER, RESPONSE, PORTACAVAL SHUNT (7905)*
- LIVER, XANTINOL NICOTINATE (7961)
- LIVER MITOCHONDRIA, CHOLINE, BETAINE (7896)*
- LIVER REGENERATION ENHANCEMENT, CO2 FIXATION, RABBIT (7981)
- N-METHYLCARBAMATES, LIVER, MAN, RAT (7942)
- TRANSFER RNA, METHYLATION, REGENERATION (M884)*
- TYROSINE, HEREDITARY FRUCTOSE INTOLERANCE, ALDOLASE (8313)
- URETHAN, HEPATECTOMY (7885)*
- WATER, ELECTROLYTE, CHOLECYSTITIS, SURGERY (8410)
- ZINC, GASTRIC AND DUODENAL ULCER (8133)

METAL
- CALCIUM, INTESTINAL MUCOSA, MITOCHONDRIA (7830)*
- CHROMIUM, ENTEROPATHY (8459)
- IRON, ABSORPTION, WHOLE-BODY COUNTING (7842)
- IRON ABSORPTION, GASTROINTESTINAL TRACT, COBALT (7832)*
- IRON ABSORPTION, NEOMYCIN, GERMFREE RATS (7829)*
- IRON-BINDING CAPACITY, PLASMA, ORAL OVERLOADING, NORMAL AND HYPERTHYROID PATIENTS (7847)

METASTASIS
- LIVER, BLOOD SUPPLY, TUMOR (8263)*

MICROSOME
- HEPATOTOXICITY, METABOLISM, CCl4, DIETHYLDITHIOCARBAMATE (8345)
- LIVER, ENZYME INDUCTION, CHLOROFORM, RETROSINE (8341)
- LIVER, ALIPHATIC HYDROXYLATION (7897)*
- LIVER, CYTOCHROME P-450, EPR, METHYLCHOLANTHRENE (7801)
- LIVER, DRUG METABOLISM, NICOTINAMIDE (7918)*

  - LIVER, HYDROXYLATION, CYTOCHROME P-450 (7921)•
  - LIVER, SMOOTH, ENZYMES (7782)•
- MITOCHONDRIA
  - ELECTRON TRANSFER CHAIN, VIBRIO CHOLERAE ENDOTOXINS, KREBS CYCLE INTERMEDIATES, LIVER (7978)
  - HISTOPATHOLOGY, MYELIN FIGURES, ELECTRON MICROSCOPY (8091)•
- MORPHOLOGY
  - ACUTE ESOPHAGITIS, RADIOLOGY, CAT (8079)
  - ACUTE LIVER INSUFFICIENCY, DOG (8286)
  - EXOCRINE PANCREAS, FERRIC CITRATE, LIPOMATOSIS (7790)•
  - GASTRIC SMOOTH MUSCLE CELL MITOSIS, CHICK, GIZZARD (7819)
  - HEMATOPOIESIS, LIVER, FETAL MOUSE (7815)
  - ISOLATED HEPATIC CELL, SODIUM, TETRAPHENYL BORON (7795)•
  - LIVER, NUCLEOLI, ACTINOMYCIN D (7799)
  - LIVER CIRRHOSIS, GALACTOSAMINE, AUTORADIOGRAPHY, RAT (8376)•
  - LIVER DAMAGE, TUBERCULOSIS CHEMOTHERAPY (8337)
  - WILSON'S DISEASE, GLIOPATHY, HEPATOGENIC (8272)•
- MOTILITY
  - ADRENERGIC RECEPTORS, COLON (7854)•
  - COLON, RECTUM, PERISTALSIS (7855)
  - ELECTRICAL, MECHANICAL PAPAVERINE, TAENIA COLI (7857)
  - ESOPHAGUS, HIATUS HERNIA, ANATOMOPATHOLOGY (8070)
  - GALLBLADDER, CHOLESTEROL GALLSTONE, BILE CONSTITUENTS (7930)
  - GASTRIC EMPTYING, ALCOHOL (7850)•
  - GASTRODUODENAL, GASTROINTESTINAL DISEASES, METCLOPRAMIDE (8455)
  - ILEUM, LONGITUDINAL MUSCLE, SCHULTZ-DALE RESPONSE (7856)
  - INTESTINAL, SMOOTH MUSCLE, PRESSURE (7999)
- MUCOSA
  - DUODENAL, HALF LIFE, ENZYME SECRETION, PANCREAS (7880)•
  - FUNDIC, ANTRECTOMY (8089)•
  - GASTRIC, ACID SECRETION, CHRONIC, ATROPHIC GASTRITIS (8128)
  - GASTRIC, IMMUNOPATHOLOGY (8105)
  - GASTRIC, SEROTONIN, PEPSIN, SECRETION (7868)
  - INTESTINAL, GALACTOSEMIA, GALACTOSE-1-PHOSPHATE URIDYL TRANSFERASE (8273)•
  - SMALL INTESTINE, EPITHELIAL CELLS (7982)•
- MUSCLE
  - COLON, MOTILITY, ADRENERGIC RECEPTORS (7854)•
  - SMOOTH, INTESTINAL, MOTILITY (7999)
  - TAENIA COLI, ELECTRICAL, MECHANICAL ACTIVITY PAPAVERINE (7857)
- NEOPLASM
  - ADENOCARCINOMA, ESOPHAGEAL EPITHELIUM, MALIGNANCY (8067)
  - CARCINOID, LARGE INTESTINE, MALIGNANCY (8181)
  - COLORECTAL, CARCINOMA, FLUOROURACIL, RADIOACTIVE GOLD (8209)
  - GASTRIC, PHLEGMONOUS GASTRITIS, SURGERY, ANTIBIOTIC MANAGEMENT (8122)
  - HEMANGIOPERICYTOMA, LIVER, HYPOGLYCEMIA (8302)
  - HEPATOMA, RIBOSOMAL PROTEINS, ANTIGENIC PROPERTIES, RAT (7809)
  - MYOGENIC TUMORS, STOMACH, GASTROSCOPY, PATHOLOGY (8118)
  - PRIMARY LIVER CARCINOMA, METASTATIC, RESECTION, CHILDREN (8300)
  - RETENTION POLYPOSIS, COLON, RECTUM, CHILDREN (8189)
- NUCLEOTIDE
  - LIVER, NAD-NADH, NADP-NADPH, ETHANOL (7971)
  - NADH OXIDATION, INHIBITION, N'-ALKYLNICOTINAMIDE CHLORIDE (7926)
- OBSTRUCTION
  - LARGE INTESTINE, HERNIA, IRREDUCIBLE (8121)
  - SMALL INTESTINE, DUODENOJEJUNAL JUNCTION (8076)
- ODDI, SPHINCTER OF
  - LIVER, ATP-ASE, MG++ (7968)
  - SPHINCTEROTOMY, ACUTE PANCREATITIS, PROPHYLAXIS, MORTALITY RATE (8258)
- OXIDATIVE PHOSPHORYLATION
  - LIVER, ATP-ASE, MG+ (7968)
- PAIN
  - ABDOMINAL, SURGERY (8438)
- PANCREAS
  - ACINAR CELL, PENTAGASTRIN, RAT (8309)
  - CARCINOMA, EARLY DIAGNOSIS, SURGERY (8239)
  - CARCINOMA, SPECIFIC AND NON-SPECIFIC TESTS, SELENOMETHIONINE SCANNING (8039)
  - CHRONIC ASCITES, ALCOHOLICS, PSEUDOCYST (8243)•
  - CYSTOADENOMA, SURGERY, ETIOLOGY (8228)
  - DEVELOPMENT, MORPHOLOGY (7780)•
  - DUODENUM, CLOSED TRAUMA, SURGERY (8288)
  - ENDOCRINE FUNCTION, CHRONIC PANCREATITIS, HISTOLOGY (8251)
  - ENZYME SECRETION, HALF LIFE (7880)•
  - EXOCRINE, INSUFFICIENCY, GLUTENENTEROPATHY, PHYSIOPATHOLOGY (8169)
  - EXOCRINE, MORPHOLOGY, FERRIC CITRATE, LIPOMATOSIS (7790)•
  - EXOCRINE, ULTRASTRUCTURE, HIBERNATING FROG (7793)•
  - EXOCRINE FUNCTION, DUMPING SYNDROME, GASTRIC RESECTION, ULCER (8130)
  - EXOCRINE FUNCTION, MARASMUS, INFANTS (8426)
  - FALSE CYST, COLON INVOLVEMENT, INTESTINAL OCCLUSION (8231)
  - FIBROBLASTIC SARCOMA, HISTOLOGY, ETIOLOGY (8230)
  - FUNCTION TESTS, PANCREATITIS, ACUTE, CHRONIC, CARCINOMA, CYSTIC FIBROSIS (8040)
  - HEAD, CARCINOMA, DIAGNOSIS (8241)

- HETEROTOPIA, PHYSIOPATHOLOGY, SURGERY (8235)
- IMPLANTATION (8234)
- INJURY, DIAGNOSIS, SERUM AMYLASE (8237)
- INSUFFICIENCY, ENTEROKINASE, TRYPSIN, CHYMOTRYPSIN (8029)
- LESIONS, LIQUID DIET, FLORA (8227)*
- PANCREATITIS, CHRONIC SURGERY (8246)
- PANCREATITIS, CHRONIC, TREATMENT (8259)
- PSEUDOCYST (8233)
- PSEUDOCYST, FALSE ANEURYSM OF HEPATIC ARTERY, SURGERY (8236)
- SCINTILLOGRAPHY, SURGERY, DRAWBACKS (8015)
- SECRETION, BILE SALTS (7881)*
- SECRETION, CERULEIN, ACIDITY, PEPSIN (7877)*
- SECRETION, CERULEIN, BILE (7878)*
- SECRETION, CHOLECYTOKININ, PANCREOZYMIN (7882)
- SECRETION, DRUGS, REGULATION (7879)*
- SEPTIC ABSCESS, TOXIC ABSCESS, ACUTE PANCREATITIS, SURGERY, MORTALITY (8248)
- TRAUMA, POSTOPERATIVE PANCREATITIS, BILIARY AND GASTRIC SURGERY (8252)
- TRAUMA, SURGERY, ASSOCIATED ORGANS (8232)
- TUMOR, DIAGNOSIS, PAIN (8242)
- TUMOR, DIAGNOSIS, ULTRASOUND (8053)
- TUMOR, HISTOLOGY, DIARRHEA, EARLY DIAGNOSIS, SELENOMETHIONINE SCAN (8238)
- TUMOR, PORTAL VARICES, GI HEMORRHAGE (8226)*
- TUMOR SURGERY, ZOLLINGER-ELLISON SYNDROME, ANTICHOLINERGICS (8479)
- TUMORS, SURGICAL DIFFERENTIATION (8240)
- VIRAL HEPATITIS, DIABETES MELLITUS, ETIOLOGY (8362)

PANCREATECTOMY
- HYPERTROPHIC PANCREATITIS, PLEURAL ENZYME EFFUSION (8256)

PANCREATITIS
- ACUTE, CHRONIC, FUNCTIONAL TESTS, PANCREATIC CARCINOMA, CYSTIC FIBROSIS (8040)
- ACUTE, EDEMA, NECROSIS, SURGERY (8257)
- ACUTE, ETIOLOGY, MORTALITY, SURGERY (8248)
- ACUTE, FAT NECROSIS, ISCHEMIA, PANCREATIC ENZYMES (8261)
- ACUTE, PATHOGENESIS, BILE (8244)
- ACUTE, PELURAL ENZYME EFFUSION, CONSERVATIVE AND SURGICAL TREATMENT (8256)
- ACUTE, SELENIUM METHIONINE, SCANNING, PROGNOSIS (8044)
- ACUTE, SPHINCTER OF ODDI, PROPHYLAXIS, MORTALITY RATE (8258)
- ALCOHOLIC, BILIARY, IDIOPATHIC VASCULAR, SURGERY (8253)
- ALCOHOLIC, ETIOLOGY, PATHOGENESIS, HISTOLOGY (8245)
- CHOLECYSTITIS, LIVER HISTOCHEMISTRY (8254)
- CHRONIC, CHOLECYSTIC, LIVER, MORPHOLOGY, BILE DUCT ALTERATIONS (8407)
- CHRONIC, DIABETES MELLITUS (8247)
- CHRONIC, ENDOCRINE FUNCTION, GLUCOSE LOADING, PLASMA, INSULIN (8250)
- CHRONIC, ENDOCRINE, PANCREATIC FUNCTION, HISTOLOGY, POTENTIAL DIABETES (8251)
- CHRONIC, PLASMA INSULIN LEVEL, EXOCRINE AND ENDOCRINE PANCREAS, DIABETES MELLITUS (8362)
- CHRONIC, PLEURAL ENZYME EFFUSION, SURGERY, HEMORRHAGIC ASCITES (8255)
- CHRONIC, SURGERY (8246)
- CHRONIC, TREATMENT (8259)
- POSTOPERATIVE, BILIARY AND GASTRIC SURGERY, PATHOGENESIS (8252)
- RESEARCH METHODS, ACINAR CELLS (8260)

PAPILLOMATOSIS
- DISSEMINATED, HEPATOBILIARY TRACT, CYSTIC ENLARGEMENT (8288)

PARASITE
- ANISAKIS LARVA, ILEAL, EOSINOPHILIC GRANULOMA, INTESTINAL OBSTRUCTION (8489)
- ASCARIASIS, BILE DUCT, PANCREATITIS (8495)
- ECHINOCOCCUS, LIVER, RADIOLOGY, RADIOISOTOPE (8013)
- ENTAMEBA, HISTOLYTICA, INTESTINE, METRONIDAZOLE TREATMENT (8501)
- ENTAMEBA, HISTOLYTICA, LIVER CYSTS, HAMSTER (8490)
- HELMINTHIASIS, GASTROENTERITIS, CONTROL, CALF (8500)
- INTESTINAL, CHEMOTHERAPY, PHENYLENE 1,4-DIISOTHIOCYANATE (8493)
- INTESTINAL, TESTING, TROPICS (8493)
- KALA-AZAR, LIVER CIRRHOSIS (8492)
- OPISTHORCHOSIS, HETOL, THAILAND (8496)
- SCHISTOSOMA MANSONI, EPIDEMIOLOGY, RHODESIA (8498)
- SCHISTOSOMA MANSONI, IMMUNOGLOBULIN LEVELS, EOSINOPHILIA (8499)
- SCHISTOSOMA MANSONI, SCHISTOSOMA HAEMATOBIUM, NIRIDAZOLE TREATMENT (8497)
- TOXOPLASMA GONDII, RESISTANCE, GI CIRCULATION (8488)

PARASITIC DISEASE
- AMEBIASIS, SKIN TEST (8021)
- FASCIOLA HEPATICA, SHEEP (8491)
- SCHISTOSOMAL POLYPOSIS, COLON, PROTEIN LOSS (8487)*
- SCHISTOSOMIASIS, ANTIBODIES, NIRIDAZOLE (8486)*
- SCHISTOSOMIASIS, FLUORESCENT ANTIBODIES (8485)*

PEPSIN
- SECRETION, HISTAMINE, PENTAGASTRIN (7871), (7872)

PERFUSION
- STOMACH SECRETION, 1-(3-(1-CYCLOHEXENYL)-3-PHENYLPROPYL)-1-METHYLPIPERIDINIUM BROMIDE (7875)

  - TECHNIQUE, ISOLATED LIVER FUNCTION, RAT (7934)
- PERITONEUM
  - 125 CELLULAR ABSORPTION, I-LABELED HUMAN SERUM ALBUMIN, MOUSE (7839)
- PERITONITIS
  - SHOCK, SMALL BOWEL OBSTRUCTION, GRAM NEGATIVE SEPSIS (8152)
  - STARCH GRANULOMATOUS, SURGICAL GLOVE POWDER (8421)•
- PHENOBARBITAL
  - TOXICITY, CARBON TETRACHLORIDE, ENHANCEMENT (8323)•
- PHOSPHOLIPID
  - PHOSPHATIDYLINOSITOL, LIVER, CHARACTERISTICS (7781)•
- PLASMA
  - IRON-BINDING CAPACITY, ORAL OVERLOADING, NORMAL AND HYPERTHYROID PATIENTS (7847)
- POISON
  - CARBON TETRACHLORIDE, LIVER DAMAGE, MAN (8335)
  - LIVER, CHLOROFORM, RETROSINE (8341)
  - PESTICIDE, LIVER GLYCOGEN, RAT (7979)
  - 2,4-DINITROPHENOL, LIVER, ACID SOLUBLE NUCLEOTIDES (8340)
- POLYP
  - COLON, ALLERGY, CHILDREN (8187)
  - RETENTION, COLON, RECTUM, CHILDREN (8189)
- POLYRIBOSOME
  - RAT LIVER, DEGRADATION, BENZENE (7927)
- PORPHYRIA
  - ACUTE, DELTA-AMINOLEVULINIC ACID (8269)•
- PORTAL HYPERTENSION
  - COLONIC VARICES, HEMORRHAGE, BARIUM ENEMA EXAMINATION (8299)
- PROLAPSE
  - RECTUM, SURGERY, RADIOLOGY (8186)
- PROSTAGLANDIN E1
  - UPTAKE, METABOLISM, LIVER (7913)•
- PROTEIN
  - GASTROFERRIN, GLYCOPROTEIN, GASTRIC JUICE (7785)•
  - LIVER, SOLUBLE, DEGRADATION (7899)•
  - LOW INTAKE, E.COLI INFECTION, PATAS MONKEY (8447)
  - SYNTHESIS, CIRRHOSIS, BLOOD CLOTTING FACTORS (8389)
  - SYNTHESIS, INITIATION, LIVER, RAT (7817)
  - SYNTHESIS, LIVER RIBOSOME, RAT (7950)
  - SYNTHESIS, NECROSIS, CC14-DAMAGE, AUTORADIOGRAPHY (8325)•
  - TURNOVER, OROTIC ACID, RAT LIVER (7937)
- PSEUDOCYST
  - PANCREAS (8233)
  - PANCREAS, FALSE ANEURYSM, HEPATIC ARTERY, SURGERY (8236)
- PYLOROPLASTY
  - VAGOTOMY, PEPTIC ULCER, CHILDREN (8117)
- PYLORUS
  - HYPERTROPHIC STENOSIS, INFANTS (8106)
- RADIOLOGY
  - PARENTERAL FEEDING, FATAL ACCIDENTS, INTESTINAL OBSTRUCTION (8434)
  - VISCERAL ARTERIES, STENOSIS, OBSTRUCTION, MORPHOLOGY (8431)
- RECTUM
  - CARCINOMA, SURGERY, ENDORECTAL TECHNIQUE (8183)
  - MUCOSA, SCANNING ELECTRON MICROSCOPY (8011)•
  - PROLAPSE, SURGERY, RADIOLOGY (8186)
  - SIGMOID DIVERTICULITIS, CANCER, DUHAMEL'S OPERATION (8204)
- REFLUX
  - ESOPHAGITIS, THERAPY (8059)
- REGENERATION
  - LIVER, HEMIHEPATECTOMY, SERIAL SCANS (8280)
  - LIVER MITOCHONDRIA, BIOGENESIS, CHLORAMPHENICOL (7892)•
- REGIONAL ENTERITIS
  - PATHOPHYSIOLOGY, DIAGNOSIS, ANTIMETABOLITE THERAPY (8164)
- RIBONUCLEIC ACID
  - MESSENGER, LIVER, NUCLEI (7910)•
  - MESSENGER, RNA, LIVER, NUCLEI (7911)•
- RIBOSOME
  - FREE AND MEMBRANE BOUND, LIVER, ABSOLUTE STARVATION, RAT (7816)
  - LIVER, ELECTRON MICROSCOPY (7784)•
- RNA
  - LIVER NUCLEI, HIGH MOLECULAR WEIGHT, NUCLEASE (7915)•
  - MESSENGER, LIVER CELL (7916)•
  - SYNTHESIS, INTESTINAL MUCOSA, VITAMIN A DEFICIENCY (7990)
  - TRANSFER, LIVER, CARCINOGEN (7906)•
- SALMONELLOSIS
  - EPIDEMIOLOGY, HEALTHY CARRIERS, FOOD PRODUCTS (8439)
- SARCOMA
  - FIBROBLASTIC, PANCREAS, HISTOLOGY, ETIOLOGY (8230)
  - PRIMARY, STOMACH, ANATOMOPATHOLOGY (8098)
  - SMALL INTESTINE, CARCINOMA (8149)
- SCHISTOSOMIASIS
  - EPIDEMIOLOGY, RHODESIA (8498)
  - KATAYAMA DISEASE, IMMUNOGLOBULIN LEVEL EOSINOPHILIA (8499)
  - NIRIDAZOLE TREATMENT, BRITAIN (8497)
- SECRETIN
  - DUODENAL ASPIRATE, OSMOLALITY, ELECTROLYTE (7987)
- SECRETION
  - BILE, REGULATION, INTESTINAL (7883)•
  - CERULEIN, PANCREAS, BILE (7878)•
  - GASTRIC, ACID, NORMAL VALUES (8009)•
  - GASTRIC, CERULEIN (7859)•
  - GASTRIC, CERULEIN, HISTAMINE, PENTAGASTRIN (7861)•
  - GASTRIC, ENTERECTOMY, BILIARY FISTULA (7873)
  - GASTRIC, GASTROINTESTINAL MUCUS, FUNCTION, COMPOSITION (7803)
  - GASTRIC, GLYCOPROTEIN (7772)•
  - GASTRIC, HISTALOG, CONTRAINDICATIONS, MYOCARDIAL ISCHEMIA (8025)

  - GASTRIC, HISTAMINE, PENTAGASTRIN (7871)
  - GASTRIC, HYDROCHLORIC ACID, PEPSINOGEN (7777)*
  - GASTRIC, MUCOSA, HISTAMINE (7866)*
  - GASTRIC, NICOTINE, CHRONIC (7876)
  - GASTRIC, PANCREATIC, JEJUNAL DISTENSION (7862)*
  - GASTRIC, PEPSIN, SEROTONIN, MUCOSA (7868)
  - GASTRIC ACID, PENTAGASTRIN (7870)
  - GASTRIC ACID, PENTAGASTRIN, HISTAMINE, EXTRA GASTRIC VAGOTOMY (7860)*
  - GASTRIC HYPERSECRETION, PORTACAVAL SHUNT, HORMONE (8370)*
  - GASTRIC MUCOSA, ETHANOL, HEIDENHAIN POUCH (8090)*
  - HISTAMINE, ACID (7865)*
  - PANCREAS, CAERULEIN, ACIDITY, PEPSIN (7877)*
  - PANCREAS, CHOLECYTOKININ, PANCREOZYMIN (7882)
  - PANCREAS, REGULATION, DRUGS (7879)*
  - PANCREATIC, STIMULATION, BILE SALTS (7891)*
- SHOCK
  - EXPERIMENTAL, LIVER, RED CELL (8283)
  - SEPTIC, SURGERY, SMALL INTESTINE (8152)
- SIGMOID DIVERTICULITIS
  - CANCER, DUHAMEL'S OPERATION (8204)
- SPASM
  - ESOPHAGUS (8076)
- SPHINCTER
  - ODDI, CHOLECYSTOGRAPHY, CODEINE (8047)
- SPLEEN
  - EXCISION, LIVER REGENERATION, DOG (7977)
- STENOSIS
  - CELIAC AXIS, VISCERAL ANGIOGRAPHY, SURGERY (8401)
  - CHRONIC, CELIAC AXIS, AORTOGRAPHY, SURGERY (8453)
  - CICATRICIAL, BILE DUCT, SURGERY, COMPLICATIONS (8409)
  - ESOPHAGEAL, PEPTIC ESOPHAGITIS, COLONIC GRAFT, JEJUNAL GRAFT (8066)
  - ESOPHAGUS, STARVATION MANAGEMENT, CATHETERIZATION (8063)
  - EXTRINSIC, CELIAC AXIS, SURGERY, MOTILITY (8452)
  - LIVER ARTERY, ARTERIOGRAPHY, SURGERY (8473)
  - NON-ATHEROMATOUS, CELIAC ARTERY, SURGERY, PHYSIOPATHOLOGY (8427)
  - PYLORUS, HYPERTROPHY, INFANTS (8106)
- STEROID
  - GLUCOCORTICOID, SURFACE MEMBRANE, HEPATOMA CELL (8264)*
- STOMACH
  - ABSORPTION, POUCH, SURFACTANT (7843)
  - ANTRECTOMY, FUNDIC MUCOAS (8089)*
  - ANTRUM, TUMOR, ULCER, PATHOLOGY (8096)
  - BACTERIAL HISTIDINE DECARBOXYLASE (7992)*
  - CANCER, CARCINOMA, BENIGN ULCER, DIRECT VISION BIOPSY (8037)
  - CANCER, 5-FLUOROURACIL, PERIPHERAL BLOOD MORPHOLOGY (8125)
  - CANCER, INCIDENCE, SURGERY, MORTALITY RATE (8110)
  - CARCINOMA, ENZYMES, PROGNOSIS (8087)*
  - CARCINOMA, HISTOPATHOLOGY, SECRETION (8086)*
  - CHRONIC GASTRITIS, RESORT TREATMENT, SOUTHERN CRIMEA (8092)
  - DILATATION, DIAGNOSIS, PREVENTIVE MEASURES (8046)
  - DUODENUM, PEPTIC ULCER PERFORATION, ISLAND COMMUNITY (8139)
  - DUODENUM, ULCER, GASTRIC STASIS, SURGERY (8136)
  - EPITHELIUM, MUCUS, METAPLASIA, INFANT (8069)
  - EXFOLIATIVE CYTOLOGY, COMPRESSED AIR APPARATUS, DIAGNOSTIC (8006)*
  - EXTRAGASTRIC VAGOTOMY, SECRETION (7860)*
  - FUNDUS GRAFT, SPONTANEOUS ESOPHAGEAL RUPTURE, THALIS OPERATION (8084)
  - GASTRECTOMY, GLYCOREGULATION (8101)
  - GASTRECTOMY, METABOLISM, IRON ABSORPTION (8100)
  - GASTRIC EMPTYING, ALCOHOL (7850)*
  - GASTRIC SECRETION, CERULEIN (7859)*
  - GASTRIC SECRETION, GLYCOPROTEIN (7772)*
  - GASTRIC SECRETION, NICOTINE, CHRONIC (7876)
  - GASTROSTOMY, GASTRECTOMY, PYLOROPLASTY (8094)
  - GLANDULAR, TUMORS, HAMSTERS (8088)*
  - HEIDENHAHN POUCH, EHTANOL, SECRETION (8090)*
  - MUCOSA, HISTIDINE DECARBOXYLASE
  - MUCOSA, PEPSIN, ZONES (7864)*
  - MYOGENIC TUMORS, GASTROSCOPY, PATHOLOGY (8118)
  - PEPTIC ULCERATION, STEROIDS (7832)*
  - PRIMARY SARCOMA, ANATOMOPATHOLOGY, DIAGNOSIS (8098)
  - PRIMARY TUMOR, GASTRECTOMY, GASTRIC ULCER, DUODENAL ULCER (8119)
  - RADIOLOGY, OPTIMAL IMAGE (8024)
  - RESECTION, DUCTS, EXTRAHEPATIC, PANCREATIC, SURGERY (8126)
  - SECRETION, ACID, HISTAMINE (7865)*
  - SECRETION, CERULEIN, HISTAMINE (7861)*
  - SECRETION, HYDROCHLORIC ACID, PEPSINOGEN (7777)*
  - SECRETION, ULCEROGENIC, ANTIULCER DRUGS (7863)*
  - SMALL INTESTINE, SYNAPSES (7786)*
  - SMOOTH MUSCLE CELL MITOSIS, MORPHOLOGY, CHICK (7819)
  - SURGERY, ANASTOMOTIC ULCERS, RADIOLOGY (8140)
  - SURGERY, DIARRHEA, INTESTINAL MALABSORPTION (8102)
  - SURGERY, GASTROINTESTINAL HEMORRHAGE, GASTROESOPHAGEAL REFLUX, GASTRIC STUMP CANCER (8095)
  - TUBERCULOSIS (8114)

    ULCER, INDOMETHACIN, RESERPINE, BENZYDAMINE (8132)*
    VILLOUS TUMOR, MORPHOLOGY, MALIGNANCY (8112)
    VOLVULUS, RADIOLOGY, SURGERY (8120)
STRESS
    ULCER, HEMORRHAGIC, GASTRODUODENAL (8135)
STRUCTURE
    MITOCHONDRIA, ABSORPTIVE CELLS, JEJUNUM (7775)*
SUGAR
    STRUCTURE, ACTIVE TRANSPORT, INTESTINE (7834)*
    SUCROSE, ABSORPTION, MONOSACCHARIDE (7850)
SURGERY
    ACUTE PANCREATITIS, EDEMA, NECROSIS (8257)
    ENTERECTOMY, GASTRIC BILIARY FISTULA (7873)
    ESOPHAGEAL PROSTHESIS, MALIGNANT ESOPHAGEAL FISTULA (8071)
    ESOPHAGITIS, TOTAL BYPASS, REVERSED GASTRIC TUBE OPERATION (8082)
    GASTRIC ANTRUM, ATRESIA (8097)
    GASTRIC CARCINOMA, MORPHOLOGY, LIFE EXPECTANCY (8127)
    GASTRIC RESECTION, DUCTS, EXTRAHEPATIC PANCREATIC DUCTS (8126)
    GASTROPEXY, HIATAL HERNIA, DELAYED RESULTS (8061)
    GASTROSTOMY, TEMPORARY (8107)
    GLOVES, POWDER, STARCH GRANULOMATOUS PERITONITIS (8421)*
    HELLER'S OPERATION, IDIOPATHIC MEGAESOPHAGUS, MORTALITY RATE (8062)
    LIVER, ANATOMY (7806)
    PANCREAS, IMPLANTATION (8234)
    PYLOROPLASTY, GASTROSTOMY, GASTRECTOMY (8094)
    STRESS ULCER, HEMORRHAGIC, GASTRODUODENAL (8135)
SYNDROME
    CELIAC, IMMUNOCHEMISTRY, SECRETIONS, MUCOSA (8165)*
    DUMPING, PANCREAS, EXOCRINE FUNCTION, GASTRIC RESECTION, ULCER (8130)
    PEUTZ-JEGHER (8143), (8153)
    REYE'S, LIVER STEATOSIS, ENCEPHALOPATHY, URIC ACID (8304)
    ZIEVE'S, ALCOHOLIC LIVER STEATOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS (8306)
    ZOLLINGER-ELLISON, DIAGNOSIS, BIOASSAY (8054)
    ZOLLINGER-ELLISON, FULMINATING PEPTIC ULCER, ANTICHOLINERGICS, PANCREATIC SURGERY (8479)
    ZOLLINGER-ELLISON, TUMOR, GASTRECTOMY, HYPERCALCEMIA, GASTRIN (8433)
THERAPY
    CHRONIC HEPATITIS, IMMUNOSUPPRESSIVE CYTOSTATICS, D-PENICILLAMINE (8368)
    COLON DISEASE, ATAPULGITE, GUAR GUM (8203)
    GASTRIC ULCER, GASTROPULGITE, GASTRIC PH RADIOMETRY (8134)
    GASTROPULGITE, ESOPHAGEAL DISEASE, GASTRODUODENAL DISEASE (8072)
    GASTROPULGITE, GASTROENTEROLOGY (8467)
    GASTROPULGITE, UPPER GASTROINTESTINAL TRACT DISEASE (8457)
    HETOL, OPISTHORCHOSIS, THAILAND (8496)
    IMMUNOSUPPRESSION, ULCERATIVE COLITIS, CHILDREN (8217)
    LUNG CANCER, CYCLOPHOSPHAN, LIVER FUNCTION (8042)
    TINCTURE OF OPIUM-HMB-PECTIN COMBINATION, NONSPECIFIC DIARRHEA, CHILDREN (8442)
    ULCER, GASTRIC, DUODENAL CARBENOXOLONE (7841)
    VIRAL HEPATITIS, POLYVINYL ALCOHOL PREPARATION (8355)
TOXICITY
    E.COLI ENDOTOXIN, ENHANCEMENT, HEMOGLOBIN, FERRIC AMMONIUM CITRATE (8477)
    METHOTREXATE, GI LESIONS, LEUCOVORIN (8429)
    TRICHLOROETHYLENE, HEPATORENAL DAMAGE, HISTOLOGY (8334)
TOXIN
    SALMONELLA, ENDOTOXIN, TEMPERATURE EFFECTS (8461)
TRANSPLANT
    LIVER, IMMUNOLOGY, PIG, DOG (8285)
    SMALL INTESTINE, EXTRAMURAL SYNAPSES (8147)
TRANSPLANTATION
    LIVER, ISOGENIC, ALLOGENIC (8281)
TRANSPORT
    ACTIVE, INTESTINE, SUGAR, STRUCTURE (7834)*
    CALCIUM, INTESTINE, BRUSH BORDER, VITAMIN D (7836)*
    DUODENAL COLUMNAR CELLS, RADIOAUTOGRAPHY (7794)*
    5-THIO-D-GLUCOSE, SMALL INTESTINE (7831)*
    SUGAR, SODIUM GRADIENT, ENERGY DEPENDENT (7825)*
TRAUMA
    BLUNT, ABDOMINAL (8462)
TRYPSIN
    INHIBITOR, LIVER, PANCREAS (7814)
TUBERCULOSIS
    STOMACH (8114)
TUMOR
    CYSTOADENOMA, PANCREAS, SURGERY, ETIOLOGY (8228)
    HEMANGIOMA, LIVER, THROMBOSIS, ORAL CONTRACEPTIVE (8433)
    HEPATOBLASTOMA, CHEMOTHERAPY, RADIOTHERAPY, LOBECTOMY, INFANT (8308)
    PANCREAS, DIAGNOSIS, PAIN (8242)
    PANCREAS, DIAGNOSIS, ULTRA SOUND (8053)
    PANCREAS, SURGERY, DIFFERENTIATION (8240)
    SECONDARY, LIVER, HEPATIC ARTERY, 5-FLUOROURACIL (8301)
    STOMACH, GASTRECTOMY, DUODENAL ULCER,

GASTRIC ULCER (8119)
- STOMACH, GLANDULAR, FIBROSARCOMA, ADENOCARCINOMA (8088)*
- URETHAN, HEPATECTOMY (8268)*
- VILLOUS, STOMACH, MORPHOLOGY, MALIGNANCY (8112)

TYPHOID FEVER
- CARRIERS, VI HEMAGGLUTINATION TEST (8019)

ULCER
- ANASTOMOTIC, GASTRIC SURGERY, SYMPTOMATOLOGY, RADIOLOGY (8140)
- DUODENUM, SURGERY, COMPLICATIONS (8111)
- DUODENUM, VAGOTOMY, ANTRECTOMY, PYLOROPLASTY (8093)
- GASTRIC, DUODENAL, CARBENOXOLONE (7841)
- GASTRIC, DUODENAL, GASTRIC STASIS, SURGERY (8136)
- GASTRIC, GASTROPULGITE THERAPY, GASTRIC PH-RADIOMETRY (8134)
- GASTRIC, INDUCED, INDOMETHACIN (8132)*
- GASTRIC, SUBTOTAL GASTRECTOMY, INTESTINAL TRANSIT, DIET (8099)
- GASTRIC ANTRUM, TUMOR, PATHOLOGY (8096)
- HEMORRHAGIC, GASTRODUODENAL, STRESS, SURGERY (8135)
- MULTIPLE, GASTRIC, LEUKEMIA, GASTROSCOPY (8138)
- PEPTIC, GASTRIC, DUODENAL, X-RAY, PYRILENE TEST (8043)
- PEPTIC, GASTRIC MUCOSAL SUSCEPTIBILITY STEROIDS (7832)*
- PEPTIC, PERFORATION, MORTALITY, ISLAND COMMUNITY (8139)
- PEPTIC, PYLOROPLASTY, VAGOTOMY, CHILDREN (8117)
- RECURRENT, X-RAY, VAGOTOMY, PYLOROPLASTY (8141)
- STOMACH, DUODENUM, ZINC METABOLISM (8133)
- STRESS, GASTRODUODENAL, PATHOGENESIS, MUCOSAL BARRIER (8137)

ULCERATIVE COLITIS
- HISTOLOGY, IMMUNOLOGY, IMMUNOSUPPRESSIVE THERAPY (8218)
- THERAPY, IMMUNOSUPPRESSION, CHILDREN (8217)

ULTRASTRUCTURE
- EXOCRINE PANCREAS, HIBERNATING FROG (7793)*
- HEPATECTOMY, DIET, RNA (7773)*
- HISTOPATHOLOGY, LIVER, TRANSPLANT (8281)
- LIVER, GLUCOSE, ETHIONINE (8330)
- LIVER, GOLGI, ENZYMES (7798)*
- LIVER, HUMAN, GANGLIOSIDOSIS (8289)
- LIVER, PEROXIDASE, KUPFFER CELLS (7792)*
- LIVER, PYRROLIZIDINE, MEGALOCYTES (8322)*
- LIVER INJURY, ETHIONINE, POLYRIBOSOME, NUCLEOLUS (8317)*
- LIVER SINUSOIDS, ENDOTHELIAL LINING (7991)*
- SURFACE MEMBRANE, HAPATOMA CELL, GLUCOCORTICOIDS (8269)*

VAGOTOMY
- COMPLICATIONS, DIARRHEA, DYSPEPSIA (8103)
- ULCER, RECURRENT (8141)

VIRUS
- HUMAN FETAL INTESTINE, CYTOPATHIC CHANGES (7984)*
- MULTIPLICATION, ORGAN CULTURE, SMALL INTESTINE (7998)

VOLVULUS
- CECUM, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (8193)
- STOMACH, RADIOLOGY, SURGERY (8120)

LIBRARY U. OF I. URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

LIBRARY U. OF I. URBANA-CHAMPAIGN

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

16.305
A

Vet Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY

ABSTRACTS
AND
CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

THE LIBRARY OF THE
FEB 25 1971
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN
UC

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

DECEMBER 1970
VOLUME 5, NO. 12
8502–9292

LIBRARY U. OF I. URBANA-CHAMPAIGN

olume 5, No. 12

Abstract and Citation Nos. 8502-9292

GASTROENTEROLOGY ABSTRACTS AND CITATIONS

A monthly publication of the

National Institute of Arthritis and Metabolic Diseases

Editor

O. Dhodanand Kowlessar, M.D., Philadelphia

Associate Editor

Franz Goldstein, M.D., Philadelphia

Editorial Advisors

Thomas P. Almy, M.D., Hanover, New Hampshire
Frank P. Brooks, M.D., Philadelphia
Wilifrid I. Card, M.D., Glasgow
Charles F. Code, M.D., Rochester, Minnesota
Morton I. Grossman, M.D., Los Angeles
J. N. Hunt, M.D., London
Franz J. Ingelfinger, M.D., Boston
Joseph B. Kirsner, M.D., Chicago
Leonard Laster, M.D., Bethesda, Maryland
Milton J. Matzner, M.D., Brooklyn, New York
Marvin H. Sleisenger, M.D., San Francisco
Borje Uvnas, M.D., Stockholm

Literature Selected, Abstracted, and Indexed

by

The Franklin Institute Research Laboratories
Science Information Services
Biomedical Section

Dante S. LaRocca, Project Manager

Contract Number NIH-70-2040
with the PHS, USDHEW

PREFACE

GASTROENTEROLOGY ABSTRACTS and CITATIONS is a publication of the National Institute of Arthritis and Metaboli Diseases. This specialized information medium has been initiated to fill an existing great need in the field of gastroenterology and to assist the Institute in meeting its obligations to foster and support laboratory and clinical research into the nature, causes, and therapy of diseases of the gastrointestinal tract. Publication of GASTROENTEROLOGY ABSTRACTS and CITATIONS makes available citations of all current papers relevant to this field from medical journals published throughout the world. Approximately one-third of the citations dealing with the major aspects of gastroenterology have accompanying abstracts.

The issuing of GASTROENTEROLOGY ABSTRACTS and CITATIONS under the auspices of the National Institute of Arthritis and Metabolic Diseases will provide a much needed current awareness tool to scientists and will facilitate greater integration of research and clinical efforts in this field. The number and great diversit of publications in the area of gastroenterology makes it imperative that an appropriate service be available investigators and practitioners so that they may be apprised of progress with a minimum of delay. Our aim is to provide the readers with a readily systematized compilation of current published work. The publication will provide the greatest usefulness if these interested investigators will contribute their ideas and commen for consideration whenever possible.

GASTROENTEROLOGY ABSTRACTS and CITATIONS is published monthly and includes citations and abstracts from the biomedical world literature as they are currently received. In addition, yearly cumulated subject and autho indexes are published.

This publication is available free to National Institutes of Health grantees and contractors working in the field of gastroenterology and libraries of medical schools. Requests from these qualified individuals to receive free copies of this publication must include their grant or contract number and the title of their project. These requests as well as address changes and other communications should be addressed to:

Scientific Communications Office
Gastroenterology Abstracts and Citations
National Institute of Arthritis and Metabolic Diseases
National Institutes of Health
Bethesda, Maryland 20014

Other individuals and libraries may receive this publication by subscribing *directly* to the Superintendent o Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment required in advance, and check or money order should be made payable to the Superintendent of Documents.

CONTENTS

	Cross Reference Abbreviations	Abstracts, Citations	Page
PRE-CLINICAL SCIENCES			
Morphology, Cellular Structure and Histochemistry	(P:Morph)	8502-8547	877
Absorption—Excretion—Transport	(P:Absorp)	8548-8572	882
Motility	(P:Motil)	8573-8579	886
Secretion and Metabolism	(P:Secr)		
Stomach	(P:Secr:Stom)	8580-8596	887
Pancreas	(P:Secr:Panc)	8597-8605	889
Hepatobiliary Tract	(P:Secr:Hepatobil)	8606-8684	890
Intestine	(P:Secr:Int)	8685-8694	901
General	(P:Gen)	8695-8702	903
DIAGNOSTIC PROCEDURES	(Diagproc)	8703-8790	905
GASTROINTESTINAL DISEASES			
Esophagus	(D:Esoph)	8791-8826	911
Stomach and Duodenum	(D:Stomduo)	8827-8878	913
Peptic Ulcers	(D:Stomduo:Peptulc)	8879-8895	916
Small Intestine	(D:S.Intest)	8896-8920	917
Regional Enteritis	(D:S.Intest:Regent)	8921-8927	919
Malabsorption	(D:S.Intest:Malabs)	8928-8939	920
Large Intestine	(D:L.Intest)	8940-8986	921
Ulcerative Colitis	(D:L.Intest:Ulccol)	8987-8999	923
Granulomatous Colitis	(D:L.Intest:Grancol)	9000-9001	925
Pancreas	(D:Pancreas)	9002-9014	925
Pancreatitis	(D:Pancreas:Pancreat)	9015-9037	926
Liver and Biliary Tract	(D:Livbil)	9038-9092	928
Acute Nonviral Hepatitis and Hepatic Injury	(D:Livbil:A.Nonv.Hep)	9093-9113	932
Acute Viral Hepatitis	(D:Livbil:A.V.Hep)	9114-9142	933
Chronic Hepatitis	(D:Livbil:C.Hep)	9143-9149	935
Cirrhosis	(D:Livbil:Cirrh)	9150-9169	936
Gallbladder and Biliary Tract Diseases	(D:Livbil:Gallb)	9170-9199	937
General	(D:Gen)	9200-9258	939
Parasitology	(D:Gen:Parasit)	9259-9292	943
AUTHOR INDEX			
SUBJECT INDEX			

Use of Funds for Printing this publication
approved by the Director of the Bureau of
the Budget on October 7, 1968.

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402. Subscription price per year in the United States, Canada, and Mexico, $16.00; foreign, $4.00 additional; and $1.25 for a single copy. Payment is required in advance, and check or money order should be made payable to the Superintendent of Documents.

NOTE

Journal names are abbreviated according to the list of abbreviations used by *Index Medicus*. F journals not covered by *Index Medicus*, the abbreviations (with some modifications) found in *World Medica Periodicals*, 3rd Edition, are used.

LANGUAGE ABBREVIATIONS

Afr.	Afrikaans
Ar.	Arabic
Bul.	Bulgarian
Ch.	Chinese
Cz.	Czech
Dan.	Danish
Dut.	Dutch
E.	English
Eston.	Estonian
Fin.	Finnish
Fl.	Flemish
Fr.	French
Ger.	German
Gr.	Greek
Heb.	Hebrew
Hun.	Hungarian
Ic.	Icelandic
In.	Indonesian

It.	Italian
Jap.	Japanese
Kor.	Korean
Latv.	Latvian
Lith.	Lithuanian
Nor.	Norwegian
Pol.	Polish
Por.	Portuguese
Rum.	Rumanian
Rus.	Russian
Ser.	Serbo-Croatian
Sl.	Slovak
Sp.	Spanish
Sw.	Swedish
Th.	Thai
Turk.	Turkish
Uk.	Ukrainian
Viet.	Vietnamese

ABBREVIATIONS USED IN ABSTRACTS

ACTH	adrenocorticotropic hormone
ADP	adenosine diphosphate
AMP	adenosine monophosphate
ATP	adenosine triphosphate
BSP	sulfobromophthalein
C	degrees centigrade
cm	centimeter(s)
CNS	central nervous system
cpm	counts per minute
DNA	deoxyribonucleic acid
e.g.	for example
g	gram(s)
μg	microgram(s)
hr	hour(s)
i.m.	intramuscular
i.p.	intraperitoneal
IU	international unit(s)
i.v.	intravenous
kg	kilogram(s)
LD_{50}	median lethal dose(s)
LDH	lactic acid dehydrogenase
m	meter(s)
M	molar
mEq	milliequivalent(s)
mM	millimolar
μM	micromolar

mC,μC	milli-,microcurie(s)
mg	milligram(s)
min	minute(s)
ml	milliliter(s)
mm	millimeter(s)
MTD	maximum tolerated dose
ng	nanogram (10^{-9})
pg	picogram (10^{-12})
p.o.	orally
ppm	parts per million
r	Roentgen
RBC	red blood cells (erythrocytes), red blood count
resp.	respectively
Rev.	review (only in citations)
RNA	ribonucleic acid
s.c.	subcutaneous
sec	second(s)
SGOT	serum glutamic-oxalacetic transamin
SGPT	serum glutamic-pyruvic transaminase
U	unit(s)
UV	ultraviolet
WBC	white blood cells (leukocytes), white blood count
yr	year(s)

PRE-CLINICAL SCIENCES

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

8502 X-RAY DIFFRACTION AND ELECTRON-MICROSCOPE STUDIES OF THE BRUSH BORDER MEMBRANE OF GUINEA PIG INTESTINAL EPITHELIAL CELLS. *(E.)* Limbrick, A. R. (Duke U. Med. Ctr., Durham, N.C.) and J. B. Finean. *J Cell Sci* 7(2):373-386, 1970.

Low-angle X-ray diffraction and electron microscopy indicated that brush border membranes isolated from guinea pig intestinal epithelial cells condensed together to give a repeating unit of about 30 nm with 2 unit membrane features separated by a band of high density. Electron micrographs allowed identification of the high density band with the external surface of the microvillus membrane, and a probable model for the electron density profile of the double membrane repeating unit was constructed. The electron density profile of hydrated membranes suggested a lamellar membrane structure in which the low density region represented mainly hydrocarbon chains of a lipid layer; the peaks of the profile included lipid ionic end groups, associated metallic ions and nonlipid components. The presence of water in the membranes seems to be necessary for the maintenance of their integrity since any reduction of water below 30% induced changes in the diffraction patterns. No clear indication of any subunit structure within the plane of the membrane was noticed.

8503 THE SUBCELLULAR DISTRIBUTION OF TRIGLYCERIDE SYNTHETASE IN THE INTESTINAL MUCOSA. *(E.)* Schiller, C. M. (U. Texas Southwestern Med. Sch., Dallas), J. S. K. David and J. M. Johnston. *Biochim Biophys Acta* 210(3):489-492, 1970.

The subcellular distributions of sucrase, glucose-6-phosphatase and triglyceride synthetase were measured in microsomal fractions from the brush border of rat and hamster intestinal mucosa, in order to establish the possible contamination of microsomes with the brush border fraction and to assess possible contamination of the brush border fraction with microsomal membranes. The intestinal microsomes were prepared from a 10% intestinal homogenate in 0.1 M Tris-maleate buffer at pH 7.0 and the microsomal fraction was obtained by centrifuging the mitochondrial supernatant from the cell debris fraction at 104,000 x g for 30 min. The enzymes were assayed by previously reported procedures, and the specific activity of each enzyme was expressed in terms of µmoles/min/mg protein of product formed. In the case of the enzymes recovered from the hamster intestinal mucosa, the microsomal fraction employed in the purification of triglyceride synthetase was not contaminated with brush border membranes since less than 1% of the sucrase activity was present in this fraction. The specific activity of sucrase was 0.001 in the supernatant fraction, 0.002 in the microsomal fraction, 0.015 in the mitochondrial fraction, and 0.017 in the whole homogenate. The specific activities of glucose-6-phosphatase and of triglyceride synthetase were highest in the microsomal fraction, with values of 0.092 and 0.045, resp., compared with values of 0.001 and 0.000 in the supernatant fraction, and 0.058 and 0.015 in the mitochondrial fraction. In both rat and hamster intestinal mucosa, activities of glucose-6-phosphatase and triglyceride synthetase isolated in the brush border fraction reflected a contamination with microsomal enzymes.

8504 SUBSTRATE SPECIFICITY OF PANCREATIC LIPASE: INFLUENCE OF THE STRUCTURE OF FATTY ACIDS ON THE REACTIVITY OF ESTERS. *(E.)* Brockerhoff, H. (Fisheries Res Board Canada, Halifax Lab., Nova Scotia). *Biochim Biophys Acta* 212(1):92-101, 1970.

Porcine pancreatic lipase hydrolysis of various esters of monoenoic, polyenoic, methyl-branched, and ω-cyclohexyl or ω-phenyl substituted acids and also esters of aliphatic acids of various chain lengths was studied and compared to oleate esters. Substituents or unsaturation on C_{2-5} led to a relative resistance of the esters against lipase. *Cis* and *trans* unsaturation and the one triple bond tested inhibited lipolysis comparably; introduction of additional but more remote double bonds, as in marine polyenoic acids, introduced no additional resistance. Between unsaturation at $\Delta^{2,3}$ and $\Delta^{5,6}$, the resistance did not depend in a coherent manner on the actual position of the double bond; $\Delta^{2,3}$-acids or $\Delta^{4,5}$-acids may in fact be slightly better substrates than $\Delta^{5,6}$-acids. Compared to a monomethyl-branched acid, multiple branching introduced further resistance. Cyclohexylacetic acid was almost completely resistant but inhibition by ω-phenyl groups disappeared gradually as the chain was lengthened to carbon 6 and the ω-phenyl octanoates had an abnormally high rate of lipolysis, 2-3 times that of oleate. Lipolysis rates of esters of straight-chain saturated acids increased from C_2 to a maximum at C_4, decreased suddenly at C_5 and then increased until around C_9 the rates of the oleates were approached. The resistance of unsaturated or branched acids may be due to steric hindrance during the formation of the activated complex, and this hindrance disappears largely for structures after C_5. In the subtrate-enzyme complex the esters probably are fixed to the enzyme in a two-dimensional orientation along the axis carbonyl carbon-ether oxygen of the carboxyl ester group; fixation and activation of the substrate is probably achieved by hydrogen bonding to both carbonyl and ether oxygen and the leaving alkoxy group is received by a labile hydrogen of the enzyme.

8505 MITOCHONDRIA OF RAT LIVER: VARIATIONS IN GROSS CONFORMATION AND SIZE. *(E.)* Bahr, G. F. (Armed Forces Inst. Path., Washington, D.C.), E. Pihl, W. Engler and U. Mikel. *Cytobiologie* 2(2):163-187, 1970.

In order to study the physical properties of mitochondria, a detailed quantitative analysis of the heterogeneity of rat liver mitochondria was made using electron micrographs. A periodicity of length to width ratios was found suggesting distinct subpopulations. Quantitative and morphologic evidence supported the concept of gross mitochondrial conformational change, by which an oblong mitochondrion curls to a spherical and the reverse. A critical radius governing the mitochondria of comparable locations and functional states seemed to exist, and indicated the momentary optimal distance from the interior to the surface of the organelle through which exchange of metabolites proceeded in a normal mitochondrion. Growing mitochondria remained spherical under this condition (up to a diameter d = 2r); any addition of mass induced lengthening of one axis so that the critical radius was maintained. However, the subpopulation of mitochondria for which the critical radius was the determining factor constituted only a portion of the total mitochondrial population at a given tissue site determining its functionally active role. Mitochondrial conformation may be one of the mechanisms by which actively metabolizing mitochondrial mass is controlled.

8506 THE EFFECT OF CARRIERS ON THE PRODUCTION OF ANTIBODIES TO THE GASTRIN TETRAPEPTIDE. *(E.)* Jaffe, B. M. (Washington U. Sch. Med., St. Louis, Mo.), W. T. Newton and J. E. McGuigan. *Immunochemistry* 7(8):715-725, 1970.

The C-terminal tetrapeptide amide of gastrin was antigenic only when conjugated to serum protein carriers; conjugates with poly-L-lysine and poly-L-glutamic acid evoked no antibodies to the tetrapeptide moiety. The immunoreactivity of four gastrin tetrapeptide congeners (gastrin tetrapeptide, gastrin pentapeptide, human gastrin, and cholecystokinin-pancreozymin) was evaluated by examining the ability of equimolar quantities of the congeners to inhibit the reaction between anti-tetrapeptide antibody and either ^{125}I-gastrin or a radioiodinated conjugate of gastrin tetrapeptide and a copolymer of glutamic acid, alanine and tyrosine. When ^{125}I-gastrin was the label, gastrin was the most effective inhibitor and tetrapeptide the least effective; with the ^{125}I-copolymer-tetrapeptide conjugate, the most effective inhibitor was the tetrapeptide sequence. For each labeled detector a defined series of parallel inhibition plots were noted (in which the homologous inhibitor was the most effective) which could be extrapolated to total inhibition.

8507 DISTRIBUTION OF RENNIN IN THE CALF STOMACH: IMMUNOHISTOCHEMICAL STUDY. *(E.)* Nagakubo, I. (Sch. Med. Keio U., Tokyo, Japan), K. Takano, T. Suzuki and K. Yasuda. *Okajima Folia Anat Jap* 47(2-3):151-157, 1970.

Precise localization of rennin in the calf stomach was accomplished using immunofluorescence. Rennin was not found in the first (rumen), second (reticulum), or third (omasum) stomachs, but was localized in the gastric gland of the fourth (abomasum) stomach. Rennin was distributed throughout the gland with the material concentrated in the supranuclear and apical cytoplasm of the cells at the bottom of the gland and in the body and neck of the gland. Towards the surface epithelium, the cells with intense fluorescence increased in number and most of the tall columnar epithelial cells contained large amounts of rennin. The presence of rennin was not confirmed in the lumen of the gastric gland or in the foveolae of the surface epithelium.

8508 INTESTINAL MUCOSAL LYMPHATIC PERMEABILITY: AN ELECTRON MICROSCOPIC STUDY OF ENDOTHELIAL VESICLES AND CELL JUNCTIONS. *(E.)* Dobbins, W. O., III (VA Hosp., Washington, D. C.) and E. L. Rollins. *J Ultrastruct Res* 33(1-2):29-59, 1970.

The route of passage of water-soluble macromolecules across lacteals of intestinal villi of mice and guinea pigs was determined by using peroxidase, ferritin, and chylomicrons as tracers; saline-injected animals served as control. Lacteal junctions were classified as close junctions, tight junctions, open junctions, and indeterminate junctions. In lacteals there were 10 close junctions, 89 tight junctions, 6 open junctions, and 149 indeterminate junctions. Ferritin and peroxidase were frequently identified within pinocytotic vesicles. Peroxidase (diameter about 50 Å) was seen within close junctions but did not appear to penetrate tight junctions, and ferritin (diameter about 110 Å) did not penetrate either tight or close junctions. Chylomicrons (diameter about 2000 Å) did not penetrate close or tight junctions, were occasionally seen in large vesicles, and were often identified within overlapping endothelial cell processes. The major route of transport of these substances across lacteals of the intestinal mucosa is apparently vesicular rather than through endothelial cell junctions.

8509 THE EFFECT OF GLUCAGON ON THE STATE OF LYSOSOMAL ENZYMES IN ISOLATED PERFUSED RAT LIVER. *(E.)* Guder, W. (Munich Hosp., Germany), J. Frohlich, C. Patzelt and O. Wieland. *FEBS Letters* 10(4):215-218, 1970.

The ketogenic and ureogenic action of glucagon in the isolated perfused rat liver was correlated to the formation of autophagic vacuoles, and was measured by determination of lysosomal enzymes under isotonic conditions (free activity) and after disruption of lysosomes (total activity) in livers from 24-hr fasted rats. Rat livers were preperfused with wasted human red cells in a buffered albumin solution and then were treated with a single dose of 200 mg of glucagon. Lysosomal triglyceride lipase was measured by determination of glycerol release from triolein at pH 6.0, and N-acetyl-β,D-glucosaminidase was tested by a previously reported method. Free activity of the enzymes N-acetyl-β, D-glucosaminidase and triglyceride lipase increased after glucagon, but total activity (which was measured at the end of the perfusion) showed no difference between the control and the glucagon-treated livers. The free activity of both enzymes rapidly increased by 40% of the initial value within 15 min after addition of glucagon to the perfusion system. Glucagon produced rapid increase in urea production from a control value of 0.159 µmoles/g/min to 0.275, and in ketogenesis from a control value of 0.384 µmoles/g/min to 0.525.

8510 PROLIFERATION KINETICS IN EPITHELIUM OF GUINEA-PIG COLON: I. VARIATIONS DEPENDING ON CRYPT LENGTH AND ITS LOCALIZATION. *(E.)*

Sawicki, W. (Sch. Med. Warsaw, Poland) and J. Rowinski. *Cell Tissue Kinet* 3(4):375-383, 1970.

The kinetics of proliferation of crypts of guinea pig colon were studied autoradiographically with ^{3}H-thymidine in crypts situated in the top and the basal parts of the fold, and in the lower and in the upper parts of an individual crypt. Crypts situated in the top region of folds were significantly longer than those situated in the basal region, and the duration of cell cycle and its phases were similar in the crypts of the two regions examined. The rate of ^{3}H-thymidine uptake was higher in the middle than in the initial and final parts of the S phase, and its pattern was the same for the crypts of the two regions of the fold as well as for the parts of the individual crypt. The proliferating pool size was larger in crypts situated in the top than in the basal region of the fold, and larger in the lower parts of crypts from each region than in the upper parts. Control of cellular proliferation in the crypt epithelium is considered to operate separately at the level of the individual crypt and at the level of a group of crypts situated in a given region of the colonic wall.

8511 ULTRASTRUCTURAL CHANGES AFTER PERFUSION OF ISOLATED RAT LIVER WITH A FLUOROCARBON EMULSION AS A SUBSTITUTE FOR ERYTHROCYTES. *(E.)* Ruigrok, T. J. C. (Biol. Ultrastruct. Res. Unit, St. U. Utrecht, Netherlands) and P. F. Elbers. *Cytobiologie* 2(2):315-325, 1970.

Ultrastructural changes in rat liver were studied after perfusion with emulsions of a fluorocarbon FC-75 in Tyrode solution, which was used as a substitute for erythrocytes because of its high capacity for oxygen and carbon dioxide solvation. With bovine serum albumin as the emulsifying agent massive phagocytosis of emulsion droplets could be observed in the Kupffer cells, presumably due to the fact that the droplets were covered by a foreign protein. With the nonionic detergent F 68 instead of albumin the rate of flow of the emulsion through the liver decreased rapidly. The micrographs show an obstruction of the sinusoids because the endothelial cells loose their attachment with the hepatocytes at several places. By using the detergent as emulsifier and bovine albumin as an oncotic agent the above effects were avoided. After 60 min of perfusion with this medium, flow rate and bile production were still normal, and at that time only a part of the Kupffer cells contained emulsion droplets; no ultrastructural alterations attributable to hypoxia could be found.

8512 EFFECTS OF AMINOACRIDINES AND RELATED COMPOUNDS ON THE CONFORMATION OF RAT LIVER RIBOSOMES. *(E.)* Hultin, T. (Wenner-Gren Inst., Stockholm, Sweden). *Chem Biol Interaction* 2(2):61-77, 1970.

Inhibition of rat liver ribosomal peptide bond formation was studied by inducing a conformational reaction with aminoacridines and a number of other positively charged planar heterocyclic compounds (atebrin, toluidine blue, harmine, pyronine) with intercalating activity. The reaction involved a specific alteration in the pattern of structural shielding of ribosomal proteins depending on the flatness and positive charge of the added polycyclic compounds. The conformational effect was strictly temperature dependent (inflection at 25°C with atebrin) and was influenced by the ionic composition of the medium. Reversible selective unmasking of a previously resistant protein ("protein 10") occurred reaching a maximum at KCl concentrations above 0.7 M when intercalating agents were no longer needed for unmasking at 35°C. "Protein 10," located in the larger subunit, thus became accessible to molecular probes (chymotrypsin, thermolysin). Selective unmasking seemed to be related to an intercalative deformation of RNA-helices, while unspecific reactions were probably due to a more general interference of positively charged aromatic compounds with the tertiary RNA structure. Reversibility of induced alterations was correlated with the ability of treated ribosomes to regain their capacity of amino acid incorporation.

8513 UNEQUAL RATES OF DEVELOPMENT OF MITOCHONDRIAL ENZYMES IN RAT SMALL INTESTINAL EPITHELIUM. *(E.)* Hulsmann, W. C. (Rotterdam Med. Sch., Netherlands), W. G. J. Iemhoff, J. W. O. Van Den Berg and A. M. De Pijper. *Biochim Biophys Acta* 215(3):553-555, 1970.

Enzyme activities of mitochondria isolated separately from villous and crypt epithelium (method of Harrison and Webster) of rat jejunum were compared. The rates (nmoles substrate oxidized/mg protein/min) of succinate and glycerol-1-phosphate oxidation were greater in the villous mitochondria (223 and 52, resp.) than in the crypt mitochondria (96 and 12, resp.); acetoacetate oxidation was greater in crypt mitochondria (2.5) than in villous mitochondria (0.2), and β-hydroxybutyrate oxidation was similar in both crypt and villous mitochondria (8.7 and 6.1, resp.). Histochemical examination of mitochondrial glycerol-1-phosphate dehydrogenase and succinate dehydrogenase in crypts and villi revealed different rates of development with glycerol-1-phosphate dehydrogenase virtually absent in the crypts and succinate dehydrogenase present in both but with a higher activity in the villi.

8514 THE ULTRASTRUCTURE OF LIVER CELLS IN WOMEN UNDER STEROID THERAPY: I. NORMAL PREGNANCY AND TROPHOBLASTIC GROWTHS. *(E.)* Gonzalez-Angulo, A. (Natl. Med. Ctr., I.M.S.S., Mexico City, Mexico), R. Aznar-Ramos, H. Marquez-Monter, G. Bierzwinsky and J. Martinez-Manautou. *Acta Endocr* 65(2):193-206, 1970.

The ultrastructure of liver cells was studied in 5 healthy women during the last trimester when endogenous steroids are at their highest levels and in 7 women bearing trophoblastic growths in whom steroids are at their lowest levels but higher than in non-pregnant women. Liver biopsies from pregnant women revealed elongation, gigantism and lamellar osmiophilic matrical inclusions in approximately 10% of the population of mitochondria per cell examined. Liver biopsies of 6 women with hydatidiform mole and from 1 woman with choriocarcinoma revealed mild focal dilation and vesiculation of both rough and smooth endoplasmic reticulum; mitochondrial modifications were present and included gigantism, pleomorphism and also lamellar osmiophilic inclusions in 10-20% of the cases. In 1 case of hydatidiform mole, this change was observed in more than 60% of mitochondria examined. Variations in mitochondrial morphology and changes seen in the endoplasmic reticulum should not be regarded as pathological. Findings are seemingly an exaggeration of the physiological changes induced by an increased metabolic demand during pregnancy or else to a more direct effect of steroid hormones on liver cell organelles.

8515 THE ULTRASTRUCTURE OF LIVER CELLS IN WOMEN UNDER STEROID THERAPY: II. CONTRACEPTIVE THERAPY. *(E.)* Martinez-Manautou, J. (Natl. Med. Ctr., I.M.S.S., Mexico City, Mexico), R. Aznar-Ramos, J. Bautista-O'Farrill and A. Gonzalez-Angulo. *Acta Endocr* 65(2):207-211, 1970.

An electron microscope study was performed on liver biopsies of 14 young healthy women under different types of contraceptive therapy. Six women received an estrogen-free progestogen (chlormadinone acetate) daily in microdoses for 38-44 months, four women were given a combination of estrogen and progestogens (mestranol and norethindrone, ethinyl estradiol and norethindrone, mestranol and lynestrenol) for 63-104 months, and 4 were given sequential therapy (mestranol and chlormadinone, ethinyl estradiol and chlormadinone) for 1-67 months. Eight women had biopsies for control purposes. Moderate dilation and vesiculation of rough and smooth surfaced endoplasmic reticulum was observed in women receiving all types of therapy but more marked vesiculation was noted in women under sequential medication. Elongation of mitochondria with crystalloid inclusions in their matrices were found in 5-10% of whole population of mitochondria per cell in chlormadinone-treated women; similar changes were seen in 20-40% of the women treated with combined and sequential therapy. Mitochondrial modification in this last group was found in more than 60% of the cell population in one case. Fatty vacuolation was observed and was more marked with combined and sequential treatment. Mitochondrial changes are seemingly totally reversible and are thought to represent a response of the liver parenchymal cell in presence of steroid hormones.

8516 DEVELOPMENT OF THE UPPER ABDOMINAL MESENTERY IN MAN: A NEW POINT OF VIEW. *(Ger.)* Liebermann-Meffert, D. (Anat. Inst. U. Freiburg, Germany). *Acta Anat* 75(3):373-395, 1970.

8517 QUANTITATIVE DISTRIBUTION OF PANETH CELLS IN HAMSTER AND RABBIT INTESTINE. *(Ger.)* Oestreich, B. (Anat. Inst. Friederich Schiller U., Jena, Germany), I. Strassburger, W. Linss and G. Geyer. *Jahrbuch Morph Mikroskop Anat* 82(2):236-242, 1970.

8518 INTERACTIONS BETWEEN LYSOSOMES AND OTHER CELL CONSTITUENTS: THE ACTION OF LYSOSOMAL HYDROLASES ON ISOLATED RAT LIVER NUCLEI. *(It.)* Rita, G. A. (Inst. Path. Gen., U. Turin, Italy) and F. M. Baccino. *Boll Soc Ital Biol Sper* 46(7):337-341, 1970

8519 LONG TERM CULTURE OF ADULT HUMAN LIVER TISSUE. *(Fr.)* Le Guilly, Y. (Hosp. Pontchaillon, Rennes, France), P. Lenoir, M. Bourel, R. Poupon and A. Guillouzo. *Path Biol* 18(15-18): 733-741, 1970.

8520 SERUM AND INFLAMMATORY INTERACTIONS IN THE DEVELOPMENT OF RAT LIVER POLYPLOIDY. *(Fr.)* Nadal, C. (no affil). *C R Acad Sci* 271(4): 400-403, 1970.

8521 HISTOCHEMICAL AND AUTORADIOGRAPHICAL DETECTION OF FREE INORGANIC PHOSPHATE IN LIVER PARENCHYMAL CELLS. *(Ger.)* Halbhuber, K. J. (Anat. Inst. Friedrich Schiller U., Jena, Germany), J. Stibenz and G. Geyer. *Acta Histochem* 37(1):154-161, 1970.

8522 EXPERIMENTAL STUDY ON THE APPEARANCE OF THE DARK CELL IN THE CHICK LIVER: LIGHT AND ELECTRON MICROSCOPIC OBSERVATION. *(E.)* Yasuda, K. (Sch. Med., Keio U., Tokyo, Japan), K. Takano and T. Sasaki. *Okajima Folia Anat Jap* 47(2-3): 167-179, 1970.

8523 SATURATED HYDROCARBONS IN HUMAN TISSUE: III. OIL DROPLETS IN THE LIVER AND SPLEEN. *(E.)* Boitnoff, J. K. (Johns Hopkins U. Sch. Med., Baltimore, Md.) and S. Margolis. *Johns Hopkins Med J* 127(2):65-78, 1970.

8524 THE PROTEINS OF THE INNER MEMBRANE OF RAT LIVER MITOCHONDRIA. *(E.)* Tsai, J. H. J. (Max Planck Inst. Exp. Med., Gottingen, Germany), H. Tsai and G. Von Ehrenstein. *FEBS Letters* 10(4): 276-278, 1970.

8525 ASSAY AND ISOLATION OF A CYANIDE-BINDING PROTEIN OF RAT LIVER MICROSOMES. *(E.)* Gaylor, J. L. (Grad. Sch. Nutr., Cornell U., Ithaca, N. Y.), N. J. Moir, H. E. Seifred and C. R. E. Jefcoate. *J Biol Chem* 245(20):5511-5513, 1970.

8526 ACID PHOSPHATASE FROM RAT LIVER: STUDIES ON THE ACTIVE CENTER. *(E.)* Igarashi, M. (Fac. Med. U. Tokyo, Japan), H. Takahashi and N. Tsuyama. *Biochim Biophys Acta* 220(1):85-92, 1970.

8527 PROPERTIES OF ORNITHINE AMINOTRANSFERASE FROM RAT LIVER, KIDNEY, AND SMALL INTESTINE. *(E.)* Sanada, Y. (Sch. Med. Tokushima U., Japan), I. Suemori and N. Katunuma. *Biochim Biophys Acta* 220(1):42-50, 1970.

8528 ACTIVITY AND LOCALIZATION OF LACTATE DEHYDROGENASE IN GASTRIC AND JEJUNAL MUCOSA OF SHEEP DURING ONTOGENESIS. *(Ger.)* Georgieva, R. (Inst. Biol. Path., Sofia, Bulgaria). *Acta Histochem* 37(1):18-33, 1970.

8529 THE PROTEOLYTIC ENZYMES OF THE STOMACH: THEIR PROPERTIES AND ROLE IN PROTEIN HYDROLYSIS. *(Ger.)* Buchs, S. (Child. Clin. U. Basel, Switzerland). *Ergebn Inn Med Kinderheilk* 30:159-233, 1970.

8530 STUDIES ON THE CLINICAL ANATOMY OF THE JAPANESE: THE PROJECTED POSITION OF THE SMALL INTESTINE ON THE FRONT ABDOMINAL WALL. *(Jap.)* Honda, G. (Kumamoto U. Med. Sch., Japan). *J Kumamoto Med Soc* 44(5):363-395, 1970.

8531 STUDIES ON THE CLINICAL ANATOMY OF THE JAPANESE: STUDIES ON THE POSITION OF THE SMALL INTESTINE. *(Jap.)* Honda, G. (Kumamoto U. Med. Sch., Japan). *J Kumamoto Med Soc* 44(5):396-411, 1970.

8532 PURIFICATION AND CHARACTERIZATION OF A 3'-PHOSPHOADENYLYLSULFATE: STEROID SULFOTRANSFERASE FROM HUMAN LIVER. *(Ger.)* Gugler, R. (Inst. Clin. Biochem., U. Bonn, Germany), G. S. Rao and H. Breuer. *Biochim Biophys Acta* 220(1):69-84, 1970.

8533 MEASUREMENT OF ATP: D-GLYCERALDEHYDE-3-PHOSPHOTRANSFERASE ACTIVITY EC 2.7.1.28 (TRIOKINASE). *(Ger.)* Feraudi, M. (Physiol. Chem. Inst. U. Hamburg, Germany). *Enzymol Biol Clin* 11(5):466-478, 1970.

8534 ACID SOLUBLE MOLECULES OF RAT LIVER LABELED IN VIVO WITH ^{14}C-ADENINE. *(Fr.)* Landin, R. M. (Inst. Res. Sci. Cancer, Villejuif, France) and Y. Moule. *Bull Soc Chim Biol* 52(6):621-629, 1970.

8535 HISTOGENESIS AND HISTOLOGY OF HUMAN LIVER: CHANGES OCCURRING FROM FETAL TO ADULT STAGE. *(It.)* Ronzoni, P. (Dept. Topographic Anat. U. Rome, Italy) and G. Aghemo. *Clin Europ* 9(1):115-136, 1970.

8536 HISTOCHEMICAL CHANGES IN LIVERS OF MALE ALBINO RATS AFTER ENDOCRINE ALTERATIONS. *(Ger.)* Marzotko, D. (Anat. Inst. Martin Luter U., Halle, Germany), J. H. Scharf, R. Bohm, H. J. Schulze, K. Liedel and H. Wetzig. *Acta Histochem* 36(2):325-349, 1970.

8537 HISTOLOGICAL INVESTIGATION OF THE GASTRIC MUCOSA IN RHEUMATOID ARTHRITIS PATIENTS. *(Ger.)* Fenyohazi, L. (Szekszard Commun. Hosp., Hungary), L. Walacher and A. Medgyes. *Z Rheumaforsch* 29(5-6):153-161, 1970.

8538 LIVER MORPHOLOGY IN HEALTHY SUBJECTS: RELATIONSHIPS TO CLINICAL CONDITIONS. *(Ger.)* Wolff, G. (Robert Rossle Clin., Berlin, Germany). *Deutsch Gesundh* 25(31):1445-1450, 1970.

8539 ISOLATION OF A SPECIFIC ANTIGEN OF *FASCIOLA HEPATICA*. *(Fr.)* Tailliez, R. (U.E.R. Pharmacy, Lille, France). *Biol Med* 59(3):183-188, 1970.

8540 STUDIES ON α-GLUTAMYL CARBOXYPEPTIDASE: I. THE SOLID PHASE SYNTHESIS OF ANALOGS OF POLYGLUTAMATES OF FOLIC ACID AND THEIR EFFECTS ON HUMAN LIVER α-GLUTAMYL CARBOXYPEPTIDASE. *(E.)* Baugh, C. M. (U. Alabama Sch. Med., Birmingham), J. Stevens and C. L. Krumdieck. *Biochim Biophys Acta* 212(1):116-125, 1970.

8541 EQUILIBRIUM AND RATE CONSTANTS FOR THE REACTION BETWEEN NADH AND HORSE LIVER ALCOHOL DEHYDROGENASES "EE," "ES," AND "SS." *(E.)* Theorell, H. (Nobel Med. Inst., Stockholm, Sweden), A. Akeson, B. Liszka-Kopec and C. De Zalenski. *Arch Biochem Biophys* 139(1):241-247, 1970.

8542 THE FINE STRUCTURAL LOCALIZATION OF ACID PHOSPHATASE IN THE GUT EPITHELIAL CELLS OF THE SLUG, *ARION ATER* (L.). *(E.)* Bowan, I. D. (Dept. Zool., U. Coll. South Wales and Monmouthshire, Cardiff). *Protoplasma* 70(2):247-260, 1970.

8543 EFFECTS OF PILOCARPINE STIMULATION ON RAT PANCREATIC ACINAR CELLS: AN ELECTRON MICROSCOPIC STUDY WITH MORPHOMETRIC ANALYSIS. *(E.)* Nevalainen, T. J. (Dept. Path. Anat., U. Turku, Finland). *Acta Path Microbiol Scand* (suppl. 210): 1-43, 1970.

8544 HISTOCHEMICAL STUDY OF PROTEIN IN EPITHELIAL TISSUE OF THE DIGESTIVE TRACT OF *PIMELODUS MACULATUS* LACEPEDE, 1803. *(E.)* Medeiros, L. O. (Fac. Vetr. Med., U. San Paulo, Brazil), S. Ferri, L. Longhi and T. U. Worsmann. *Acta Histochem* 37(1):113-117, 1970.

MORPHOLOGY, CELLULAR STRUCTURE AND HISTOCHEMISTRY

8545 THE DEMONSTRATION OF IMMUNOGLOBULINS IN PORCINE INTESTINAL TISSUE BY IMMUNOFLUORESCENCE WITH OBSERVATIONS ON THE EFFECT OF FIXATION. *(E.)* Allen, W. D. (Unilever Res. Lab., Bedford, England) and P. Porter. *Immunology* 18(6):799-806, 1970.

8546 STUDIES OF HEPATIC MICROSOMAL ENZYMES, SERUM PROTEINS, AND SERUM CHOLESTEROL AFTER TREATMENT OF RATS WITH L-ASPARAGINASE ALONE OR IN COMBINATION WITH PHENOBARBITAL. *(E.)* Guarino, A. M. (Natl. Cancer Inst., Bethesda, Md.), D. H. Schroeder, R. H. Adamson, J. B. Call and T. E. Gram. *J Natl Cancer Inst* 45(4):783-787, 1970.

8547 MIGRATION OF THE LYMPHOCYTE-LIKE CELLS OF COLONIC EPITHELIUM. *(E.)* Dlouhy, W. (Sch. Med. Warsaw, Poland), J. Rowinski and W. Sawicki. *Bull Acad Pol Sci* 18(6):367-372, 1970.

○ P:Absorp (8551)(8553)(8555)(8572)
○ P:Secr:Stom (8579)
○ P:Secr:Panc (8605)
○ P:Secr:Hepatobil (8611)(8617)(8621)(8622)(8626) (8629)(8631)(8639)(8651)(8653)(8661)(8674) (8676)(8683)
○ P:Secr:Int (8687)(8691)(8692)(8693)(8694)
○ Diagproc (8771)
○ D:Stomduo (8831)(8844)(8846)(8851)
○ D:Stomduo:Peptulc (8891)
○ D:S.Intest:Malabs (8929)(8931)(8937)
○ D:L.Intest (8940)
○ D:L.Intest:Ulccol (8994)
○ D:Pancreas:Pancreat (9035)
○ D:Livbil (9039)(9042)(9059)(9065)(9088)
○ D:Livbil:A.Nonv.Hep (9093)(9094)
○ D:Livbil:Cirrh (9152)
○ D:Livbil:Gallb (9195)

ABSORPTION—EXCRETION—TRANSPORT

8548 ACTIVE TRANSPORT OF SODIUM BY HUMAN COLON *IN VITRO*. *(E.)* Grady, G. F. (Lemeul Shattuck Hosp., Boston, Mass.), R. C. Duhamel and E. W. Moore. *Gastroenterology* 59(4):583-588, 1970.

Unidirectional and net fluxes of sodium were measured isotopically in studies of planar segments of freshly resected human colonic mucosa "short-circuited" according to the technique of Ussing and Zerahn. Potential differences were the greatest when measurement in perfusion apparatus was performed soon after tissue resection (over 20 mV). The potential difference of tissue mounted within 30 min in the perfusion chamber averaged 18 mV (maximum, 23 mV) in contrast to a value of less than 10 mV when mounting required over 45 min. Potential differences declined asymptotically, reaching 50% of initial values approximately 90 min after mounting; decline in potential difference was unaffected by addition of glucose to perfusate. The transmural potential, short-circuit current, and sodium net flux showed parallel increases when antidiuretic hormone was added to the serosal perfusion solution, but application to the mucosa was ineffective. D-Glucose and L-alanine did not potentiate the short-circuit current, and oxygen deprivation or addition of 2,4-dinitrophenol sharply decreased the short-circuit current. Selected tissues with high initial potentials gave short-circuit current values of 3.2 $\mu Eq/hr/cm^2$ of tissue surface while the corresponding net flux of sodium was 4.0, a current to flux ratio of 0.8. Whether discrepancy between net flux and short-circuit current was methodological or due to asymmetrical ion fluxes other than sodium was not determined since measurements were not simultaneous. However, if allowance is made for the age of the *ex vivo* preparation, active transport of sodium exhibits the appropriate magnitude, direction and metabolite responses to account for most of spontaneous transmural potential and short-circuit current.

8549 GLYCINE TRANSPORT IN RABBIT ILEUM. *(E.)* Peterson, S. C. (Yale U. Sch. Med., New Haven, Conn.), A. M. Goldner and P. F. Curran. *Amer J Physiol* 219(4):1027-1032, 1970.

The transport of glycine from the mucosal solution across the brush border into the epithelial cells was studied in the rabbit ileum, and this unidirectional influx of glycine followed Michaelis-Menten type kinetics and was dependent on the Na^+ concentration in the mucosal solution. The maximal influx was unaffected by changes in Na^+ concentration, but the apparent Michaelis constant increased progressively from 22.7 mM at 140 mM Na^+ to 135 mM Na^+-free conditions. Simultaneous measurements of glycine and Na^+ influxes showed that glycine caused an increase in Na$^+$ influx; the ratio of the increment in the Na$^+$ influx to glycine influx varies from 0.97 at 140 mM Na$^+$ to 0.21 at 10 mM Na$^+$. Alanine, valine, leucine, and phenylalanine inhibited glycine influx competitively, indicating that all of these neutral amino acids enter the cell via the same mechanism. Glycine can also enter the cells to a small extent by a separate mechanism that can be inhibited by proline, but the capacity of this system is only 5% of the major pathway. Glycine influx appears to be consistent with the model originally proposed for alanine entry into the rabbit intestinal mucosal cell, suggesting that this model can be generalized to describe neutral amino acid entry.

8550 EFFECTS OF MONOVALENT CATIONS ON THE SODIUM-ALANINE INTERACTION IN RABBIT ILEUM: IMPLICATION OF ANIONIC GROUPS IN SODIUM BINDING. *(E.)* Frizzell, R. A. (U. Pittsburgh Sch. Med., Pa.) and S. G. Schultz. *J Gen Physiol* 56(4):462-490, 1970.

The interaction between Na$^+$ and alanine influx across the intestinal brush border was studied in isolated segments of distal ileum from New Zealand white rabbits, following increases in the mucosal solution concentrations of hydrogen, potassium and other monovalent cations. A change in the pH of the mucosal solution from pH 4.5 to pH 2.5 markedly inhibited the alanine influx across the brush border in the presence of Na, and this effect was reversed by subsequent exposure of pH 7.4. At pH 4.5, the alanine influx rate was 3.4 μmoles/hr/cm^2 and at pH 2.5, the influx measured 1.1 μmoles/hr/cm^2. In the absence of Na$^+$, alanine influx was not significantly decreased by lowering the pH of the test solution and an increase in the H$^+$ concentration from 0.03 to 3 mM did not affect influx in the absence of Na$^+$, but significantly inhibited influx in the presence of Na$^+$. In the absence of Na$^+$, addition of Li$^+$ (112 mM) enhanced the influx of alanine by 20%, while addition of 112 mM of K$^+$, Rb$^+$, or Ca^{++} produced no significant inhibition of alanine influx. Addition of Hg^{++}, mersalyl, Ag$^+$, Cu^{++} and UO$_2^{++}$ inhibited both Na$^+$-dependent and Na$^+$-independent fractions of alanine influx, while La^{+++} inhibited only the Na$^+$-dependent fraction. Alanine influx was inhibited by addition of 30 mM leucine at pH 2.5 in the presence and in the absence of Na$^+$. Anionic groups having a pKa of approximately 4 are involved in the interaction between Na$^+$ and the alanine-carrier complex.

8551 ABSORPTION OF VITAMIN B$_{12}$ BY THE GUINEA PIG: I. SUBCELLULAR LOCALIZATION OF VITAMIN B$_{12}$ IN THE ILEAL ENTEROCYTE DURING ABSORPTION. *(E.)* Peters, T. J. (Roy. Postgrad. Med. Sch., London, England) and A. V. Hoffbrand. *Brit J Haemat* 19(3):369-382, 1970.

Guinea pig intestinal mucosa was fractionated into subcellular components and vitamin B$_{12}$ was found to be predominantly localized to the inner mitochondrial membranes. In the fasted animal, the concentration of vitamin B$_{12}$ was similar in the jejunum and ileum and approximately 25% of 10 ng of ^{58}Co-cyanocobalamin given p.o. was retained after 7 days, when measured by a whole-body counting technique. In fasted guinea-pigs fed 8-11 ng of ^{57}Co-cyanocobalamin, radioactivity was present in the ileal mucosa within 1 hr of feeding, but no significant hepatic activity was present until 3 hr, confirming the presence of a mucosal delay in vitamin B$_{12}$ absorption, a characteristic finding of intrinsic factor mediated vitamin B$_{12}$ absorption. Seventy percent of the vitamin B$_{12}$ was found in the colon at 3 and 4 hr indicating that approximately 30% of the dose was absorbed. The ileal mucosa showed a highly significant rise in mitochondrial specific activity of labeled vitamin B$_{12}$ during the first 2 hr postfeeding, and subsequently decreased coincidentally with the rise in hepatic activity. The mitochondria may play a hitherto unsuspected role in vitamin B$_{12}$ absorption; since no significant lysosomal radioactivity occurred during the absorptive period, pinocytosis does not seem to be involved in vitamin B$_{12}$ absorption.

8552 RETENTION OF ORALLY ADMINISTERED ^{47}CALCIUM IN MAN UNDER NORMAL AND DISEASED CONDITIONS STUDIED WITH A WHOLE-BODY COUNTER TECHNIQUE. *(E.)* Sjoberg, H. E. (Karolinska Hosp., Stockholm, Sweden). *Acta Med Scand* (suppl. 509):1-28, 1970.

Whole body retention of ^{47}calcium (1-3 μc, p.o.) was measured in healthy subjects and in patients with endocrine and gastrointestinal diseases with and without osteopenia by a whole-body counting technique. Whole body ^{47}calcium retention after 14 days was 29.3% of the given dose for healthy subjects, was lower in patients with regional enteritis and partial resection of the small intestine (14.5%) and rheumatoid arthritis with osteopenia (21.1%), higher in patients after gastrectomy (44.4%), with primary hyperparathyroidism (39.8%), and acromegaly (39.7%), and normal in patients with pancreatic insufficiency (25.3%), Cushing's syndrome (24.4%), and postmenopausal osteoporosis (26.6%). Urinary excretion of ^{47}calcium over the 14 day period varied from 0.4 to 22.5% when the amount of stable calcium carrier was 135 mg, but there was a negative correlation between the carrier amount and the retention of calcium with a higher amount of calcium being retained with a higher carrier dose (675 mg).

8553 SODIUM, POTASSIUM, AND WATER CONTENT OF ISOLATED BULLFROG SMALL INTESTINAL EPITHELIA. *(E.)* Armstrong, W. McD. (Indiana U. Sch. Med., Indianapolis), D. L. Musselman and H. C. Reitzug. *Amer J Physiol* 219(4):1023-1026, 1970.

The content of water, Na$^+$, K$^+$ and volumes of distribution of mannitol-^{3}H and inulin-^{14}C were determined simultaneously in mucosal scrapings from strips of bullfrog small intestine incubated at 26 C in a sodium sulfate medium made isosmotic with mannitol. During the first 30-min immersion, tissue K$^+$ decreased significantly (43 ± 11 μEq/g wet weight), and tissue Na$^+$ increased (60 ± 10 μEq/g wet weight) compared to Na$^+$ and K$^+$ levels in freshly excised tissue (44 ± 7 and 53 ± 11 μEq/g wet weight, resp.). No further change in tissue Na$^+$ or K$^+$ or cell water, computed from inulin space and total tissue water, occurred between 30-min and 3-hr immersion. Mannitol appeared to enter the epithelial cells at a finite rate during immersion; compared with mannitol alone, D-galactose, 3-O-methylglucose, L-alanine, and L-valine caused increased (approximately 15%) cell water content. The latter also caused significant decreases in cell K$^+$ concentration but not in total cell K$^+$ content (except for galactose). D-Glucose and L-sorbose had no significant effect on cell water content or cellular electrolyte levels. D-Fructose caused an increase in cell water and in total cell K$^+$, but had no apparent effect on cell K$^+$ concentration.

8554 INTESTINAL ABSORPTION OF SUGARS, WATER AND SODIUM IN ALLOXAN DIABETIC RATS. *(E.)* Levinson, R. A. (U. Utah Coll. Med., Salt Lake City) and E. Englert, Jr. *Diabetes* 19(10):683-687, 1970.

The absorption of D-galactose, 3-methyl-D-glucose, D-xylose, sodium and water by the jejunum and ileum were studied *in vivo* in normal and alloxan diabetic rats. No consistent increase in sugar absorption was seen in diabetic over normal rats. Diabetic rats absorbed significantly more sodium and water than normals, probably on the basis of diabetes-induced dehydration, but the increased sodium absorption did not stimulate increased sugar absorption. Diabetic rats, as did normal rats, showed increased jejunal over ileal sugar absorption but salt and water absorption were not different between the intestinal segments.

8555 AN ELECTRON MICROSCOPIC LOCALIZATION OF CALCIUM IN THE SMALL INTESTINE OF NORMAL, RACHITIC AND VITAMIN D-TREATED RATS. *(E.)* Sampson, H. W. (Baylor U. Coll. Dent., Dallas, Tex.), J. L. Matthews, J. H. Martin and A. S. Kunin. *Calcif Tissue Res* 5(4):305-316, 1970.

The intracellular localization of calcium in the mucosal lining of the small intestine of normal, rachitic, and vitamin D_2-treated rats was studied using ^{45}Ca-autoradiography, microincineration, and electron microscopy. Small, electron-dense granules and autoradiographic label were seen primarily within microvilli and mitochondria. The granules were sparse in mitochondria from rachitic rats and regularly distributed in normal rat mitochondria. The mitochondria of vitamin D_2-treated rats contained numerous electron dense granules which remained following microincineration. An inverse relation in the amount of granules appearing in the mitochondria and in the microvillus was found. Granules were limited to the microvillus region in the rachitic animals and increased in the mitochondria following treatment with vitamin D_2. Apparently a large amount of calcium is absorbed across the cell membrane and is then bound within the microvillus; vitamin D is probably necessary for mobilizing this bound calcium from the microvilli. Reduction of transcellular transport of calcium in rickets seems to be associated with reduced mitochondrial calcium binding and the inability to accept calcium from the microvilli.

8556 EFFECT OF LYSOLECITHIN, DIGITOXIN AND PHOSPHOLIPASE A UPON THE DOG'S GASTRIC MUCOSAL BARRIER. *(E.)* Davenport, H. W. (Dept. Physiol., U. Michigan, Ann Arbor). *Gastroenterology* 59(4):505-509, 1970.

The effects of lysolecithin, digitonin, and phospholipase A on the gastric mucosa barrier were studied by irrigating separated, vagally denervated pouches of the oxyntic gland area of the dog's stomach first with a test solution of 100 mM HCl and 54 mM NaCl, then with a solution of the agent in 30 mM phosphate buffer, pH 7.4, and again with the acid test solution. Fluxes of Na$^+$ and H$^+$ were measured, and changes over fluxes found in control tests were taken as evidence that the gastric mucosa barrier had been broken. Lysolecithin (20 to 160 mg/100 ml) and digitonin (1.56 to 100 mg/100 ml) broke the barrier; solutions of lyophilized venom of *Naja naja* (50 mg/100 ml) were also effective. Phospholipase A and barrier-breaking activities of *N. naja* venom survived 15 min heating to 100 C at pH 5.5. Lyophilized venom of Russell's viper and human pancreatic juice, both of which had phospholipase A activity, did not break the barrier. The effects of the agents upon the gastric mucosa were similar to their action on erythrocyte membrance.

8557 INVESTIGATIONS ON THE ABSORPTION OF AZULFIDINE. *(E.)* Muller-Wieland, K. (1st Med. Clin. U. Hamburg, Germany), W. Berndt and O. Hirt. *Amer J Proctol* 21(5):337-340, 1970.

The metabolic fate (absorption, metabolism, and excretion) of Azulfidine determined with chromatography, colorimetry, and radioactivity and reported by various authors was reviewed. Azulfidine (p.o.) was excreted largely with the feces but that which was absorbed was degraded into 5-aminosalicylic acid, sulfapyridine, and several other products within 1 hr. Intact Azulfidine and 5-aminosalicylic acid accumulated in connective tissue throughout the body and in peritoneal, pleural, and synovial fluids. Azulfidine also accumulated in the liver and lungs, while sulfapyridine spread diffusely through the organism. Analysis of urine revealed only a small amount of Azulfidine, indicating that it was degraded before its passage through the kidney; since all of the metabolites were not yellow, some escaped colorimetric detection and were investigated using the method of Bratton and Marshall.

8558 INTESTINAL TRANSPORT OF AMINO ACIDS IN A LIZARD DURING HIBERNATION AND ACTIVITY. *(E.)* Qadri, M. U. N. (Dept. Biochem, U. Karachi, West Pakiston), B. K. Zain and M. Zain-Ul-Abedin. *Comp Biochem Physiol* 36(3):569-577, 1970.

The intestinal transport of 8 amino acids (L-leucine, L-lysine, L-glutamamic acid, L-cystine, L-serine, DL-phenylalanine, DL-tryptophan and L-proline) was studied in a hibernating lizard using the everted-sac technique. No difference in the transport in various regions of the intestine was seen. All these amino acids were passively transported during the

tive period and hibernation but the rate of trans-
t was much greater during activity. Active trans-
t of these amino acids also occurred both during
active period and more slowly during hibernation;
tamic acid, however, was not actively transported
ing hibernation.

59 FASTING AND ALLOXAN DIABETES EFFECTS ON INTESTINAL TRANSPORT OF MONOSACCHARIDES.
) Axelrad, A. D. (Dept. Biol., U. Houston, Tex.,),
L. Lawrence and R. L. Hazlewood. *Amer J Physiol*
(4):860-864, 1970.

effects of fasting for 24, 48, and 72 hr and the
ects of alloxan diabetes on the absorption of D-
ucose and 3-O-methylglucopyranoside were studied
rats using an *in vitro* everted intestinal sac
hod. That active transport of monosaccharides
increased by fasting for 24-72 hr was shown by
9% increase in serosal concentration of 3-O-
thylglucopyranoside. Absorption of both mono-
charides was enhanced significantly in both
ort-term (3-8 days) and long-term (90-180 days)
oxan diabetes. The long-term study allows for
istinction to be made of a diabetic effect from
ossible toxic effect of alloxan.

60 VITAMIN D, TISSUE CALCIUM, AND CALCIUM TRANSPORT IN THE *IN VIVO* RAT SMALL INTES-
NE. *(E.)* Urban, E. (Dept. Intern. Med., U. Iowa,
a City) and H. P. Schedl. *Amer J Physiol* 219(4):
-951, 1970.

effect of vitamin D on intestinal tissue con-
t of ^{40}Ca and ^{45}Ca was studied with *in situ* pre-
rations of duodenal and ileal intestinal segments
m deficient and vitamin-repleted rats perfused
rough the lumen with an isotonic solution of 3.4
calcium with isotopic ^{45}Ca as tracer. Vitamin
pletion increased *in vivo* transport and concurrently
creased tissue ^{45}Ca concentration and specific ac-
vity of the mucosal fraction, and there was no vita-
n D effect on the underlying tissues. Vitamin D
d no effect on endogenous ^{40}Ca of unperfused tissue,
r was the ^{40}Ca content of perfused tissue in-
uenced. Calculations of mucosal cell fluxes
owed that vitamin D increased entry and exit
uxes at the basal pole of the cell, but had minimal
fect on entry flux at the luminal face of the cell.
major site of action of vitamin D in the mucosal
ll is at the second or release step in the trans-
rt of calcium from lumen to blood.

61 STUDY OF INTRAABDOMINAL REABSORPTION OF EVANS BLUE LABELED SERUM PROTEINS IN
ALTHY DOGS. *(Ger.)* Herczeg, B. (Med. U. Budapest,
ngary), P. G. Linke and K. Stekker. *Z Exp Chir*
2):134-146, 1970.

8562 FUNCTION AND METABOLISM OF BILE SALTS. *(Fr.)* Borel, G. A. (Med. U. Clin. Lausanne, Switzerland). *Ther Umsch* 27(9):574-579, 1970.

8563 EFFECT OF VARIOUS CARBOHYDRATE COMPOUNDS ON BLOOD CALCIUM LEVELS IN MAN. *(Fr.)* Pansu, D. (Hosp. Charpennes, Villeurbane, France) and M. C. Chapuy. *C R Acad Sci* 270(25):3103-3106, 1970.

8564 VITAMIN ABSORPTION IN THE COLON. *(E.)* Kasper, H. (Med. Clin. Justus Leibig U., Giessen, Germany). *Amer J Proctol* 21(5):341-345, 1970.

8565 CHANGING CONCEPTS OF CHOLESTEROL METABOLISM. *(E.)* Mukherjee, S. P. (Rajendra Med. Coll., Ranchi, India). *Indian Pract* 23(6): 335-341, 1970.

8566 REABSORPTION, DISTRIBUTION AND EXCRETION OF CARDIAC GLYCOSIDES: A COMPARATIVE STUDY. *(Ger.)* Buchtela, K. (Vienna State Hosp., Austria), K. Drexler, A. Fehringer, H. Hackl, M. Konigstein and J. Schlager. *Wien Z Inn Med* 51(5): 227-235, 1970.

8567 ENTERIC COATED MEDICATION. *(Fr.)* Delporte, J. P. (Inst. Pharm. U. Liege, Belgium). *Pharm Acta Helv* 45(9):525-552, 1970.

8568 INTESTINAL ABSORPTION. *(Fr.)* Kernbaum, S. (no affil). *Vie Med* 51(270):1-6, 1970.

8569 LIPID ABSORPTION BY DUODENAL EPITHELIAL CELLS IN CONDITIONS OF EXPOSURE TO Ce^{144} RADIATION. *(Rus.)* Tokin, I. B. (Inst. Radiat Hyg., Leningrad, USSR). *Arkh Anat* 58(6):35-43, 1970.

8570 ENTEROHEPATIC CIRCULATION OF BILE SALTS IN NORMAL AND PATHOLOGICAL CONDITIONS. *(It.)* Myant, N. B. (Hammersmith Hosp., London England). *Recent Progr Med* 48(1):45-63, 1970.

8571 SIMULTANEOUS INTESTINAL ABSORPTION OF CALCIUM AND PHOSPHORUS: EFFECT ON THEIR RETENTION AS DETERMINED BY INTRAVENOUS INFUSION IN PIGS. *(Fr.)* Gueguen, L. (C.N.R.Z., Yvelines, France), P. Besancon and A. Rerat. *C R Acad Sci* 270(22):2678-2681, 1970.

8572 HISTOLOGICAL EVIDENCE OF IRON ACCUMULATION IN THE DUODENAL MUCOSA IN PATIENTS WITH THALASSEMIA. *(It.)* Rizzoni, G. (Pediat Clin, U. Pavia, Italy), P. L. Taverna and G. Astaldi. *Minerva Pediat* 22(5):261-265, 1970.

- P:Morph (8508)
- P:Motil (8577)(8579)
- P:Secr:Hepatobil (8619)
- P:Secr:Int (8688)
- D:Stomduo (8835)
- D:Livbil:Cirrh (9162)
- D:Gen (9201)(9256)(9257)

MOTILITY

8573 COMPARISON OF EFFECTS OF GASTRIN, CHOLECYSTOKININ-PANCREOZYMIN, SECRETIN AND GLUCAGON ON HUMAN STOMACH MUSCLE *IN VITRO*. *(E.)* Phillips, S. F. (Mayo Clin., Rochester, Minn.), A. J. Cameron and W. H. J. Summerskill. *Gastroenterology* 59(4):539-545, 1970.

A constant concentration of one of the gastrointestinal hormones (gastrin, secretin, glucagon or cholecystokinin-pancreozymin) was applied to isolated strips of human gastric muscle obtained from fresh surgical specimens. After bathing in a modified Krebs solution at 37°C under a 2 gm tension for a variable period, the strips taken from the antrum exhibited rhythmic contractions at a mean rate of 3.25 per min, and strips from the corpus of the stomach had a rate of 3.41 per min. Addition of gastrin to the bathing solution caused a 2- to 3-fold increase in the spontaneous contractions without any significant decrease in the resting length of the strip. The lowest effective dose of gastrin for antral strips was 0.01 µg/ml and for corpus strips was 0.1 µg/ml. Cholecystokinin-pancreozymin, at a concentration of 0.1 U per ml, caused increased amplitude in contractions of antral and corpus strips, but a dose of 0.01 U per ml had no significant effect. Secretin, at a dose of 1 U per ml, usually caused the amplitude of contractions to decrease by 50-100% in both antral and corpus strips, and often caused strip relaxation, with a mean increase in strip length of 0.19 mm compared with a mean lengthening of control strips of 0.07 mm. Glucagon, in concentrations of up to 1 µg/ml, had no effect on contraction length or amplitude of gastric antral or corpus strips. None of the hormones tested altered the contraction frequency of antral or corpus strips.

8574 QUANTITATIVE EXPERIMENTS ON THE EFFECT OF ESTROGEN ON THE RESPONSE OF GUINEA PIG ILEUM AND UTERUS TO SPECIFIC ANTIGENS. *(E.)* Ozkaragoz, K. (Fac. Med., Hacettepe U., Ankara, Turkey). *Acta Allerg* 25(4):271-285, 1970.

8575 THE EFFECT OF PRIFINIUM BROMIDE [1,1-DIETHYL-3-(DIPHENYLMETHYLENE)-2-METHYLPYRROLIDIUM BROMIDE] ON THE GASTRIC ANTRAL MOTILITY IN MAN. *(E.)* Kihara, T. (U. Med. Sch. Okayama, Japan), Y. Ishihara and A. Ohta. *Arzneimittelforschung* 20(6):762-767, 1970.

8576 FUNCTIONAL ALTERATIONS OF THE GALLBLADDER FOLLOWING SPHINCTEROTOMY. *(Ger.)* Kantor, E. (2nd Surg. U. Clin. Budapest, Hungary), I. Wachtl Z. Schumann and A. Krasznai. *Z Exp Chir* 3(2):147-15 1970.

8577 MOTILITY AND DIGESTION. *(It.)* La Mura, L. (Milan, Italy) and G. Grillo. *Clin Europ* 9(1):35-42- 1970.

8578 GASTROINTESTINAL MYOGRAPHY IN MAN: FIRST RECORDINGS IN LAPAROSCOPY. *(Fr.)* Paolaggi J. A. (Hosp. Bichat, Paris, France), D. Couturier, C. Roze and C. Debray. *J Med* 141(22-23-24):867-871, 1970.

8579 SEGMENTAL INVERSION OF THE INTESTINE. EXPERIMENTAL STUDY ON RATS. *(Fr.)* Dhedin, G. (Fac. Med. Lille, France) and J. Vanlerenberghe. *Lille Chir* 25(3):119-129, 1970.

- Diagproc (8714)
- D:Esoph (8817)
- D:Stomduo (8828)
- D:Stomduo:Peptulc (8887)
- D:L.Intest (8965)

Stomach

8580 EFFECT OF SECRETIN ON GASTRIC ACID SECRETION IN RESPONSE TO CHOLINERGIC STIMULI. *(E.)* Way, L. W. (Dept. Surg., U. California, San Francisco). *Gastroenterology* 59(4):510-517, 1970.

The effect of secretin on gastric acid secretion after cholinergic stimulation was studied in dogs prepared with antrectomies, gastric fistulas, and Pavlov pouches. A threshold dose of histamine was given by continuous i.v. infusion and insulin, 0.5 or 0.25 U/kg, or 2-deoxyglucose, 0.15 g/kg, was injected after acid secretion had reached a plateau, causing secretory responses similar to those stimulated by insulin or 2-deoxyglucose in animals with intact antrums. Secretin 2 U/kg/hr did not alter acid output in response to insulin or 2-deoxyglucose, but enhanced pepsin secretion after 2-deoxyglucose; secretin did not change an already high pepsin response to insulin. Acid and pepsin secretion stimulated by a continuous i.v. infusion of bethanechol (0.15 mg/kg/hr) was compared with secretory rates when secretin was added to the infusion: secretin depressed acid and increased pepsin output due to bethanechol. In dogs with gastric fistulas, Pavlov pouches, and intact antrums, secretin markedly inhibited acid secretion in response to insulin or 2-deoxyglucose. Direct cholinergic stimulation of parietal cells is apparently not inhibited by secretin, and the inhibition observed in animals with intact antrums was probably due to an antagonism by secretin of vagally released gastrin. Since bethanechol-stimulated acid secretion was inhibited by secretin in antrectomized animals the response to bethanechol may be due to the release of an endogenous humoral gastric stimulant other than antral gastrin as well as a direct effect of bethanechol on parietal cells.

8581 EFFECT OF PROSTAGLANDIN E_1 ON BASAL GASTRIC SECRETION IN MAN. *(Ger.)* Classen, M. (Med. Clin. Polyclin. U. Erlangen-Nuremberg, Germany), H. Koch, P. Deyhle, S. Weidenhiller and L. Cemling. *Klin Wschr* 48(14):876-878, 1970.

The effect of prostaglandin E_1 on gastric secretion was studied in 6 male volunteers, average age 29, who received 300 μg (4-5 μg/kg) of this compound (i.v. in 250 ml solution) 30 min after measurement of basal acid secretion. Inhibition of gastric secretion occurred in 4 subjects within 15 min of start of infusion and reached a maximal inhibition between 16 and 30 min of infusion in 5 subjects. Acid secretion decreased further in 2 subjects and increased in 4 subjects (becoming higher than basal secretion in 3 subjects) following the infusion. Side effects such as headache, muscle pain (proximal to the infusion point) and enhanced pulse beating were tolerable. A moderate fall of blood pressure (below 90 mm Hg, systolic) was noticed in one subject.

8582 IMMUNOCHEMICAL MEASUREMENTS OF ENDOGENOUS GASTRIN RELEASE. *(E.)* McGuigan, J. E. (U. Florida Coll. Med., Gainesville), B. M. Jaffe and W. T. Newton. *Gastroenterology* 59(4):499-504, 1970.

Serum gastrin concentrations in portal, hepatic and peripheral venous sera before and following acetylcholine-provoked release of gastrin from the antral mucosa of dogs were investigated by radioimmunoassay techniques. Polyethylene catheters were inserted in the portal vein, hepatic vein, left femoral vein, and thoracic duct of anesthetized dogs after which the pyloric region of the stomach was irrigated for 10 min with 1% (w/v) acetylcholine solution. Gastrin concentrations were found to increase within 2½ min of initiation of acetylcholine irrigation in the portal vein sera; prompt increases in serum gastrin concentrations were also measured in hepatic and peripheral venous blood. Highest concentrations of gastrin were achieved in portal venous sera; the mean gastrin concentrations in hepatic vein sera were 60% of those in portal sera obtained simultaneously. Increases in peripheral venous gastrin concentrations were observed within 10 min of initiation of acetylcholine irrigation, but thoracic duct lymph gastrin levels were consistently less than peripheral venous serum gastrin levels in response to acetylcholine stimulation. The thoracic duct lymph does not appear to be a major route for conduction of immunoreactive gastrin to the peripheral circulation following acetylcholine stimulation of the stomach.

8583 ASSAY OF TWO PEPSIN FRACTIONS IN HUMAN GASTRIC JUICE BY ALKALI INACTIVATION. *(E.)* Seijffers, M. J. (Hebrew U. Hadassah Hosp., Jerusalem, Israel) and R. Tkatch. *Gastroenterology* 59(4):528-533, 1970.

An alkali inactivation technique for the quantitative determination of the proteolytic activity of alkali-stable and alkali-labile pepsins was described and its results were compared with those obtained by column chromatography assay of the same fractions. Basal and histamine-stimulated samples of gastric juice were collected and subjected to column chromatography for separation of pepsins and proteolytic activity was measured with acid hemoglobin and the alkali-stable pepsin was measured from the residual proteolytic activity after 90 min incubation of the gastric acid sample at 20°C and pH 7.1. The alkali-labile sample was determined from the total proteolytic activity minus the alkali-stable pepsin. The alkali-stable pepsin proteolytic activity obtained by the alkali intervention technique was equivalent to that of Pepsin I (as measured by the column chromatographic fractionations of gastric juice) and the alkali-labile pepsin activity was attributable to the other pepsins present in human gastric juice. Comparison of the ratios of alkali-stable pepsin to alkali-labile pepsin obtained by both alkali—inactivation and chromatography showed no significant difference between the two methods.

8584 PREVENTING EFFECTS OF BENZYL-TRI(β-PROPOXYETHYL)AMMONIUM IODIDE (U-247-51) AND BENZYL-TRI(β-BUTOXYETHYL)AMMONIUM BROMIDE (U-247-73) ON EXPERIMENTAL GASTRIC ULCERS. *(E.)* Matsumoto, T. (Fac. Med., Kyoto U., Japan). *Acta Sch Med Univ Kyoto* 40(3):205-220, 1970.

The effects of benzyl-tri(beta-propoxymethyl)ammonium iodide (U-247-51) and benzyl-tri(beta-butoxyethyl) ammonium bromide (U-247-73) on spontaneous and drug-induced gastric secretion and the formation of experimental gastric ulcers were studied in rats. Both agents depressed gastric secretion volume and acidity, and decreased the incidence of gastric ulcers in Shay rats. Gastric ulcers caused by serotonin and stress stimulation in the rats were also depressed by both agents, but those caused by reserpine were not affected. The gastric ulcers and secretion caused by histamine, eserine, phenylbutazone, caffeine and stress stimulation in Shay rats were also depressed by both test agents. The i.p. administration of both agents decreased the level of catecholamine in the adrenal gland and atria.

8585 THE EFFECT OF ACTH AND CORTISONE ON THE INCORPORATION OF S^{35} (SULFATE) INTO THE MUCOUS CELLS OF THE RAT STOMACH. *(E.)* Kozlowska, K. (Med. Acad. Gdansk, Poland). *Jahrbuch Morph Mikroskop Anat* 82(2):219-228, 1970.

The effect of i.p. injections of cortisone and ACTH on the incorporation of radioactive sulfur (administered as $Na_2S^{35}O_4$) into the neck mucous cells of the gastric fundic glands and the pyloric gland mucous cells was studied in male Wistar rats. One group of rats served as saline-injected controls; a second group received 5 separate injections of 25 mg of cortisone acetate spaced 90 min apart; and the third group of rats received 25 mg of ACTH at the same dosage schedule. Portions of the fundus and pyloric regions of the stomach were excised from all rats under anesthesia, were fixed and stained, and were measured for presence of previously administered radioactive sulfur by autoradiographic methods. Cortisone reduced the incorporation of S^{35} in the mucous fundus gland cell, and increased the incorporation into the mucous cells of the pyloric glands. The average number of silver grains in autoradiographs of mucous cell of fundic glands were 47.09 in control rats and 36.97 in cortisone-treated rats, while these values in mucous cells of the pyloric glands were 33.12 and 58.93, resp. In the ACTH-treated rats, there was a slight increase in the amount of S^{35} incorporated into the mucous cells of the fundic glands (silver grain count=52.36), and a significant increase in the mucous cells of the pyloric glands (silver grain count=50.32).

8586 GASTRIC MUCIN AND MUCINOUS SECRETIONS. *(E.)* Waldron-Edward, D. (Dept. Surg., McGill U., Montreal, Quebec, Canada). *Canad J Surg* 13(4):341-349, 1970.

8587 QUANTITATIVE SECRETION OF JUICE AND ACID IN RATS WITH LIGATED PYLORUS. *(Ger.)* Stockhaus, K. (C. H. Boehringer & Son, Ingelheim, Germany) and H. Wick. *Arzneimittelforschung* 20(6): 856-858, 1970.

8588 THE INFLUENCE OF PYLORIC LIGATION ON THE SECRETION OF GASTRIC JUICE IN RATS. *(Ger.)* Stockhaus, K. (C. H. Boehringer & Son., Ingelheim, Germany) and H. Wick. *Arzneimittelforschung* 20(6): 858-861, 1970.

8589 CARBONIC ANHYDRASE ACTIVITY IN GASTRIC MUCOSA WITH SPECIAL REFERENCE TO HISTOCHEMICAL TECHNIQUE. *(Jap.)* Okuda, Y. (Fac. Med. Yamaguchi U., Japan), M. Shimada, H. Nishimura, T. Harada and T. Sasayama. *Jap Arch Intern Med* 17(3): 63-69, 1970.

8590 THE EFFECT OF METCLOPRAMIDE ON GASTRIC SECRETION AND CHEMISTRY. *(It.)* Benacchio L. (Eretenia Nursing Home, Vicenza, Italy). *Minerv Med* 61(67-68):3524-3526, 1970.

8591 NUCLEOTIDE METABOLISM AND GASTRIC ACID SECRETION. *(Ger.)* Mertz, D. P. (Med. Polyclin., U. Freiburg, Germany). *Klin Wschr* 48(14 831-838, 1970

8592 A GASTRIC "FACTOR" INHIBITING GASTRIC SECRETION IN RATS. *(Fr.)* Rheault, M. J. (Hotel Dieu, Montreal, Quebec, Canada), J. Deschene and L. Tetreault. *Canad J Surg* 13(3):288-294, 1970

8593 LIPIDS IN GASTRIC SECRETION. *(Cz.)* Fucik M. (Prague, Czechoslovakia), P. Mares, J. Prazak and J. Skorepa. *Sborn Lek* 72(7):161-165, 1970.

8594 EFFECT OF AN UREASE-CARBONIC ANHYDRASE-SUBSTRATE COMBINATION ON GASTRIC SECRETIO IN RATS. *(Ger.)* Gheorghin, T. (Med. Clin. U. Cologne, Germany), H. Frotz and H. J. Klein. *Z Gastroent* 8(5):280-287, 1970.

8595 GLUCAGON AND GASTRIC SECRETION. *(Ger.)* Miederer, S. E. (Med. Clin. Polyclin., U. Erlangen-Nuremberg, Germany), P. Deyhle and R. Ottenjann. *Deutsch Med Wschr* 95(28):1497-1498, 197

8596 INACTIVATION OF PENTAGASTRIN (ICI SO, 123 BY HUMAN SERUM AND LIVER HOMOGENATE. *(Ger.)* Seelig, H. P. (Path. Inst. Free U. Berlin, Germany), H. Linthe, J. B. P. Ludcke, D. Plewe, U. Muller, H. U. Wustling and M. Kessler. *Klin Wschr* 48(17):1069-1070, 1970

o P:Morph (8506)(8528)(8529)(8537)
o P:Absorp (8556)
o P:Motil (8573)(8575)
o D:Stomduo (8878)

Pancreas

8597 PANCREATIC RESPONSE TO ACIDIFICATION OF VARIOUS LENGTHS OF PROXIMAL INTESTINE IN THE DOG. *(E.)* Meyer, J. H. (VA Ctr., Los Angeles, Calif.), L. W. Way and M. I. Grossman. *Amer J Physiol* 219(4):971-977, 1970.

A technique was developed that allows quantitative diversion of perfusate from intact small intestine, and pancreatic response to regional acidification of proximal small bowel was studied and compared to the response to acidification of uninterrupted bowel in the same dogs. Pancreatic response to intestinal acidification was in part a function of length of intestine acidified; when acidified with 4 mEq HCl/15 min (0.16 N at 25 ml/15 min) an 11.5 cm segment of the first part of the duodenum gave 10% and a 45-cm segment gave 75% of the bicarbonate response seen when uninterrupted bowel was similarly perfused. With a segment of fixed length, pancreatic response varied as a linear function of titratable acid entering the segment per unit time until a maximal response was obtained. This maximal response from a 45-cm segment was approximately equal to the response to 1 U/kg-hr exogenous secretin by i.v. infusion. The relation of response to amount of titratable acid entering the segment per unit time cannot be explained as a simple function of intraluminal pH; it may be related to pH at a mucosal site where receptors for release of secretin are located.

8598 THE INCORPORATION OF ENZYME-PROTEINS IN THE PANCREAS OF THE ADRENALECTOMIZED RAT TREATED WITH CORTISONE. *(Ger.)* Wanke, M. (Path. Inst. U. Heidelberg, Germany), K. Wegener and H. Lahmann. *Virchow Arch Path Anat* 350(3):275-287, 1970.

The effect of cortisone on pancreatic enzyme formation 10 days after bilateral adrenalectomy was investigated in 70 rats; 20 intact rats served as controls. Adrenalectomy produced atrophy of the pancreas which was macroscopically evident and microscopically was characterized by vacuolization of acinar epithelium and reduction of zymogen granules. Administration of cortisone (2.5 mg/100 g) changed the histological picture dramatically within 4 hr, producing a distinct increase in zymogen granule content. The trypsin content of the pancreas homogenate was drastically reduced after bilateral adrenalectomy (80% less than intact controls), while it increased after subsequent cortisone administration to a value 12% higher than that of the controls. Two hours after cortisone administration, autoradiography demonstrated a 3.5-fold higher number of silver granules over the total cytoplasm than seen in adrenalectomized animals which did not receive cortisone; the increase in the number of silver granules in nuclei after cortisone administration was insignificant. The activities of cytoplasm and nucleus reflected the relative importance for the acceleration of the cortisone-induced enzyme synthesis; a close relationship between adrenal cortex and amino acid uptake of the exocrine cells of the pancreas appears to exist.

8599 PANCREATIC BICARBONATE RESPONSE TO VARIOUS ACIDS IN DUODENUM OF THE DOG. *(E.)* Meyer, J. H. (VA Ctr., Los Angeles, Calif.), L. W. Way and M. I. Grossman. *Amer J Physiol* 219(4):964-970, 1970.

Pancreatic bicarbonate secretion was observed in response to duodenal acidification in dogs with chronic pancreatic fistulas with each of five acids: HCl, H_2SO_4, H_3PO_4, lactic, and citric. Over the range from pH 0 to pH 3, bicarbonate secretion was independent of the pH of acid entering the intestine. Above pH 3 there was a rapid decrease in bicarbonate secretion until at pH 4.5 to pH 5.0 an absolute threshold was detected above which no bicarbonate secretion occurred. At all pH values below this threshold the rate of pancreatic bicarbonate secretion was a function of the rate of entry (mEq/15 min) of titratable acid (end point pH 4.5) independent of the concentration of the acid. Weak (undissociated) acids as well as strong acids showed this relation between titratable acid and response. The amount of bicarbonate secreted per mEq acid introduced was less with weak acids (higher pK) than with strong. The rate of secretin release appears to be a function of the length of intestine acidified below a critical pH.

8600 α-AMYLASE: RECENT PROGRESS. *(Fr.)* Wettendorff, P. (Hosp. Ixelles, Belgium). *Acta Gastroent Belg* 33(4-5):319-334, 1970.

8601 THE DEVELOPMENT OF AMYLASE ACTIVITY IN FETAL RATS (PANCREAS, LIVER, SERUM) IN PLACENTA AND AMNIOTIC FLUID: CHANGES OF AMYLASE ACTIVITY FOLLOWING WHOLE-BODY IRRADIATION OF THE MOTHER WITH 800 R. *(Ger.)* Goetze, T. (Inst. Path. Physiol., Friedrich Schiller U., Jena, Germany), G. Mannel and W. Wild. *Acta Biol Med German* 24(5):569-578, 1970.

8602 PANCREOZYMIN STIMULATION OF CALCIUM EXCRETION BY DOG PANCREAS. *(Ger.)* Goebell, H. (Med. Clin., Philipps U., Marburg, Germany), C. Steffen, C. Bode and K. Hupe. *Klin Wschr* 48(12):755-757, 1970.

8603 EXTERNAL SECRETORY FUNCTION OF THE PANCREAS IN EXPERIMENTAL DISTURBANCES OF BILE SECRETION. *(Rus.)* Kadyrov, U. Z. (Inst. Zool. Parasit., Tashkent, USSR). *Pat Fiziol Eksp Ter* 14(2):60-64, 1970.

8604 EFFECT OF BROMELAIN ON THE ACTIVITY OF PANCREATIC LIPASES. *(Ger.)* Friebe, U. (Biochem. Inst. U. Freiburg, Breisgau, Germany), A. W. Holldorf, G. Dieter and K. Sickinger. *Z Gastroent* 8(4):240-245, 1970.

8605 THE INFLUENCE OF CHRONIC ADMINISTRATION OF PENTAGASTRIN ON THE RAT PANCREAS. *(E.)* Barrowman, J. A. (London Hosp. Med. Coll., England) and P. D. Mayston. *J Physiol* 210(2):180P-182P, 1970.

o P:Morph (8504)(8543)
o Diagproc (8768)
o D:Pancreas (9007)

SECRETION AND METABOLISM

Hepatobiliary Tract

8606 ACCUMULATION AND RELEASE OF TRIGLYCERIDES BY RAT LIVER FOLLOWING PARTIAL HEPATECTOMY. *(E.)* Delahunty, T. J. (Dept. Biochem., McGill U., Montreal, Quebec, Canada) and D. Rubinstein. *J Lipid Res* 11(6):536-543, 1970.

Lipid accumulation and secretion by livers of partially hepatectomized rats were studied *in vivo* and in the perfused liver. Regenerating liver accumulated lipid for about 20 hr following partial hepatectomy, and during this time incorporation of i.v. palmitate-9,10-^{3}H into β-lipoprotein increased. No change in the level of serum β-lipoproteins was seen 13 hr after partial hepatectomy but the specific activities of the triglycerides in the liver and β-lipoproteins were significantly diminished. Extension of these studies to the isolated perfused liver system demonstrated that 13 hr after partial hepatectomy the regenerating liver was capable of secreting greater quantities of the lipid, but not the protein, moiety of the β-lipoproteins in comparison with liver taken immediately from a partially hepatectomized animal, although there was no difference between the weights of the livers. However, following addition of palmitate-^{3}H and ^{14}C-labeled amino acids to the perfusate, the specific activity of the hepatic and β-lipoprotein triglycerides of the liver excised 13 hr after partial hepatectomy was diminished, but that of the protein was not affected. Prelabeling of the accumulated triglyceride with palmitate-1-^{14}C *in vivo* revealed that the proportions of the accumulated triglyceride secreted as β-lipoproteins by perfused livers excised immediately and 13 hr after partial hepatectomy were identical. The regenerating liver seems to acquire rapidly the ability to mobilize triglycerides at a rate equal to that of the much larger normal liver, so that it can handle all free fatty acids presented to it.

8607 HEPATOBILIARY REGULATION OF LIPID METABOLISM. *(Ger.)* Vecchi, G. P. (Med. Clin. U. Modena, Italy), G. F. Salvioli, R. Salati and W. Spogler. *Schweiz Med Wschr* 100(40):1694-1698, 1970.

The role of liver in the control of physicochemical characteristics of the bile was studied in 5 patients with cholelithiasis, 5 patients with Laennec's cirrhosis and 5 normal subjects. The average cholesterol level was 207 mg %, triglyceride content was 27 mg % and free fatty acids were 1.6 mEq/l in normal bile. Cirrhotic patients had decreased bile cholesterol (114 mg %) and triglyceride (10 mg %) levels while the patients with cholelithiasis had high bile cholesterol (570 mg %) and free fatty acid (3.7 mEq/l levels with no changes in bile phospholipid levels. Such increases in cholesterol content with no variations in phospholipid levels apparently create conditions leading to cholesterol precipitation and gallstone formation. Increased bile free fatty acid levels are indicative of a functional alteration of the liver in terms of esterification processe whereas bile fluidity seems to be specifically affected in cholelithiasis and constitutes a feature of total liver insufficiency in cirrhosis.

8608 THE REDOX STATE OF NAD+/NADH SYSTEMS IN GUINEA PIG LIVER DURING INCREASED FATTY ACID OXIDATION. *(E.)* Willms, B. (Med. U. Clin. Gottingen, Germany), J. Kleineke and H. D. Soling. *Biochim Biophys Acta* 215(3):438-448, 1970.

Changes in the redox state of the substrate pairs lactate/pyruvate, 3-hydroxybutyrate/acetoacetate, glutamate/(α-oxoglutarate)(NH_4+) and α-glycerophos-

nate/dihydroxyacetone phosphate as well as changes
n the ATP/ADP ratio were studied in guinea pig
ivers during increased oxidation of fatty acids
n vivo and during liver perfusion. The redox state
f the lactate/pyruvate system in isolated perfused
uinea pig livers became more negative, whereas the
edox state of the 3-hydroxybutyrate/acetoacetate
ystem showed a slight increase only during prolonged
atty acid oxidation. *In vivo*, fat feeding for 3
ays increased the lactate/pyruvate ratio and the
-glycerophosphate/dihydroxyacetone phosphate ratio,
nd doubled the 3-hydroxybutyrate/acetoacetate ratio.
he ATP/ADP ratio in the guinea pig liver was not
ltered by an increased oxidation of fatty acids.
nder normal conditions the redox state of the 3-
ydroxybutyrate dehydrogenase system and that of
he glutamate dehydrogenase (EC 1.4.3) system were
n equilibrium in rat and guinea pig liver; under
ertain experimental conditions a disequilibrium
as observed in both animals probably due to dif-
erent compartmentation of some of the substrates
f these redox systems. The more negative state
f the cytoplasmic NAD+/NADH system in guinea pig
iver can affect the activity of pyruvate carboxy-
ase by leading to relatively lower concentrations
f pyruvate, but the redox state of the 3-hydroxy-
utyrate dehydrogenase system does not seem to
egulate the activity of pyruvate carboxylase in
uinea pig liver under the given experimental con-
itions.

509 FATTY ACID BIOSYNTHESIS: VII. SUBSTRATE CONTROL OF CHAIN-LENGTH OF PRODUCTS SYN-
HESIZED BY RAT LIVER FATTY ACID SYNTHETASE. *(E.)*
ansen, H. J. M. (Dept. Biochem., U. Nottingham,
ngland), E. M. Carey and R. Dils. *Biochim Biophys*
ta 210(3):400-410, 1970.

he chain-lengths of fatty acids synthesized by puri-
ied rat liver fatty acid synthetase from 1-^{14}C-
cetyl-CoA, 1,3-$^{14}C_2$-malonyl-CoA and from 1-^{14}C-acetyl-
oA plus partially purified rat liver acetyl-CoA
arboxylase were determined by gas-liquid and paper
hromatography. The relative amount of radioactivity
ncorporated from added acetyl-CoA and malonyl-CoA
epended on the substrate concentrations used. With
xcess acetyl-CoA to malonyl-CoA, greater amounts of
cetyl-CoA were incorporated than theoretically ex-
ected from the malonyl-CoA pathway; with excess
alonyl-CoA, less acetyl-CoA was incorporated than
heoretically expected. An increase in the chain-
ength of fatty acids synthesised from malonyl-CoA
as observed with increasing malonyl-CoA concentra-
ions and malonyl-CoA to acetyl-CoA ratios; a simi-
ar increase was observed when increasing amounts
f a malonyl-CoA generating system were added. How-
ver, at the same overall rate of synthesis, a
ower proportion of long-chain fatty acids was syn-
hesised from carboxylated acetyl-CoA than from
dded malonyl-CoA. Acetyl-CoA carboxylase may car-
oxylate acetate bound to fatty acid synthetase.

510 EFFECTS OF CHOLESTEROL ON BILE ACID METABOLISM IN THE RAT. *(E.)* Beher, W. T.
enry Ford Hosp., Detroit, Mich.), K. K. Casazza, M. E. Beher, A. M. Filus and J. Bertasius. *Proc Soc Exp Biol Med* 134(3):595-602, 1970.

The effects of cholesterol feeding and accumulated tissue cholesterol on bile acid metabolism in normal female rats were studied. Diets supplemented with cholesterol (1%) and corn oil (3%) over the entire experimental period (3 weeks) resulted in decreases in the cholic and chenodeoxycholic acid pool half-lives of 1.6 and 0.9 days, resp. In experiments on rats with accumulated tissue cholesterol fed unsupplemented basal rations during the experimental period, the half-lives of these acids also decreased 1.6 and 0.9 days, resp., from the values for normal control rats. In both the dietary and accumulated tissue cholesterol experiments, the total bile acid pool concentration was unchanged (approximately 6.2 mg/100 g and 10 mg/100 g rat, resp.) but there was an important decrease in cholic acid concentration (from 5.4 to 3.5 mg/100 g rat in both cases, resp.) accompanied by a compensating increase in chenodeoxycholic concentration (from 0.8 to 1.8 and from 1.2 to 2.8 mg/100 g rat, resp.). In the animals with elevated tissue cholesterol the effects on bile acid turnover were not due to increased levels of sterols in the gastrointestinal tract but due to the increased tissue cholesterol levels. Dietary corn oil by itself had no effect on either turnover rates or pool sizes of the bile acids.

8611 PEROXIDATION OF MITOCHONDRIAL LIPIDS AND THE STATE OF MITOCHONDRIAL PROTEINS: EFFECT OF SEVERAL FACTORS. *(Ger.)* Dioguardi, N. (Dept. Path., U. Milan, Italy), G. Ideo, M. Podda and E. Del Ninno. *Schweiz Med Wschr* 100(40):1698-1700, 1970.

Enzyme release from isolated rat liver mitochondria due to alterations in unsaturated fatty acid peroxidation processes (at the mitochondrial membrane level) was studied in terms of metal ion effects in the presence and absence of ascorbic acid and of the effect of corticosteroids and adrenalectomy. Membrane alterations were followed by measuring the increase of enzyme activity in supernates while peroxidation processes were followed by measurement of malonylaldehyde formation. Of the metal ions (calcium, magnesium, manganese and iron (chlorides)) examined, iron was the only ion catalyzing peroxidation of unsaturated fatty acids in the absence of ascorbic acid. Ascorbic acid dependent peroxidation was enhanced by both iron and magnesium ions while calcium and manganese inhibited this process. Maximal mitochondrial enzyme release occurred in the presence of iron, and glutamate dehydrogenase, malate dehydrogenase and glutamic oxaloacetic transaminase activities were highly correlated with the degree of lipid peroxidation; maximal inhibition of enzyme release occurred in presence of manganese. Cortisone produced no changes in either peroxidation or enzyme release, while a high initial velocity in mitochondrial lipid peroxidation occurred in adrenalectomized rats.

8612 INFLUENCE OF METHYLCHOLANTHRENE AND PHENOBARBITAL TREATMENT ON LIVER CHROMATIN TEMPLATE ACTIVITY. *(E.)* Piper, W. N. (Sch. Pharm., Purdue U., Lafayette, Ind.), D. E. Blake and W. F. Bousquet. *Res Commun Chem Path Pharmacol* 1(5):591-606, 1970.

Hepatic chromatin template activity for RNA synthesis was increased by pretreatment of male rats with phenobarbital (100 mg/kg) or 3-methylcholanthrene (30 mg/kg). Treatment of chromatin with acid to remove basic protein abolished these differences in template activity. Adrenalectomy abolished the increase in chromatin template activity produced by phenobarbital treatment, but had no effect on that produced by 3-methylcholanthrene, providing further evidence for a difference in mechanism by which these agents ultimately act to stimulate protein synthesis. The ratio of 3-methylcholanthrene bound to chromatin versus that bound to homogenate protein was 8-9 times larger than that for phenobarbital. An additive effect on chromatin template activity was not observed after pretreatment of rats with both compounds. Neither phenobarbital nor 3-methylcholanthrene pretreatment caused an alteration in turnover of chromatin-histone protein as evidenced by arginine or lysine incorporation or in the acetylation of chromatin protein at 1 or 6 hr after administration, indicating that differences of template activity were not due to altered turnover or acetylation of chromatin protein.

8613 STUDIES ON THE METABOLISM OF C_{19} STEROIDS IN RAT LIVER: VI. HYDROXYLATION OF 4-ANDROSTENE-3,17-DIONE IN RAT LIVER MICROSOMES. *(E.)* Gustafsson, J. A. (Karolinska Inst., Stockholm, Sweden) and B. P. Lisboa. *Acta Endocr* 65(1):84-94, 1970.

Hydroxylation of 4-androstene-3,17-dione by liver microsomes of male rats was investigated, and 6β-, 6α-, 7α-, 16α-, and 18-hydroxyandrostenedione were isolated from the microsomal reaction mixture by thin-layer chromatography and identified by gas chromatography-mass spectrometry. After incubations with testosterone the only 3,17-dioxo-Δ^4-steroids formed were 6β- and 7α-hydroxyandrostenedione. 6α- and 18-Hydroxyandrostenedione were isolated after incubations with 6β- and 18-hydroxytestosterone, resp., indicating that the 17β-hydroxy pathway is probably more important in the formation of 3,7-dioxo-Δ^4-$C_{19}O_3$ steroids.

8614 AMINOPHENAZONE AND CODEINE DEMETHYLATION IN HUMAN LIVER. A STUDY ON MICROSOMAL ELECTRON TRANSFER. *(Ger.)* Ackermann, E. (Med. Acad. Carl Gustav Carus, Dresden, Germany). *Biochem Pharmacol* 19(6):1955-1973, 1970.

The activity of mixed function oxidases and microsomal electron transfer were studied using codeine and aminophenazone on samples of human liver obtained from cholecystectomized patients and compared with corresponding rat liver fractions. The V_{max} of glucose-6-phosphate/6-phosphogluconic acid dehydrogenase in the soluble fraction was 50% of the value in the corresponding rat liver fraction. The V_{max} of both NADPH-cytochrome c reductase and NADH-cytochrome c reductase were lower in man than in rat liver. Molar concentrations of cytochrome b_5 and P-450 in man were only 50% of that found in rat liver, while their spectra were identical to that of rat liver. Microsomal Fe_x (oxidized NADPH-acceptor) revealed spectral features of a low spin hemoprotein. The V_{max} for aminophenazone and codeine were lower in the human microsomal fraction while the K_m's were 10 and 40 times higher, resp. than in rat microsomes.

8615 INDUCTION OF THE HEPATIC SYNTHESIS OF β-LIPOPROTEINS BY HIGH CONCENTRATIONS OF FATTY ACIDS: EFFECT OF ACTINOMYCIN D. *(E.)* Alcindor, L. G. (C.H.U. St. Antoine, Paris, France), R. Infante, C. Soler-Argilaga, A. Raisonnier, J. Polonovski and J. Caroli. *Biochim Biophys Acta* 210(3):483-486, 1970.

The effect of actinomycin D on the induction of hepatic lipoprotein synthesis was measured in livers from male Wistar rats, perfused with blood containing high concentrations of albumin-complexed fatty acids. The rats received a 20% glucose solution during the 18 hr preceding the perfusion, in order to raise liver glycogen reserves. The perfusion medium was 60 ml fresh buffered rat blood containing 4 gm/100 ml of albumin and actinomycin D was added to the perfusate at zero time; labeled leucine was added at 60 min after start of perfusion and oleic acid was added as an albumin-fatty acid complex at 60 min. Radioactivity time was 60 min, and was measured as the amount incorporated in 100 ml of perfusate calculated for 1 gm of wet liver. The radioactivity incorporated into the lipoprotein d < 1.063 was identical in the actinomycin and control groups. Pretreatment of the liver with actinomycin prevented the stimulating effect of fatty acid overload on the release of newly synthesized lipoprotein d < 1.063 into the medium. The amino acid pool and the total radioactive leucine uptake by the liver were unchanged by the fatty acid overload, either with or without actinomycin D.

8616 THE EFFECT OF PERFUSATE pH ON GLUTAMINE METABOLISM IN THE ISOLATED PERFUSED RAT LIVER. *(E.)* Lueck, J. D. (Sch. Med. Dent., U. Rochester, N.Y.) and L. L. Miller. *J Biol Chem* 245(20):5491-5497, 1970.

The effect of perfusate pH on the metabolism of ^{14}C-labeled glutamine was measured in isolated normal rat livers which were perfused with whole heparinized rat blood for 6 hr. The perfusate was maintained at either the normal physiological pH of 7.45 ± 0.05 or at a pH of 7.15 ± 0.05 (a value simulating severe metabolic acidosis) and glutamine utilization was studied by measuring the steady state utilization of ^{14}C-labeled glutamine infused at a constant rate, and the utilization of a single dose of labeled glutamine with concomitant inhibition of glutamine synthesis by methionine sulfoximine. Livers perfused at pH 7.15 utilized one-half as much glutamine from a constant infusion than those per-used at pH 7.45; concentrations of all measured etabolites such as lactate, pyruvate, glutamate, nd α-ketoglutarate were lower at pH 7.15 than at he control pH 7.45. When glutamine synthetase was nhibited by methionine sulfoximine, utilization of single dose of labeled glutamine revealed a half-ife for glutamine of 3.7 hr at pH 7.15 and 1.2 hr t pH 7.45. The perfusate glutamine concentration fter 6 hr of perfusion increased to 90 μg L-glutamine/ l of perfusate at pH 7.15 compared with a constant owered level of -40 μg at pH 7.45. In contrast to -glutamine the uptake of L-glutamic acid by the isoated perfused liver occurred at equal rates at pH .15 and pH 7.45, and there was no significant diference in the percentage of doses oxidized to labeled O_2 or in urea synthesis.

617 GLYOXYLATE METABOLISM BY ISOLATED RAT LIVER PEROXISOMES. *(E.)* Vandor, S. L. Mead Johnson Res. Ctr., Evansville, Ind.) and N. . Tolbert. *Biochim Biophys Acta* 215(5):449-455, 970.

ADH-glyoxylate reductase in isolated rat liver eroxisomes preferentially catalyzed the reduction f glyoxylate to glycolate; it also reduced hydroxyyruvate and pyruvate, but no dehydrogenase activity was measurable at pH 9.2. Michaelis constants were 1.5 mM for glyoxylate and 10.5 μM for NADH, and he pH optimum was 6.4. A glutamate-glyoxylate minotransferase (EC 2.6.1.4) was also present in at liver peroxisomes which together with NADH-lyoxylate reductase (EC 1.1.1.26) may function in substrate-mediated electron shuttle for the oxidaion of cellular NADH.

618 EFFECT OF ESSENTIAL FATTY ACID DEFICIENCY ON RELEASE OF TRIGLYCERIDES Y THE PERFUSED RAT LIVER. *(E.)* Fukazawa, T. Hormel Inst., U. Minnesota, Austin), O. S. Privett nd Y. Takahashi. *J Lipid Res* 11(6):522-527, 1970.

riglyceride release was studied in perfused livers f rats fed fat-free diets or diets containing hyrogenated coconut oil or corn oil. Infusion with odium oleate or linoleate caused an accumulation f triglycerides in the livers of corn oil-fed nimals and stimulated the release of triglycerides nto the perfusing medium. In similar experiments ith essential fatty acid-deficient animals, which ere fed fat-free diets or diets containing hyrogenated coconut oil, there was no increase in ecretion of triglycerides into the perfusate, and he amount of triglyceride which accumulated in the iver was greater than in the livers of the control corn oil-fed) animals. Tracer experiments with leate-1-^{14}C or linoleate-1-^{14}C also showed that ith livers of essential fatty acid-deficient anials, secretion of triglyceride into the perfusate as not stimulated by infusion of fatty acids into he perfusing medium. Impairment of the secretion f triglycerides appears to be a factor in the acculation of fat in the livers of essential fatty cid-deficient animals.

8619 CHOLERETIC EFFECTS OF CHOLECYSTOKININ, GASTRIN II, AND CERULEIN IN THE DOG. *(E.)* Jones, R. S. (VA Ctr., Los Angeles, Calif.) and M. I. Grossman. *Amer J Physiol* 219(4):1014-1018, 1970.

The choleretic effects of cholecytokinin, gastrin II and cerulein were studied in mongrel dogs prepared by cholecystectomy, ligation of the lesser pancreatic duct, insertion of gastric and duodenal cannulas and cannulation of the common bile duct through the duodenal cannula. The flow and composition of hepatic bile were observed during i.v. infusion of a constant dose rate of sodium taurocholate (5 mg/ml/min) with and without various doses of cholecystokinin, cerulein, and gastrin II. Each of the peptides produced increased bile flow (1.6-2.3-fold) and bicarbonate concentration (2-3-fold). Cholecystokinin and cerulein produced increased bile chloride concentration by 10%; the slopes and positions of the lines relating bile flow rate to bicarbonate and chloride concentration during stimulation by cholecystokinin and cerulein were not different. Dose-response lines for cerulein and cholecystokinin were evaluated using Michaelis-Menten kinetic constants; the relative choleretic potency in decreasing order was cerulein, cholecystokinin, gastrin II.

8620 ACCELERATED RESPONSE OF HEPATIC DNA SYNTHESIS TO PARTIAL HEPATECTOMY IN RATS PRETREATED WITH GROWTH HORMONE OR SURGICAL STRESS. *(E.)* Moolten, F. L. (Boston U. Sch. Med., Mass.), N. J. Oakman and N. L. R. Bucher. *Cancer Res* 30(9):2353-2357, 1970.

The effects of surgical stress (laparotomy, sham adrenalectomy, and adrenalectomy), cortisone, hydrocortisone, ACTH, and growth hormone on the response of hepatic DNA synthesis to partial hepatectomy (68%) were determined in young rats (28-32 days old) by measuring the specific activity (dpm/mg DNA) of the DNA, 1 hr after thymidine-^{14}C injection (0.4 μC, i.v.). Laparotomy (3084) performed 4.5 to 8 hr before hepatectomy, and sham adrenalectomy (8225) and adrenalectomy (4567) performed 3 days before hepatectomy enhanced the control response of hepatic DNA synthesis (826), while sham adrenalectomy (2083) and adrenalectomy (2600) had no effect on the DNA synthesis when hepatectomy was not performed (2607). Cortisone (5 mg, i.p.), hydrocortisone (1-8 mg, s.c. or 1-25 mg, i.p.), and ACTH (0.75-1.50 units, s.c.) administered 4-8 hr before hepatectomy had no effect on hepatic DNA synthesis, but bovine growth hormone (s.c.) increased DNA synthesis above the sodium chloride-pretreated hepatectomized control values (3912) proportionally to the dose (4716 at 0.03 mg to 13732 at .15 mg). The specific activity of DNA was determined 14 hr after hepatectomy in all the above studies, but to test the possibility that growth hormones might effect an earlier onset of DNA synthesis rather than an increased production, the specific activity of DNA was determined 10 hr after hepatectomy and the rats pretreated with growth hormone already exhibited higher DNA specific activity (3041) than the controls (2147). The peak of DNA synthesis which normally occurs 20 hr after hepatectomy was not significantly increased by the growth hormone pretreatment (20938 compared to 16882) further supporting the theory of earlier onset of DNA synthesis.

8621 THE EFFECT OF 5-FLUOROURACIL ON ULTRASTRUCTURE AND RNA LABELING IN THE LIVER OF RATS FOLLOWING PARTIAL HEPATECTOMY. *(E.)* Stenram, U. (Dept. Path., U. Uppsala, Sweden) and R. Willen. *Chem Biol Interaction* 2(2):79-88, 1970.

The effect of 5-fluorouracil on regeneration processes in the liver was studied in hepatectomized rats by measuring ^{3}H-cytidine incorporation into RNA. Administration of 5-fluorouracil (0.1 mg i.p. once before and twice following hepatectomy) permitted the usual enlargement of liver-cell nucleoli after partial hepatectomy, but prevented the appearance of ribosomes in the cytoplasm which became rich in smooth-surfaced endoplasmic reticulum. 5-Fluorouracil heavily depressed the labeling of 29 and 18 S RNA in both hepatectomized and sham-operated animals. The synthesis of pre-ribosomal RNA in the nucleus seems to proceed in the presence of 5-fluorouracil but its further processing is apparently impaired.

8622 THE EFFECT OF HEPATECTOMY AND SEX HORMONES ON THE PSEUDOCHOLINESTERASE ACTIVITY IN LIVER AND SERUM OF THE RAT. *(E.)* Leeuwin, R. S. (Pharmacol. Lab., U. Amsterdam, Netherlands) and E. T. Groenewoud. *Acta Endocr* 65(1):184-192, 1970.

The combined effects of hepatectomy, castration and treatment with sex hormones on the pseudocholinesterase activity in liver and serum of male and female rats was investigated. Hepatectomy in normal rats resulted in a sharp decline of the pseudocholinesterase activity, subsequently followed in females by a rapid increase to normal values and in males by a very slow increase. Hepatectomy in castrated rats also caused a marked decrease of the pseudocholinesterase activity, but the pseudocholinesterase activity remained at a relatively low level in both castrated females and castrated males. Daily treatment of castrated-hepatectomized females with estradiol benzoate, either immediately or 9 days after hepatectomy induced a gradual restoration of the enzyme activity to and above the normal castrate level. When castrated-hepatectomized males were treated daily with testosterone propionate the extremely low activity may even be depressed further. Steroids appear to affect the restoration of the synthetic capacity for pseudocholinesterase; the changes in liver pseudocholinesterase activity were reflected in the serum activity.

8623 INHIBITION OF HEPATIC MICROSOMAL MIXED FUNCTION OXIDASES BY D_2O. *(E.)* Holtzman, J. L. (Natl. Cancer Inst., Baltimore, Md.) and M. L. Carr. *Life Sci* 9(18):1033-1038, 1970.

The effect of D_2O on rat liver microsomal reactions was studied with aniline, 3,4-benzpyrene and ethylmorphine as substrates. Aniline hydroxylase, 3,4-benzpyrene hydroxylase, and ethylmorphine N-demethylase were inhibited 22-30% by 99% D_2O. Endogenous NADPH oxidase was not inhibited nor was the unstimulated NADPH-cytochrome P-450 reductase. On the other hand, both the NADPH oxidase and NADPH-cytochrome P-450 reductase stimulation seen on the addition of ethylmorphine were inhibited 31 and 26%, resp. NADPH cytochrome c reductase activity was inhibited only 13%. The participation of water in mixed function oxidases either through hydration of the proteins or heme, or through a cryptic protonolysis is suggested by these results.

8624 THE POST-MORTEM DIMINUTION OF RAT LIVER MICROSOMAL PROTEIN SYNTHESIZING AND DRUG METABOLIZING ACTIVITIES. *(E.)* Jondorf, W. R. (George Washington U. Sch. Med., Washington, D. C.) and J. D. Donahue. *Res Commun Chem Path Pharmacol* 1(5):581-590, 1970.

The decline of endogenous mRNA-directed and poly U-dependent microsomal L-(^{14}C)-phenylalanine incorporating activities and microsomal drug metabolizing activities by samples obtained under standard conditions from livers excised from donor rats at various times (0-16 hr) after death were measured. The protein synthesizing activities declined rapidly within 6 hr but the drug metabolizing capacity was comparatively stable. The decline of the enzyme activities were arrested either by storing the rat carcasses in the cold (0-4°C) or by excising livers from freshly killed animals and storing these excised organs at 0-4°C before preparing the appropriate subcellular fractions for incubations *in vitro*. No measurable difference in the weights of livers excised as late as 6 hr after the death of the donor animals was seen. At 16 or 20 hr postmortem, however, there was an increase in liver weight of about 35% and a decline in the yield of microsomal fraction per unit weight of liver (50%).

8625 COMPARATIVE STUDIES ON LIVER AND KIDNEY XANTHINE DEHYDROGENASE IN TWO BREEDS OF DOMESTIC CHICKS (*GALLUS DOMESTICUS*) DURING PROLONGED STARVATION. *(E.)* Scholz, R. W. (Dept. Vetr. Sci., Pennsylvania St. U., University Park). *Comp Biochem Physiol* 36(3):503-512, 1970.

Fasting for 8-10 days caused a net loss of soluble liver and kidney protein in both White Leghorn (layer-type) cockerels and Indian River (broiler-type) cockerel, but breed differences were observed in the response of chick liver xanthine dehydrogenase to progressive starvation. Total liver xanthine dehydrogenase activity was not changed significantly during an 8-day fast in White Leghorn cockerels, in contrast to the significant reduction in liver enzyme activity observed after 3 days of fasting in Indian River cockerels (from 3 to 2 units/g body weight). Kidney xanthine dehydrogenase activity during fasting was not changed appreciably in either breed of chick. A relatively small increase in plasma uric acid levels in broiler-type chicks was seen during starvation probably due to hemoconcentration, but could not explain completely the 3-fold increase after 8 days of fasting in layer-type chicks.

8626 SOME STRUCTURAL AND FUNCTIONAL CONSEQUENCES OF HEPATIC ADENOSINE TRIPHOSPHATE DEFICIENCY INDUCED BY INTRAPERITONEAL D-FRUCTOSE ADMINISTRATION. *(E.)* Goldblatt, P. J. (U. Pittsburgh Sch. Med., Pa.), H. Witschi, M. A. Friedman, R. J. Sullivan and K. H. Shull. *Lab Invest* 23(4):378-385, 1970.

Hepatic ATP deficiency in female rats was induced by intraperitoneal injection of 3 mmoles of D-fructose. The ATP content reached 40 to 50% of control levels in 10 min and remained depressed up to 3 hr. Regeneration of control levels, which occurred within 7 hr, was prevented by hadacidin which blocks *de novo* synthesis of adenine nucleotides. Transient depression of hepatic protein synthesis, but no interference with RNA synthesis, was documented. The only ultrastructural alteration-induced (aside from glycogen accumulation) was formation of dense fibrillogranular plaques in 20% of the nucleoli of both fructose- and glucose-treated animals. From a comparison of these findings to similar decreases in hepatic ATP content induced with small doses of ethionine (25 or 50 mg), it appears that ATP levels are important in the maintenance of structural and functional integrity of hepatic cells; these cells can tolerate a considerable degree of ATP loss (approximately 50%) before severe alterations occur.

8627 THE EFFECT OF FASTING AND SEVERAL HYPERGLYCEMIC AGENTS ON THE FREE AMINO ACIDS OF RAT LIVER. *(E.)* Burns, L. C. (Baylor U. Coll. Med., Houston, Tex.), S. K. Meghal and R. E. Koeppe. *Life Sci* 9(18):1045-1051, 1970.

Free amino acid and glycogen concentrations were measured in the livers of normal male rats which were either starved for 48 hr before sacrifice or were fed a normal diet and treated with either glucagon, D-mannoheptulose or hydrocortisone. Fasting increased the total free amino acid pool to 24.6 ± 3.4 μmoles/g liver, compared with a control value of 20.0 ± 3.3 μmoles/g liver in the fed rats, while treatment with hydrocortisone for 5 days significantly increased the amino acid pool to 30.7 ± 4.3 μmoles/g liver. Mannoheptulose treatment resulted in normal values, and glucagon decreased the total amino acid pool to 15.1 ± 4.0 μmoles/g liver. Significant differences between fed control rats and rats treated with hydrocortisone were obtained for determinations of glycine, lysine, serine, taurine and ammonia. Liver glycogen concentrations were decreased in 48-hr fasted rats to a mean value of 4.2 mg/g compared with a control value of 59 mg/g in fed rats. Treatment with glucagon decreased liver glycogen to 16.7 mg/g and mannoheptulose decreased it to 12.1 mg/g, while hydrocortisone increased it to 93 mg/g. There was no correlation between hepatic amino acid concentration and rate of gluconeogenesis.

8628 STUDY OF THE EFFECT OF EXOGENOUS GLUCOSE ON THE EXCESS FORMATION OF PORPHYRINS AND NADH IN THE LIVER OF RATS INTOXICATED WITH ETHANOL. *(E.)* Gajdos, A. (Lab. Biochem. Res., U. Paris, France) and M. Gajdos-Torok. *Biochim Biophys Acta* 215(3):550-553, 1970.

The excessive biosynthesis of porphyrins and NADH in rat liver following a high dose of exogenous glucose was studied in female Wistar rats intoxicated with ethanol. Two groups of rats were given a 3-fold diluted ethanol solution i.p. twice a day for one week at a dose of 7.5 ml/kg and on the last 2 days, one group of rats received a 12.5 g/kg glucose solution twice a day by gastric tube; a third group of untreated rats served as normal controls. The animals were decapitated and livers were removed and quantitative determinations were made for ATP, NAD, NADH, δ-aminolevulinate, lactate and pyruvate. In the liver, ethanol intoxication produced a significant decrease in the level of ATP and a significant increase in δ-aminolevulinate synthetase activity and these effects were reversed by glucose treatment. Normal control values for ATP (μmoles per 100 g liver) were 164 ± 11 compared with 83 ± 4.2 in rats intoxicated with ethanol, and 170 ± 17.1 in rats intoxicated with ethanol and treated with glucose. Synthetase activity (μmoles aminolevulinate formed per g per hr was 53.7 ± 4.6 in controls, 144 ± 19.2 in ethanol-treated rats, and 88 ± 12 in ethanol-intoxicated, glucose-treated rats. Ethanol intoxication elevated NADH in liver from a control value of 222 ± 11.8 μg/g to 443 ± 6.9; and this was reversed by glucose to a value of 357 ± 12 μg/g. The hepatic levels of lactate and pyruvate were not modified by ethanol intoxication. The excess porphyrin formation was reflected by the elevated activity of δ-aminolevulinate synthetase activity, the rate-limiting enzyme of porphyrin biosynthesis.

8629 LYSOSOMES AND HEPATIC REGRESSION DURING FASTING. *(E.)* Filkins, J. P. (U. Tennessee Med. Units, Memphis). *Amer J Physiol* 219(4):923-927, 1970.

Various tissue parameters were evaluated as indices of liver regression, and free and total activities of the lysosomal hydrolases (acid phosphatase, β-glucuronidase, acid ribonuclease, and cathepsin D) were measured in livers of male rats sacrificed after fasting 24, 48, 96 or 168 hr. During 24 hr of complete food deprivation, liver mass decreased 33%, protein concentration increased 15%, water concentration was unchanged, and cellularity expressed as nuclei per g of wet liver increased 50%. Within 24 hr and throughout the 168 hr of fasting, total activities of the four lysosomal hydrolases generally increased when expressed either as activity per g liver wet weight or g protein. The free activities of acid phosphatase, but not β-glucuronidase, also consistently increased; by 168 hr the free activities of acid phosphatase and ribonuclease were maximal. Throughout the fasting period total hydrolase activities decreased when expressed either as activity/total wet weight of liver or per cell nuclei, and by 168 hr decreases in total cathepsin and ribonuclease activities were marked. These biochemical data tend to substantiate morphological evidence for a possible role of lysosomal hydrolases in the mobilization of hepatic cytoplasm during fasting; however, neither net increase nor complete maintenance of lysosomal hydrolase activity was observed.

8630 DECREASED HYDROXYLATION OF STEROID HORMONES BY LIVER MICROSOMES FROM RATS BEARING WALKER CARCINOSARCOMA 256. *(E.)* Kato, R. (Natl. Inst. Hyg. Sci., Tokyo, Japan) and A. Takahashi. *Cancer Res* 30(9):2346-2352, 1970.

Progesterone and testosterone hydroxylating activities of liver microsomes were markedly decreased in male and female rats bearing Walker carcinosarcoma 256; the decreases in the hydroxylating activities were greater in the male rats than in the female rats. The content of cytochrome P-450 in liver microsomes was decreased in the tumor-bearing male and female rats, and the binding capacity of P-450 with progesterone and testosterone was decreased in the liver microsomes from male rats, but not from female rats. The administration of 17-methyltestosterone to the tumor-bearing male rats did not prevent the decrease in the binding capacity of P-450 or in the hydroxylating activities for progesterone and testosterone. The decrease in the hydroxylating activities for steroid hormones in the male rats appear to correlate with the decrease in the content of P-450 and the binding capacity of P-450 with steroid hormones, while the decrease in the female rats is correlated with the decrease in the content of P-450.

8631 MULTIPLICITY AND SPECIFICITY OF UDP-GLUCURONYL TRANSFERASE: II. INFLUENCE OF PHENOBARBITAL AND CHOLESTASIS ON THE ACTIVITY OF GLUCURONYL TRANSFERASE AND BETAGLUCURONIDASE IN RAT LIVER. *(E.)* Okolicsanyi, L. (Canton Hosp., Lausanne, Switzerland), J. Frei and P. Magnenat. *Enzymol Biol Clin* 11(5):402-411, 1970.

The effect of phenobarbital treatment on liver glucuronyl transferase was determined with different substrates in Wistar and in Gunn rats and in common bile duct ligated Wistar rats. After phenobarbital administration for 3 days (30-80 mg/kg/day), the changes of glucuronyl transferase activity were similar with all substrates used (4-methyl umbelliferone, p-nitrophenol and bilirubin), which would support the hypothesis of the existence of a single enzyme for the conjugation of the different substrates. In this experimental study, liver β-glucuronidase activity was similarly estimated, and the modifications of this activity compared with those of the glucuronyl transferase. A significant increase of glucuronyl transferase activity was accompanied by a significant decrease of β-glucuronidase activity in Wistar (cholestatic or not) and in Gunn rats after phenobarbital treatment; a significant increase of β-glucuronidase activity corresponded to a slight (but not significant) decrease of glucuronyl transferase activity in cholestatic Wistar rats.

8632 EFFECTS OF ESTRADIOL, DIETARY CHOLESTEROL AND L-THYROXINE ON BILIARY BILE ACID COMPOSITION AND SECRETORY RATE, AND IN PLASMA, LIVER AND BILE CHOLESTEROL LEVELS IN RATS. *(E.)* Uchida, K. (Shionogi Res. Lab., Osaka, Japan), Y. Nomura, M. Kadowaki, K. Miyata and T. Miyake. *Endocr Jap* 17(2):107-121, 1970.

Biliary bile acid composition and secretory rate, as well as cholesterol concentrations in plasma, liver and bile, were investigated in rats given estradiol for 3 days and for 3 weeks, a 2% cholesterol supplemented diet for 4 to 8 weeks, and L-thyroxine for a week, in order to ascertain the relations between cholesterol concentrations in tissues and bile acid production. Biliary samples collected from control rats during the first 2 hr period of cannulation contained 11 mg bile acid/ml of biliary samples on an average, consisting of 69% cholic acid, 7% hyodeoxycholic acid, 6% deoxycholic acid, 6% α-muricholic acid, 5% chenodeoxycholic acid, 3% unidentified acid and minor percentages of other acids. A 3-day treatment with estradiol caused a decrease in plasma cholesterol and an increase in liver cholesterol, but a 3-week treatment with this steroid significant increased the plasma cholesterol level. Either acute or chronic estradiol treatment caused an increase in chenodeoxycholic acid and its derivatives in the bile. When rats were fed the cholesterol diet for several weeks, increases in chenodeoxycholi hyodeoxycholic, α-muricholic and lithocholic acids with a concomitant decrease in cholic acid were observed, accompanied by a slight increase of cholesterol in the liver (30%) and plasma (10%). Both liver and plasma cholesterol levels were markedly elevated by giving cholesterol and sodium cholate simultaneously. L-Thyroxine treatment caused no change in plasma cholesterol level but increased chenodeoxycholic acid formation to provide a biliary bile acid composition similar to that of the rats treated with estradiol or cholesterol diet. Estradiol, cholester or L-thyroxine treatment appears to increase chenodeoxycholic acid formation which seems to be related to an increase in liver cholesterol levels but not to the change in plasma cholesterol level.

8633 EFFECTS OF ETHANOL ON FREE COENZYME A, FREE CARNITINE AND THEIR FATTY ACID ESTERS IN RAT LIVER. *(E.)* Bode, C. (Dept. Med., Marburg, Germany), E. Stahler, H. Kono and H. Goebell. *Biochim Biophys Acta* 210(3):448-453, 1970.

In order to elucidate the mechanism of alcohol-induced hepatic fatty acid accumulation, the effect ethanol on CoA, carnitine and their fatty acid esters in the liver was investigated. A single dose of ethanol (5 g/kg) increased CoA concentration (from 171 to 268 nmoles/g liver) in rats kept on a standard diet. Two hr following the administration of ethanol, the ratio of long chain acyl-CoA free CoA remained nearly unchanged (0.5) as compared to control animals. After 12 hr, when liver triglycerides were markedly elevated, this ratio shifted distinctly in favor of the long chain acyl-CoA (from 0.7 to 1.2, resp.). In protein-deficient rats the long chain acyl-CoA content in the liver increased markedly as compared to controls given a standard diet (from 197 to 334 nmoles/g liver), while the level of free CoA dropped (from 85 to 29 nmoles/g liver, resp.). Under these conditions,

ute ethanol application resulted in extremely
gh long chain acyl-CoA levels, with the ratio of
ng chain acyl-CoA/free CoA increasing from 2.1 to
.4. After ethanol administration, carnitine con-
ntration altered in a similar way to CoA concen-
ation (from 173 to 334 nmoles/g liver, resp.).
wever, the increase of long chain acyl-carnitine
s much less pronounced than the increase of acyl-
A, and the ratio of long chain acyl-carnitine/free
rnitine showed minor alterations during ethanol
idation. Apparently, under conditions in which
anol-induced lipid accumulation in the liver was
served, fatty acid synthesis was reduced by a nega-
ve feedback inhibition of the acetyl-CoA carboxy-
se reaction by high levels of long chain acyl-CoA.
infiltration in the liver after acute ethanol
inistration seems to be caused by enhanced mo-
lization of free fatty acids from adipose tissue
not by stimulation of fatty acid synthesis in
liver.

34 BIOCHEMICAL STUDIES ON THE INFLUENCE ON
DIFFERENT CHOLERETICS UPON SOME UNSPECIFIC
YMES AND UPON ENZYMES OF THE AMINO ACID METABOLISM
RAT LIVER. *(Ger.)* Moritz, K. U. (Inst. Pharma-
. Toxic, Ernst Moritz Arndt U., Greifswald,
many) and A. Grisk. *Acta Biol Med German* 24(5):
-394, 1970.

effect of dehydrocholic acid, p-hydroxyphenylsa-
ylamide, L-phenylpropanol and hydroxyethyl nor-
ene acid succinate on hepatic enzymes was inves-
ated. These choleretics (100 mg/kg dissolved in
pylene glycol) were administered intraduodenally
anesthetized rats and the levels of the following
ymes were determined in liver and, partly, in
um, 30 min and 2 hr after a single administration,
er one administration/day for 14 days: glutamate
uvate transaminase, glutamate oxalate transaminase,
osine α-ketoglutarate transaminase, L-amino acid
dase, glutamate dehydrogenase, histidase, non-
cific alkaline phosphatase, acid phosphatase,
linesterase and lipase. Hepatic glutamate pyru-
transaminase was the only transaminase which
wed marked reduction, from 1218 U to 867 U after
inistration of dehydrocholic acid, and to 750 U
er administration of hydroxyethyl norbornene
succinate; normal values were seen after 2 hr,
after 14 days. Serum levels of glutamate pyru-
transaminase increased 80 to 100 times after
inistration of these two choleretics. Values
hepatic glutamate dehydrogenase were reduced
bout half of those of controls, after adminis-
ion of dehydrocholic acid, p-hydroxyphenyl-
cylamide and hydroxyethyl norbornene acid suc-
ate, while serum levels simultaneously increased
zero to a maximum of 0.483 U. Hepatic histi-
was greatly reduced, to less than 50% of the
, 30 min and 2 hr after administration of L-
ylpropanol and hydroxyethyl norbornene acid
inate. Hepatic acid and alkaline phosphatase
eased 2 to 4-fold after administration of hy-
yethyl norbornene acid succinate, and neither
nalectomy nor pre-treatment with actinomycin
fected these results. All the choleretics ex-
L-phenylpropanol effected a variable reduction
epatic cholinesterase during the entire experimental period and simultaneously increased serum levels.

8635 BIOCHEMICAL MECHANISMS PRODUCING HEPATIC STEATOSIS DUE TO NUCLEOTIDE IMBALANCE. *(Ger.)* Marchetti, M. (Inst. Biochem., U. Bologna, Italy) and G. Moruzzi. *Schweiz Med Wschr* 100(40): 1703-1706, 1970.

Orotic acid, ethionine, 4-aminopyrazolopyrimidine and azaserine were administered to groups of 6 rats, and the mechanisms leading to steatosis of the liver were investigated. Total hepatic lipid increased in all groups 2-2.5 times above control values, due mainly to accumulation of neutral fat (25.1 mg/g liver for control and 78-117 for experimental rats), while cholesterol and phospholipids remained unchanged. Lipogenesis from acetate-^{14}C into total liver lipids decreased significantly in rats fed ethionine, 4-aminopyrazolopyrimidine and azaserine, and increased slightly in rats fed orotic acid. Hepatic protein-bound biotin content was reduced to approximately 64%, 53%, 48% and 78% of the norm with orotic acid, ethionine, 4-aminopyrazolopyrimidine and azaserine, resp; a similar decrease was found in pyridine coenzyme content. A marked reduction of the ATP content from the control value of 1250 to 430 nmole/g liver with orotic acid, 250 nmole/g liver with ethionine, 760 nmole/g liver with azaserine was seen. The increase of ATP to 1907 nmole/g liver with 4-aminopyrazolopyrimidine may have been caused by diminished utilization. Administration of adenine did not affect the total lipid content of controls but restored that of orotic acid- and ethionine-treated rats to the norm, and greatly reduced the values in 4-aminopyrazolopyrimidine- and azaserine-treated rats. Adenine administration slightly increased hepatic lipogenesis and ATP content of controls and restored the corresponding values of experimental animals to normal or nearly normal levels. Electrophoretic investigations showed a clear reduction of serum lipoprotein fractions in experimental rats, indicating that accumulation of hepatic fat was caused by diminished secretion of lipids into the blood, which in turn may be caused by diminished content or by utilization of hepatic ATP-nucleotides.

8636 RIBONUCLEOTIDE REDUCTASE AND CELL PROLIFERATION: I. VARIATIONS OF RIBONUCLEOTIDE REDUCTASE ACTIVITY WITH TUMOR GROWTH RATE IN A SERIES OF RAT HEPATOMAS. *(E.)* Elford, H. L. (Duke U. Med Ctr., Durham, N. C.), M. Freese, E. Passamani and H. P. Morris. *J Biol Chem* 245(20):5228-5233, 1970.

The relation between ribonucleotide reductase and tumor growth rate was measured in a series of rat hepatomas of different growth rates, and an excellent correlation was found between tumor growth rate and the specific activity of ribonucleotide reductase. Differences of 200-fold in enzyme specific activities existed between very fast and slow growing hepatomas. No activity was detected in either normal rat liver or liver from a tumor-bearing animal although 1/500 of the enzyme level in the rapid tumor could have been detected. The thioredoxin-thioredoxin reductase complex which served as the hydrogen donor for this reaction was eliminated as a contributory factor for these differences in activities because this complex was found at comparable levels in both fast growing tumor and normal liver extracts. Two other enzymes involved in deoxyribonucleotide synthesis, thymidylate synthetase and thymidine kinase, were less markedly enhanced with only 15-20-fold and 40-fold differences, resp., between the slow and fast growing tumors. The ribonucleotide reductase reaction seems to be a rate-limiting step in DNA synthesis and cell division, and enzyme synthesis and degradation may be involved in control of this reaction.

8637 PRODUCTION OF HEPATOMAS IN SUCKLING MICE AFTER SINGLE APPLICATION OF β-PROPIOLACTONE.

(E.) Warwick, G. P. (Chester Beatty Res. Inst., London, England) and I. N. Chernozemski. *J Natl Cancer Inst* 45(4):709-717, 1970.

The toxic and carcinogenic effects of β-propiolactone were studied in adult and suckling, male and female mice. Animals given i.p. injections of 10 and 20 mg of β-propiolactone died within 24 hr; mice given 5 mg of β-propiolactone were less active, listless and over 50% of them also died within 24 hr. Animals given 2 mg of β-propiolactone appeared normal and all survived 24 hr after treatment; most survivors died with malignant lymphoma at 6-8 months after injection. Intraperitoneal injection of β-propiolactone (0.1 mg/g body weight) into mice on the 8th-10th day after birth, produced an average of 2 hepatomas per animal in 65% of males 16 months after treatment; in adult mice and controls, hepatoma incidence was 9 and 4-6.7%, resp. β-Propiolactone applied once to skin of suckling mice produced hepatomas in 19.4% of the animals. Treated female mice developed few hepatomas (16-20% bore malignant lymphomas; 5.5% in controls). Microscopic examination showed that hepatomas were trabecular or solid, but without metastases at sites other than the liver.

8638 EFFECT OF ALCOHOL ON THE LIVER OF RATS. III. THE ROLE OF LIPID PEROXIDATION AND SULFHYDRYL COMPOUNDS IN ETHANOL-INDUCED LIVER INJURY.

(E.) Takada, A. (Sch. Med., Kanazawa U., Japan), F. Ikegami, Y. Okumura, Y. Hasumura, R. Kanayama and J. Takeguchi. *Lab Invest* 23(4):421-428, 1970.

The effects of a single administration of ethanol (1.5 g/100 g) to rats on serum ornithine carbamoyl transferase activities, hepatic malondialdehyde production, and reduced glutathione contents were studied to elucidate the role of lipid peroxidation and sulfhydryl compounds on the development of liver injury by alcohol. Serum ornithine carbamoyl transferase activity was elevated only in choline-deficient rats and was accompanied by an increase in hepatic malondialdehyde production and a decrease in hepatic reduced glutathione content after alcohol administration. Elevation of serum ornithine carbamoyl transferase activity was found in the rats showing a high malondialdehyde/reduced glutathione ratio in the liver, with few exceptions. In vitamin E-deficient rats which had very high values of hepatic malondialdehyde production before alcohol administration, an increase in hepatic triglycerides was observed without any accompanying change in hepatic malondialdehyde production and serum ornithine carbamoyl transferase level after alcohol administration. In one of six rats fed a low cystine diet, an elevation of serum ornithine carbamoyl transferase activity after alcohol administration was observed accompanied by a marked reduction in hepatic reduced glutathione content. Increases in hepatic malondialdehyde production after alcohol administration to the choline-deficient rats were inhibited by simultaneous administration of vitamin E, whereas decreases in hepatic reduced glutathione were inhibited by simultaneous administration of reduced glutathione; elevations of serum ornithine carbamoyl transferase activity were inhibited by simultaneous administration of both vitamin E and reduced glutathione. A combination of disturbances in lipid peroxidation and reduced glutathione metabolism in the liver might be responsible for the development of severe liver injury by alcohol.

8639 CHANGES IN THE FINE STRUCTURE OF RAT HEPATOCYTES DURING THE EARLY PHASES OF CHRONIC 2-ACETYLAMINOFLUORENE INTOXICATION.

(E.) Flaks, B. (U. Bristol Med. Sch., England). *Chem Biol Interaction* 2(2):129-150, 1970.

Alterations in the fine structure of rat hepatocytes induced by a diet containing 0.05% of 2-acetylaminofluorene were studied in rats killed after 7-10 days 3-4 weeks and 8-12 weeks of carcinogen treatment. 2-Acetylaminofluorene caused glycogen depletion, proliferation of the agranular endoplasmic reticulum reduction in the quantity and morphological alterations of the granular endoplasmic reticulum, progressive hypertrophy of the Golgi apparatus with an associated increase in lysosomal abundance and, during the later stages of treatment, a reduction in mitochondrial size, but no visible nuclear change Changes affecting the plasma membrane were also observed, including dilatation of the bile canaliculi. Some of the observed changes appeared to be related to those previously observed in preneoplastic liver cells and hepatoma cells of 2-acetylaminofluorene-treated rats and may, therefore, be related to the carcinogenic activity of 2-acetylaminofluorene.

8640 Cd^{++}, Mn^{++} AND Zn^{++} INDUCED SYNTHESIS OF NUCLEAR RNA IN THE LIVERS OF NORMAL AND ADRENALECTOMIZED RATS.

(E.) Weser, U. (Physiol. Chem. Inst. U. Tubingen, Germany) and L. Hubner. *FEBS Letters* 10(3):169-174, 1970.

8641 SEGMENTS OF 28 S RNA PROTECTED FROM PANCREATIC RIBONUCLEASE BY INTERACTION WITH RIBOSOMAL PROTEINS.

(E.) Petrovic, S. (Boris Kidrich Inst., Beograd, Yugoslavia) and B. Brkic. *Biochim Biophys Acta* 217(1):95-107, 1970.

8642 FUNCTIONAL DIFFERENCES IN PROTEIN SYNTHESIS BETWEEN FREE AND BOUND POLYSOMES OF RAT LIVER. *(E.)* Takagi, M. (Fac. Agric., U. Tokyo, Japan), T. Tanaka and K. Ogata. *Biochim Biophys Acta* 217(1):148-158, 1970.

8643 SOME PROPERTIES OF AN ALKALINE DEOXYRIBONUCLEASE FROM REGENERATING RAT LIVER. *(E.)* O'Connor, P. J. (Christie Hosp., Manchester, England) and S. R. Ayad. *Biochim Biophys Acta* 217(1):56-63, 1970.

8644 THE EFFECT OF AN INHIBITOR OF CHOLESTEROL BIOSYNTHESIS (AY-9944) ON LIVER, SERUM AND BRAIN STEROLS OF YOUNG CHICKS. *(E.)* Lupien, P. J. (Fac. Med. U. Laval, Montreal, Quebec, Canada) and G. B. Martin. *Rev Canad Biol* 28(2):101-109, 1970.

8645 INHIBITION OF HEPATIC PROTEIN SYNTHESIS BY α-METHYL-DL-TRYPTOPHAN *IN VIVO*: FURTHER STUDIES ON THE GLYCONEOGENIC ACTION OF α-METHYLTRYPTOPHAN. *(E.)* Oravec, M. (U. Sussex Sch. Biol. Sci., Falmer, England) and T. L. Sourkes. *Biochemistry* 9(22):4458-4464, 1970.

8646 UTILIZATION OF DIACYLGLYCEROL SPECIES BY CHOLINE PHOSPHOTRANSFERASE, ETHANOLAMINE PHOSPHOTRANSFERASE AND DIACYLGLYCEROL ACYLTRANSFERASE IN RAT LIVER MICROSOMES. *(E.)* De Kruyff, R. (Dept. Biochem., St. U. Utrecht, Netherlands), L. M. G. Van Golde and L. L. M. Van Deenen. *Biochim Biophys Acta* 210(3):425-435, 1970.

8647 INSECTICIDE SYNERGIST INTERACTIONS WITH CYTOCHROME P-450 IN MOUSE LIVER MICROSOMES. *(E.)* Mathews, H. B. (Natl. Inst. Environ. Hlth. Serv., Triangle Park, N. C.), M. Skrinjaric-Spoljar and J. E. Casida. *Life Sci* 9(18);1039-1048, 1970.

8648 SELECTIVE BINDING OF CADMIUM *IN VIVO* ON METALLOTHIONEIN IN RAT LIVER. *(E.)* Wisniewski-Knypl, J.M. (Lodz, Poland) and J. Jablonska. *Bull Acad Pol Sci* 18(6):321-327, 1970.

8649 INVESTIGATION OF THE COMPONENT REACTIONS OF OXIDATIVE STEROL DEMETHYLATION: OXIDATION OF A 4,4-DIMETHYL STEROL TO A 4β-METHYL-4α-CARBOXYLIC ACID DURING CHOLESTEROL BIOSYNTHESIS. *(E.)* Miller, W. L. (Grad. Sch. Nutr., Cornell U., Ithaca, N. Y.) and J. L. Gaylor. *J Biol Chem* 245(20):5375-5381, 1970.

8650 BILIRUBIN AND PARA-NITROPHENOL GLUCURONYL TRANSFERASE ACTIVITIES: A COMPARATIVE TUDY. I. EFFECTS OF SUBACUTE ALCOHOL POISONING N NORMAL AND PARTIALLY HEPATECTOMIZED RATS. *(Fr.)* Hakim, J. (Hosp. Beaujon, Clichy, France), G. Feldmann, H. Troube, J. Boucherot and P. Boivin. *Path Biol* 18(11-12-13-14):627-633, 1970.

8651 EFFECT OF MONOVALENT CATIONS ON THE DISSOCIATION OF RAT LIVER RIBOSOMES. PROPERTIES OF SUBUNITS. *(Fr.)* Reboud, A. M. (Fac. Sci. Villeurbanne, France), J. P. Reboud, C. Wittmann and M. Arpin. *Biochim Biophys Acta* 213(2):437-450, 1970.

8652 EFFECT OF CIRCADIAN RHYTHM ON MITOTIC INDEX DURING LIVER REGENERATION. *(Fr.)* Barbason, H. R. (Lab. Anat. Path., U. Liege, Belgium). *C R Acad Sci* 270(26):3295-3298, 1970.

8653 ELECTRON MICROSOPY OF ALCOHOL-INDUCED ALTERATIONS AND THEIR SIGNIFICANCE IN LIVER FUNCTION. *(Ger.)* Rubin, E. (Mt. Sinai Sch. Med., New York, N.Y.). *Therapiewoche* 20(39):2291, 1970.

8654 INVESTIGATION OF THE COMPONENT REACTIONS OF OXIDATIVE STEROL DEMETHYLATION: OXIDATION OF A 4α-METHYL STEROL TO A 4α-CARBOXYLIC ACID DURING CHOLESTEROL BIOSYNTHESIS. *(E.)* Miller, W. L. (Grad. Sch. Nutr., Cornell U., Ithaca, N. Y.) and J. L. Gaylor. *J Biol Chem* 245(20):5369-5374, 1970.

8655 SYNTHESIS AND ACCUMULATION OF POLYAMINES IN REGENERATING RAT LIVER. *(E.)* Raina, A. (Dept. Med. Chem., U. Helsinki, Finland), J. Janne, P. Hannonen and E. Holtta. *Ann N Y Acad Sci* 171(3):697-708, 1970.

8656 EFFECT OF AGE ON PROTEIN SYNTHESIS IN CELL-FREE MICROSOMAL RAT LIVER FRACTIONS. *(Fr.)* Schmitt, G. (Strasbourg, France), C. Mialhe and F. Stutinsky. *C R Acad Sci* 271(9):791-794, 1970.

8657 INCREASE IN ACID-STABLE RIBONUCLEASE ACTIVITY IN FASTED RAT LIVER. *(E.)* Sheppard, E. P. (Fac. Med., Mem. U. Newfoundland, St. John's, Canada), K. Hogan and K. B. Roberts. *Biochim Biophys Acta* 217(1):159-163, 1970.

8658 ENHANCED INITIATION OF RNA CHAINS IN LIVER AFTER ADMINISTRATION OF 3-METHYLCHOLANTHRENE. *(E.)* Bresnick, E. (Baylor Coll. Med., Houston, Tex.). *Biochim Biophys Acta* 217(1):204-206, 1970.

8659 EFFECTS OF HISTAMINE AND PHENIRAMINE MALEATE ON PROTEASE ACTIVITY IN SHEEP LIVER HOMOGENATES. *(E.)* Kesava Rao, K. V. (Dept. Zool., Sri Venkateswara U., Andhra Pradesh, India), N. V. Nanda Kumar and K. S. Swami. *Enzymologia* 39(3):145-150, 1970.

8660 ETHANOL METABOLISM. *(Ger.)* Forsander, O. A. (Res. Dept., St. Alcohol Monopoly, Helsinki, Finland). *Therapiewoche* 20(39):2261-2264, 1970.

8661 TURNOVER OF HEME AND PROTEIN MOIETIES OF RAT LIVER MICROSOMAL CYTOCHROME b_5. *(E.)* Bock, K. W. (Dept. Cell Biol., Rockefeller U., New York, N.Y.) and P. Siekevitz. *Biochem Biophys Res Commun* 41(2):374-380, 1970.

8662 WARFARIN AND VITAMIN K ACCELERATE PROTEIN AND GLYCOPROTEIN SYNTHESIS IN ISOLATED RAT LIVER MITOCHONDRIA *IN VITRO*. *(E.)* Bernacki, R. J. (U. Rochester Sch. Med. Dent., New York) and H. B. Bosmann. *Biochem Biophys Res Commun* 41(2):498-505, 1970.

8663 REGULATION OF KEY HEPATIC GLYCOLYTIC ENZYMES. *(E.)* Dakshimamurti, K. (Dept. Biochem., U. Manitoba, Winnipeg, Canada) and H. C. Hong. *Enzymol Biol Clin* 11(5):423-428, 1970.

8664 EFFECT OF ACETOACETATE AND KETOGENIC AMINO ACIDS ON THE ACTIVITY OF TYROSINE ALPHA KETOGLUTARATE TRANSAMINASE IN RAT LIVER. *(E.)* Bhai, I. (U. Dept. Biochem., Nagpur, India) and M. C. Nath. *Enzymologia* 39(2):87-95, 1970.

8665 ACETYLCHOLINE CONTROL OF GLUCONEOGENESIS IN ISOLATED PERFUSED RAT LIVER. *(It.)* Ottolenghi, C. (Inst. Gen. Physiol, U. Ferrara, Italy) and A. Caniato. *Boll Soc Ital Biol Sper* 46(1):8-11, 1970.

8666 EFFECT OF ETHANOL ADMINISTRATION ON RAT LIVER ENZYME ACTIVITIES. *(It.)* Brighenti, L. (Inst. Physiol, Gen., U. Ferrara, Italy) and G. Pancaldi. *Boll Soc Ital Biol Sper* 46(1):1-5, 1970.

8667 EFFECT OF ALCOHOL ON DRUG METABOLISM. *(Ger.)* Schuppel, R. (Inst. Toxicol., U. Tubingen, Germany). *Therapiewoche* 20(39):2319-2322, 1970.

8668 SEASONAL VARIATIONS OF SUBSTRATE AND COFACTOR CONCENTRATIONS IN RAT LIVER. *(Fr.)* Lowy, R. (I.N.S.E.R.M., Paris, France), G. Griffaton and P. Baron. *Arch Sci Physiol* 24(2):109-123, 1970.

8669 ALCOHOL DEGRADATION AND LIPID METABOLISM. *(Ger.)* Scheig, R. (Yale U. Sch. Med., New Haven, Connecticut). *Therapiewoche* 20(39):2272-2275, 1970.

8670 ON THE LOSS OF REDUCED AND OXIDIZED NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE ADDED TO SUSPENSIONS OF RAT LIVER. *(E.)* Jocelyn, P. C. (Dept. Biochem., U. Edinburgh, Scotland). *Enzymologia* 39(3):183-192, 1970.

8671 FURTHER EVIDENCE FOR TWO TYPES OF ADDUCTS OF N-HYDROXY-2-FLUORENYLACETAMIDE WITH RAT-LIVER PROTEINS. *(E.)* Barry, E. J. (VA Hosp., Minneapolis, Minn.) and H. R. Gutmann. *Chem Biol Interaction* 2(2):158-159, 1970.

8672 A STIMULATED RATE OF GLUCONEOGENESIS IN PERFUSED LIVERS OF HYPOPHYSECTOMIZED RATS *(E.)* Tolman, E. L. (Milton S. Hershey Med. Ctr., Pennsylvania St. U., Hershey), L. E. Metzger and L. S. Jefferson. *Biochem Biophys Res Commun* 41(2): 294-298, 1970.

8673 BARBITURATES AND THE LIVER. *(Ger.)* Franken, F. H. (2nd Med. Clin. Polyclin. U. Dusseldorf, Germany) and W. Hagelskamp. *Deutsch Med Wschr* 95(31):1613-1616, 1970.

8674 CHANGES IN THE RESPIRATION OF RAT LIVER MITOCHONDRIA IN PROLONGED HYPOKINESIA. *(Rus.)* Grinberg, L. N. (no affil). *Vop Med Khim* 16(4):387-390, 1970.

8675 STUDIES ON THE INDAZOLE SERIES. II. CHOLERETIC ACTIVITY OF SOME INDAZOLE DERIVATIVES. *(Fr.)* Granger, R. (Fac. Pharm. Montpellier, France), J. Koeberle, Le Hao-Dong, M. Boucard, J. J. Giroux, J. Mizoule, and D. Yavordios. *Chim Ther* 5(4):250-254, 1970.

8676 OXIDATIVE PHOSPHORYLATION IN RAT LIVER MITOCHONDRIA UNDER BIOTIN DEFICIENCY. *(Fr.* Busuioc, A. (Inst. Med., Iasi, Rumania), L. Raileanu L. Ababei. *Acta Vitamin* 24(1-2):7-10, 1970.

8677 CONTRAST MEDIA IN RADIOLOGY: XVII. METABOLISM OF A NEW COMPOUND USED IN ORAL CHOLECYSTOGRAPHY. *(Fr.)* Pitre, D. (Bracco Indust. Chem., Milan, Italy) and L. Fumagalli. *Chim Ther* 5(3):185-187, 1970.

8678 INHIBITION OF LIVER CARCINOGENESIS IN ADRENALECTOMIZED C3Hf MICE. *(It.)* Symeoni A. (Inst. Path. Aristotle U., Thessalonica, Greece). *Minerva Med* 61(34):1863-1868, 1970.

8679 HYPERBILIRUBINEMIA IN WISTAR AND HETEROZYGOUS GUNN RATS: EFFECT OF PHENOBARBITAL. *(Fr.)* Christoforov, B. (I.N.S.E.R.M., Paris, France R. Deraedt, A. Foliot and J. P. Petite. *Path Biol* 18(11-12-13-14):663-667, 1970.

8680 ELECTROPHORETIC CHANGES AFTER PARTIAL HEPATECTOMY AND AFTER BLOCKING OF RETICULO-HISTIOCYTE SYSTEM. *(It.)* Gerardi, R. (Clin. Surg. Pediat., U. Catania, Italy). *Riv Chir Pediat* 11(4 bis):487-499, 1970.

8681 CHANGES IN RAT LIVER TRANSFER RNA FOLLOWING GROWTH HORMONE ADMINISTRATION AND IN REGENERATING LIVER. *(E.)* Jackson, C. D. (U. Tennessee Med. Units, Memphis), C. C. Irving and B. H. Sells. *Biochim Biophys Acta* 217(1):64-71, 1970.

8682 EFFECT OF CHOLINE OROTATE ON EXPERIMENTAL FATTY LIVER IN RATS. *(Ger.)* Petzold, H. (Med. Clin. Karl Marx U., Leipzig, Germany), H. Storch and R. Hohlfeld. *Z Ges Inn Med* 25(15):697-700, 1970.

8683 CHEMICAL CARCINOGENESIS OF RAT LIVER: MORPHOLOGICAL DEFINITION OF A "PRECANCEROUS" STAGE. *(Fr.)* Sigot-Luizard, M. F. *C R Acad Sci* 270(25):3170-3172, 1970.

8684 ESTABLISHMENT OF A TRANSPLANTABLE ASCITES VARIANT OF A RAT HEPATOMA INDUCED BY 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE. *(E.)* Smith, D. F. (U. Texas M.D. Anderson Hosp. Tumor Inst., Houston), E. F. Walborg, Jr. and J. P. Chang. *Cancer Res* 30(9):2306-2309, 1970.

- P:Morph (8505)(8509)(8511)(8512)(8514)(8518)(8519)(8520)(8521)(8525)(8533)(8534)(8535)(8541)(8546)
- P:Absorp (8562)(8570)
- P:Secr:Panc (8601)
- P:Gen (8696)
- D:Livbil (9040)(9041)(9043)(9046)(9086)(9090)(9092)
- D:Livbil:A.Nonv.Hep (9094)(9095)(9110)(9111)(9112)(9113)
- D:Livbil:Cirrh (9154)
- D:Livbil:Gallb (9187)

SECRETION AND METABOLISM

Intestine

8685 BIOSYNTHESIS OF LOW DENSITY LIPOPROTEIN BY CELL-FREE PREPARATIONS OF RAT INTESTINAL MUCOSA. *(E.)* Kessler, J. I. (McGill U. Clin., Montreal, Quebec, Canada), J. Stein, D. Dannacker and P. Narcessian. *J Biol Chem* 245(20):5281-5288, 1970.

The capacity of cell-free preparations of rat small intestinal mucosa prelabeled with palmitate-1-^{14}C to synthesize and release lipoproteins was investigated. Whole homogenate, mitochondria, and microsomes were incubated in fortified media containing ^{3}H-labeled amino acids, and lipoproteins of various densities were separated, after the addition of carrier rat plasma, by density centrifugation, by polyanion precipitation, and by immunoprecipitation. All fractions incorporated radioactivity into the lipid and protein moieties of the medium lipoproteins, but the microsomal fraction accounted for most of the activity of the whole homogenate. Presence of postmicrosomal supernatant or pH 5 fraction, GTP, ATP, and ATP-generating system was essential for optimal activity of the microsomal fraction. The identity of microsomal and medium low density lipoprotein with that of plasma medium low density lipoprotein was demonstrated by immunoelectrophoresis, double immunodiffusion, and peptide mapping. The cellular equivalent of the microsomal fraction may be the major site of synthesis and association of the lipid and protein moieties of medium low density lipoproteins; the intestinal mucosa may contribute significantly to the level of plasma medium low density lipoprotein and be of central importance in the transport of exogenous and endogenous lipid.

8686 1-^{14}C-GLUCOSAMINE INCORPORATION BY SUBCELLULAR FRACTIONS OF SMALL INTESTINE MUCOSA: IDENTIFICATION BY PRECURSOR LABELING OF THREE FUNCTIONALLY DISTINCT GLYCOPROTEIN CLASSES. *(E.)* Forstner, G. G. (Inst. Med. Sci., U. Toronto, Ontario, Canada). *J Biol Chem* 245(14):3584-3592, 1970.

Mucin synthesis by the small intestine was studied in rats by following the incorporation of 1-^{14}C-glucosamine into acid-precipitable lipid-free material (glycoprotein) from intestinal mucosal subfractions and from the intestinal lumen. Following injection of 1-^{14}C-glucosamine *in vivo*, specific radioactivity peaks were obtained in the glycoprotein hexosamine of the microsomes at 30 min, the mitochondria at 60 min, the brush border at 90 min, and luminal secretions at 150 min; the most highly labeled hexosamine fractions were found in brush border and luminal glycoproteins after 90 min. Incubation *in vitro* of intestinal slices derived from rats labeled *in vivo* with 1-^{14}C-glucosamine indicated that the highly labeled luminal glycoprotein was derived from mitochondrial and cell sap compartments. A probable precursor of the highly labeled luminal glycoprotein has been identified in the cell sap by column chromatography on Sepharose 4B. The low specific radioactivity of cell sap glycoprotein hexosamine resulted from the presence of a poorly labeled glycoprotein of large molecular weight which has been separated from the highly labeled glycoprotein in the cell sap by Sepharose 4B chromatography. It contained approximately 69% of the hexosamine in cell sap glycoproteins and did not appear in intestinal secretions; this relatively inert glycoprotein may represent structural polysaccharide or storage mucus.

8687 INTESTINAL SECRETION OF IMMUNOGLOBULINS AND ANTIBODIES TO *ESCHERICHIA COLI* IN THE PIG. *(E.)* Porter, P. (Unilever Res. Lab., Bedford, England), D. E. Noakes and W. D. Allen. *Immunology* 18(6):909-920, 1970.

The secretion of specific immunoglobulins (Ig) and antibodies against *E.coli 0141* were studied in intestinal secretions obtained from Thiry Vella loops prepared in the midjejunum of 4 young pigs. The molecular size of specific immunoglobulins were measured by gel filtration and sucrose density gradent ultra-centrifugation, and immune inhibition studies with rabbit antisera specific for IgG, IgA, and IgM were done using hemagglutination techniques. Comparative studies of the intestinal secretions from the four animals (using thin layer Sephadex G200 gel filtration) showed that the intestinal IgM had 7S characteristics and the intestinal IgA had mostly 11S characteristics, similar to secretory IgA isolated in porcine milk. The immune inhibition studies with rabbit anti-IgA-globulin resulted in elimination of *E.coli 0141* antibodies (detected by direct hemagglutination); in one animal incomplete antibody (assayed by antiglobulin hemagglutination) was identified in the fractions associated with IgM and IgG. *E.coli* antibodies in intestinal secretions detected by direct hemagglutination were entirely associated with IgA; however IgM and IgG were also present in significant amounts.

8688 FERRITIN PRODUCTION IN THE RAT SMALL INTESTINE. *(E.)* Bernier, G. M. (Walter Reed Army Inst. Res., Washington, D.C.), S. G. Schade and M. E. Conrad. *Brit J Haemat* 19(3):361-367, 1970.

Several variables affecting *de novo* synthesis of ferritin in the rat intestine were studied using a specific anti-rat ferritin antiserum. Significant ferritin synthesis (measured by ^{14}C-amino acid incorporation) was evoked by a 150 μmole p.o. dose of iron in animals pretreated with similar doses of oral iron 3 and 6 hr before the test dose. Cobalt, a cation absorbed by the intestine in a fashion similar to iron, did not stimulate ferritin synthesis. Parenteral and p.o. iron administration produced different effects on various small intestinal segments. P.o. iron induced synthesis chiefly in the proximal small intestine while i.v. iron stimulated synthesis dominantly in the terminal ileum. Ferritin appears to function chiefly as a barrier to excess iron absorption and as an important mechanism for iron excretion.

8689 QUANTIFICATION OF INTESTINAL FUNCTIONS DURING FASTING: ESTIMATIONS OF BILE SALT TURNOVER, FECAL CALCIUM AND NITROGEN EXCRETIONS. *(E.)* Stanley, M. M. (U. Illinois Coll. Med., Chicago). *Metab Clin Exp* 19(10):865-875, 1970.

Quantification of overall intestinal functions was carried out under fasting conditions by feeding methylcellulose (which resulted in normal daily stool flow) to obese patients. During starvation, turnover and excretion of ^{14}C-cholate and its metabolites, and excretion of stable bile salts fell to very low levels and remained depressed for at least 16 days, the most prolonged interval observed. The prefasting level of excretion was promptly resumed when feeding at the same rate was resumed. During fasting periods single feedings of 25 and 50 g of egg albumin and 25 g corn oil did not increase bile salt excretion and turnover. Consumption of a 1000 calorie mixed diet during one day was followed by a transient increase in excretion. Administration of cholestyramine, 12 g/day, in separate 1-and 3-day courses, produced marked increases in excretion over those during fasting control periods preceding and following. During fasting, bile salts were demonstrated in the duodenal lumen contents. In three persons whose starvation regiments were interrupted by feeding of mixed diets of different calorie content, the excretion rates of bile salts were proportionate to the corresponding quantities of food consumed. The method seems to be a satisfactory one for assaying comparative effects of various single foods and medications upon the turnover of bile salts, and of fecal excretion of other substances such as calcium and nitrogen.

8690 THE EFFECT OF ACTINOMYCIN D ON RAT INTESTINE. *(E.)* Pugh, D. (Zool. Dept. U. Southampton, England). *Ann Histochim* 18(2): 113-118, 1970.

The effect of actinomycin D on rat intestine was investigated. In rats killed 20 hr after administration of antibiotic (0.25 μg/g body weight i.p., single dose) the intestinal epithelium was unchanged compared with that of control animals but there was marked edema of the connective tissues. Autolysis of rat intestinal mucosa, which occurs rapidly after death, was prevented by pretreatment with actinomycin D. Incubation of intestine *in vitro* without essential ions by using sodium chloride solution or by adding EDTA to Ringer solution reduced autolysis while incubation of intestine from treated rats in saline without further antibiotic allowed autolysis to proceed. Actinomycin D may inhibit metal ion utilization and lack of autolysis may be due to changes occurring in cell membranes which prevent water and ion transport into the epithelial cells; it seems unlikely that RNA dependent processes are involved.

8691 THE FATTY ACID PATTERN IN HUMAN INTESTINAL MUCOSA. *(Ger.)* Berg, G. (Med. Clin. Polyclin., U. Erlangen-Nuremberg, Germany) and U. Troll. *Z Ernaerungswiss* 10(1):89-91, 1970.

8692 SOME PROPERTIES OF PHOSPHODIESTERASE I FROM MICROSOMES OF RAT INTESTINAL MUCOSA. *(E.)* Hynie, I. (Dept. Biochem., U. British Columbia, Vancouver, Canada) and S. H. Zbarsky. *Canad J Biochem* 48(10):1151-1159, 1970.

8693 COMPONENTS OF DUODENAL MUCOSA INFLUENCING INSULIN SECRETION. *(Fr.)* Hadjikhani, H. (Med. U. Clin. Lausanne, Switzerland), J. Fasel and J. P. Felber. *Schweiz Med Wschr* 100(24):1005-1009, 1970.

8694 EFFECT OF TOTAL MICROFLORA ON THE MITOTIC ACTIVITY OF LIEBERKUHN'S CRYPTS. *(Fr.)* Guenet, J. L. (no affil), E. Sacquet, G. Gueneau and J. C. Meslin. *C R Acad Sci* 270(25):3087-3090, 1970.

- P:Morph (8502)(8503)(8510)(8513)(8517)(8528) (8542)(8545)(8547)
- P:Absorp (8549)(8550)(8558)(8559)(8560)(8564) (8567)(8570)
- P:Motil (8573)(8579)
- P:Secr:Panc (8597)
- P:Gen (8695)
- D:L.Intest (8958)

GENERAL

8695 *CLOSTRIDIUM PERFRINGENS* AS THE FLORA IN THE INTESTINE OF HEALTHY PERSONS. *(E.)* Akama, K. (Natl. Inst. Hlth., Tokyo, Japan) and S. Otani. *Jap J Med Sci Biol* 23(3):161-175, 1970.

The ecological behavior of *Clostridium perfringens* in the intestine of healthy persons was investigated by using a quantitative method for bacterial count. All the fecal specimens from healthy persons and almost all the contents of the large intestine of corpses contained from 10^1 to 10^9 organisms/g. The heat resistance *C. perfringens* was detected in about half of the fecal specimens heated at 100C for 60 min, and the number were less than 10^6/g of the feces; the resistant organisms seemed to be a permanent inhabitant in some persons. Using the Hobbs' factor sera (Types 1 to 13), the serotypable strains were frequently found among the isolates from the heated specimens, and two or more serological types were often found in single specimens. However, changes in serotypes in a person were observed by repeated examinations. The behavior of *C. perfringens* in the colon and ileum of the corpse were similar to that in fecal specimens from healthy persons, but *C. perfringens* were isolated from the jejunal contents of only 3 out of 12 corpses. All the isolates from jejunum were heat sensitive and three of them were agglutinated by Hobbs' factor sera. The toxinogenicites of the untypable isolates were dependent on the temperature of heating used for isolation, while those of the typable ones varied independently of the temperature.

8696 ON THE VASCULAR ANATOMY OF THE LIVER FOLLOWING PARTIAL HEPATECTOMY IN THE DOG. *(E.)* Aronsen, K. F. (Malmo Gen. Hosp., Sweden), J. G. Norden, G. Nylander, E. G. Ohlsson and B. Pihl. *Acta Chir Scand* 136(5):413-418, 1970.

The vascular anatomy of the liver remnant in 22 dogs subjected to partial hepatectomy was studied by portography and arteriography *in vivo* and macro- and microangiography and the corrosion cast method *ex vivo*. After resection of up to 50% of the liver, rather small changes were seen in the vasculature of the liver remnant during an observation period of 3 months. A constant finding was a stretching and elongation of the vessels throughout the remaining lobes, probably due to outgrowth of the surrounding tissue. The arteriograms of postmortem specimens revealed in lobectomized dogs that the arterial interlobar branches had a straight and regular course while in controls these vessels were tortuous and spiral-formed.

8697 DRUG INDUCED METABOLIC DISORDERS. *(Fr.)* Peters, G. (Inst. Pharmacol., U. Lausanne, Switzerland), F. Roch-Ramel, J. F. Boudry and P. B. Lynedjian. *Ther Umsch* 27(9):594-603, 1970.

8698 ANTAGONISTIC CHANGES OF BLOOD FLOW AND SYMPATHETIC ACTIVITY IN DIFFERENT VASCULAR BEDS FOLLOWING CENTRAL THERMAL STIMULATION: I. BLOOD FLOW IN SKIN, MUSCLE AND INTESTINE DURING SPINAL CORD HEATING AND COOLING IN ANESTHETIZED DOGS. *(E.)* Kullman, R. (Physiol. Inst. U. Giessen, Germany), W. Schonung and E. Simon. *Pflugers Arch* 319(2):146-161, 1970.

8699 THE *IN VITRO* CONVERSION OF BILE PIGMENTS TO THE UROBILINOIDS BY A RAT CLOSTRIDIA SPECIES AS COMPARED WITH THE HUMAN FECAL FLORA: III. NATURAL d-UROBILIN, SYNTHETIC i-UROBILIN AND SYNTHETIC i-UROBILINOGEN. *(E.)* Moscowitz, A. (Dept. Med., U. Minnesota, Minneapolis), M. Weimer, D. A. Lightner, Z. J. Petryka, E. Davis and C. J. Watson. *Biochem Med* 4(2):149-164, 1970.

8700 OBSERVATIONS ON THE EFFECT OF THE REDIAE OF *FASCIOLA HEPATICA* ON THE LIPID COMPOSITION OF THE HEPATOPANCREAS OF *LYMNAEA TRUNCATULA*. *(E.)* Southgate, V. R. (Dept. Zool., Brit. Museum, London, England). *Parasitology* 61(2):293-299, 1970.

8701 INHIBITION OF *SHIGELLA FLEXNERI* BY THE NORMAL INTESTINAL FLORA: III. INTERACTIONS WITH *BACTEROIDES FRAGILIS* STRAINS *IN VITRO*. *(E.)* Hentges, D. J. (U. Missouri Sch. Med., Columbia) and B. R. Maier. *Infect Immun* 2(4):364-370, 1970.

8702 EFFICIENCY OF VARIOUS INTESTINAL BACTERIA IN ASSUMING NORMAL FUNCTIONS OF ENTERIC FLORA AFTER ASSOCIATION WITH GERM-FREE MICE. *(E.)* Syed, S. A. (Dept. Microbiol., U. Michigan, Ann Arbor), G. D. Abrams and R. Freyer. *Infect Immun* (4):376-386, 1970.

o P:Secr:Int (8689
o D:Gen (9224)

DIAGNOSTIC PROCEDURES

8703 THE ANGIOGRAPHIC EVALUATION OF GALLBLADDER DILATATION. *(E.)* Redman, H. C. (Wayne Cty. Gen. Hosp., Eloise, Mich.) and S. R. Reuter. *Radiology* 97(2):367-370, 1970.

The area and maximum width of 25 normal gallbladders and 20 gallbladders in patients with extrahepatic obstructive jaundice (due to pancreatic or biliary carcinoma, cholelithiasis or pancreatitis) were measured; the mean area, width, and standard deviations were determined on the anteroposterior projections of celiac angiograms. The normal gallbladders ranged from 2 to 5 cm in width and from 11 to 33 cm^2 in area; the gallbladders in patients were dilated and ranged 4 to 8 cm in width and 35-67 cm^2 in area. Distended gallbladders also tended to have a slightly greater accumulation of contrast media than those of the normal group.

8704 A RAPID OCCULT BLOOD TEST USING AMIDOPYRINE AS OXYGEN ACCEPTOR. *(E.)* Crossley, G. (Bury Gen. Hosp. Lancashire, England). *J Med Lab Technol* 27(3):340-343, 1970.

A rapid and simple method for the detection of occult blood in the feces using amidopyrine as the oxygen acceptor was described and compared to the Hematest method. Amidopyrine in an acid-alcohol solution applied to a fecal smear on filter paper and followed by hydrogen peroxide produced a purple color within 1 min in a positive test and the sensitivity was decreased by increasing the acetic acid concentration of the amidopyrine solution (optimum sensitivity at 5 g amidopyrine, 100 ml 95% alcohol, and 50 ml 5% acetic acid). Amidopyrine was slightly less sensitive than Hematest (1 less dilution in the doubling dilution series) when compared on simple aqueous blood dilutions, but the results of both methods were closely parallel when fecal samples were used. The amidopyrine method was completely reproducible while Hematest occasionally gave a negative result on the same positive sample.

8705 ANGIOGRAPHIC DIAGNOSIS OF CARCINOMA OF THE PANCREAS. *(Ger.)* Lechner, G. (1st Med. U. Clin. Vienna, Austria), H. Pokieser, W. Zaunbauer and P. Brucke. *Fortschr Roentgenstr* 113(3):340-348, 1970.

The reliability of angiography for the diagnosis of pancreatic carcinoma in 16 patients was evaluated and the relevant literature was reviewed. Thirteen of 16 verified carcinomas of the pancreas were preoperatively diagnosed and one was diagnosed retrospectively. False negative diagnoses were made in 2 patients, and false positive diagnoses were made in 2 patients. Surgery of the latter 2 patients revealed a chronic fibrous pancreatitis, and normal pancreatic findings, resp. Of 178 cases described in the literature, pre-operative diagnosis based on pathological vascular changes was possible in 76% of the cases; the angiograms were normal even when evaluated retrospectively, in 24% of the patients. The extent of a carcinoma was difficult to determine by angiography; 5 out of 13 inoperable tumors quoted in the literature showed no angiographic evidence of extension into other organs.

8706 A TWO-STEP SCANNING METHOD IN LIVER CIRRHOSIS, BASED ON SPECIFIC HEPATIC FUNCTION. *(Ger.)* Locher, J. T. (U. Radiol. Inst., Basel, Switzerland) and M. Elke. *Schweiz Med Wschr* 100(38):1599-1603, 1970.

A two-step scan for diagnosis of liver disease was effectively used in two female patients with cirrhosis, after a previously used routine scintigraphic method failed to provide satisfactory information. The use of selenium 75-methionine (300 μC) which was quickly absorbed by the parenchymatous liver cells provided good scanning results, even in severe liver disease. The two-step scan considers the phagocytic capacity of the liver reticuloendothelial system for the first offered radiocolloid and, in addition, the utilization of protein synthesis with the aid of selenium 75-methionine. This method could be extended to a multi-phase scan by using several different radiopharmaceuticals.

8707 LIVER ANGIOGRAPHY: EXPERIMENTAL STUDIES ON THE PROBABILITY OF DETECTION OF LIVER METASTASES. *(Ger.)* Georgi, M. (Czerny Hosp., Heidelberg, Germany). *Strahlentherapie* 140(1):108-112, 1970.

The detection of liver metastases as related to attainable concentrations of contrast media at the parenchymal level was studied by phantom tests. Low dosages of contrast media (20 ml of 60% urographin) allowed detection of 3 cm size defects and were satisfactory for portal hypertension diagnosis. However, best results in the detection of liver metastases were obtained by direct portography. Parenchymal contrast medium concentrations as low as 1% allowed the detection of defects 1 cm of size, even in thicker portions of the liver, in clinical experience. The method is suggested for use in the detection of liver metastases.

8708 THE DETECTION OF GASTRIC ACIDITY IN PREGNANCY ANEMIA. *(E.)* Beazley, J. M. (Northern Gen. Hosp., Sheffield, England). *Brit J Clin Pract* 24(9):372-374, 1970.

Gastric acidity was studied using a tubeless method (caffeine sodium benzoate as a gastric stimulant and Diagnex-blue as an indicator) in 100 consecutive patients with pregnancy anemia. No permanent achlorhydria was detected although it was suspected in 25 patients after investigation with Diagnex-blue. On repeating the test with histamine, achlorhydria was again discovered in 7 of these patients. Three of them aged more than 35 yr with megaloblastic anemia, subsequently had a test meal augmented with histamine which revealed hypochlorhydria. Tubeless gastric analysis can be a useful screening test in pregnancy anemia.

8709 RELIABILITY OF GASTROSCOPY AND CYTOLOGY FOR THE DIAGNOSIS OF CARCINOMA OF THE STOMACH. *(Ger.)* Halter, F. (Med. Clin. U. Berne, Switzerland), M. Gander, G. Miller and P. A. Gretillat. *Schweiz Med Wschr* 100(28):1220-1221, 1970.

The diagnostic accuracy of gastroscopy and exfoliative gastric cytology was compared in 176 combined examinations in 1160 patients. Clinical evaluation revealed 27 invasive carcinomas (22 verified by laparotomy) and 5 carcinomas *in situ*. One invasive carcinoma and 2 carcinomas *in situ* were diagnosed by positive gastric cytology alone; on the other hand, 16 invasive carcinomas and one carcinoma *in situ* produced negative cytological results. The benign lesions in the operated group (32 out of 59) and in the non-operated patients (92) were mainly peptic ulcers (48), erosive gastritis (15) and cases without definite stomach lesions (46). The percentage of false negative results was 12.5% for gastroscopy and 53.1% for exfoliative cytology; either procedure gave false positive results.

8710 INFUSION CHOLANGIOCHOLECYSTOGRAPHY. *(Ger.)* Crocella, A. (Olga Basilewsky Hosp., Florence, Italy), U. Nannelli, S. Bruno and G. Vita. *Fortschr Roentgenstr* 113(3):359-366, 1970.

The advantages of infusion cholangiocholecystography in comparison to the customary i.v. cholangiocholecystographic procedures based on 486 cases were described. The infusion cholangiocholecystography, in contrast to the standard i.v. procedure in which 40% glucose is used, was performed by slow i.v. infusion (30 min to 60 min) of 200-250 ml of 5% isotonic glucose solution, mixed with 20-40 ml Biligrafin forte or Bilivistan. The use of 5% glucose caused increased concentration of the contrast medium in the bile and earlier, more intense and complete visualization of the total extrahepatic biliary system. Slow administration reduced the incidence of side effects and also the amount excreted by the kidneys.

8711 MICROGASTROFIBERSCOPE: A NEW DEVICE IN DIAGNOSIS OF GASTRIC CANCER BASED ON DISSECTING MICROSCOPE FINDINGS. *(E.)* Suzaki, T. (Tenri Hosp., Japan), T. Miyake, Y. Yamamoto, J. Ariyoshi, H. Furukawa and K. Hajiro. *Jap Arch Intern Med* 17(2):27-39, 1970.

The appearance of the gastric mucosal surface and of capillaries as seen with a dissecting microscope are described in the differential diagnosis of gastric carcinoma using a trial model of a microgastrofiberscope. A gastrofiberscope fitted with a cylindrical hood on its tip (filled with water to fix the focus and eliminate halations) was introduced through a channel inside a masterscope and used for endoscopic observation of the gastric mucosa. Adenocarcinoma was characterized by the abnormal deformation of gland openings and reticulate capillaries while carcinoma simplex was characterized by a smooth structureless surface with irregularly sized and distributed blood vessels. Normal gastric epithelium was smooth and glossy with both gland openings and capillaries uniform in size and distribution while adenomatous polyps show uniformly-sized gland openings but no clearly visible capillaries.

8712 PERORAL BIOPSY OF SMALL INTESTINAL MUCOSA: II. FIRST RESULTS. *(Fr.)* Kissel, F. (C.H.U., Nancy, France), G. Rauber and F. Vicari. *Ann Med Nancy* 9(2):101-105, 1970.

8713 HISTAMINE MAXIMAL SECRETION TEST: A REVIEW. *(Fr.)* Thibert, F. (Hosp. Maisonneuve Montreal, Quebec, Canada), A. Archambault and D. M. Darbari. *Un Med Canada* 99(7):1227-1233, 1970.

8714 INTRALUMINAL PRESSURE MEASUREMENTS AT THE ESOPHAGOGASTRIC JUNCTION AND THE DISTAL ESOPHAGUS IN HEALTHY ADULTS. *(Ger.)* Heitmann, P. (Med. Clin. U. Marburg, Germany) and N. Moller. *Deutsch Med Wschr* 95(39):1963-1969, 1970.

8715 HAZARDS OF PERFUSION CHOLANGIOGRAPHY AND DANGERS OF REPEATED BILE DUCT EXAMINATIONS. *(Fr.)* Wangermez, A. (Bordeaux, France), J. Wangermez and P. Debot. *J Radiol Electr* 51(5):287-290, 1970.

8716 ^{113m}In IN ISOTOPE LOCALIZATION TECHNIQUE. *(Ger.)* Michailov, V. (Inst. Post Grad. Med. Training, Sofia, Bulgaria). *Radiobiol Radiother* 11(3):305-313, 1970.

8717 RADIO-IMMUNOASSAY OF GASTRIN USING ANTISERUM TO PORCINE GASTRIN. *(E.)* Chan Yip, B. S. S. (Baylor Coll. Med., Houston, Texas) and P. H. Jordan. *Proc Soc Exp Biol Med* 134(2):380-385, 1970.

8718 TRANSLIENAL HEPATOGRAPHY WITH LIPIODOL ULTRA FLUID. *(Ger.)* Palvolgyi, L. (St. Hosp. Komlo, Hungary) and A. Laczay. *Radiol Diagn* 11(1):9-16, 1970.

8719 THE COMBINED EXAMINATION OF THE STOMACH AND THE GALLBLADDER. *(Ger.)* Redlich, F. H. (St. Clin. Berlin, Germany). *Radiol Diagn* 11(1): 105-116, 1970.

8720 ROUTINE DIAGNOSIS OF *E. COLI ENTERITIDIS*, ANALYSIS OF H-ANTIGENS AND IMMUNOFLUORESCENCE: I. IMMUNOFLUORESCENCE AND CULTIVATION. *(Ger.)* Schmidt, E. F. (St. Clin. Berlin, Germany), H. W. Ocklitz, F. L. Schlesinger and H. Mochmann. *Monatsschr Kinderheilk* 118(9):517-524, 1970.

8721 ROUTINE DIAGNOSIS OF *E. COLI ENTERITIDIS*, ANALYSIS OF H-ANTIGENS AND IMMUNOFLUORESCENCE: II. ASSANATION AND RESISTANCE. *(Ger.)* Schmidt E. F. (St. Clin. Berlin, Germany), H. W. Ocklitz,

F. L. Schlesinger and H. Mochmann. *Monatsschr Kinderheilk* 118(9):525-528, 1970.

8722 ROUTINE DIAGNOSIS OF *E. COLI ENTERITIDIS*, ANALYSIS OF H-ANTIGENS AND IMMUNOFLUORESCENCE: III. H-TYPES AND CLINICAL PICTURES. *(Ger.)* Schmidt, E. F. (St. Clin. Berlin, Germany), H. W. Ocklitz, F. L. Schlesinger and H. Mochmann. *Monatsschr Kinderheilk* 118(9):528-533, 1970.

8723 ROUTINE DIAGNOSIS OF *E. COLI ENTERITIDIS*, ANALYSIS OF H-ANTIGENS AND IMMUNOFLUORESCENCE: IV. H-TYPES AND EPIDEMIOLOGY. *(Ger.)* Schmidt, E. F. (St. Clin. Berlin, Germany), H. W. Ocklitz, F. L. Schlesinger and H. Mochmann. *Monatsschr Kinderheilk* 118(9):533-537, 1970.

8724 METHODS OF DETERMINING BLOOD-AMMONIA LEVELS AND THEIR SIGNIFICANCE IN THE DIAGNOSIS AND FOLLOW-UP OF LIVER DISEASE. *(Ger.)* Englhardt, A. (2nd Med. Clin. U. Dusseldorf, Germany), B. Haertwig, M. T. Brauns, K. Hinssen, M. Besuch, G. Strohmeyer and F. H. Franken. *Deutsch Med Wschr* 95(31):1601-1609, 1970.

8725 SERUM ENZYME LEVELS AFTER INFUSION CHOLECYSTOCHOLANGIOGRAPHY IN PATIENTS WITH LIVER DISEASE. *(E.)* Frommhold, W. (Med. Radiol. Inst. U. Tubingen, Germany). *Deutsch Med Wschr* 95(38):1911-1914, 1970.

8726 A FUNDAMENTAL CHEMICOPHYSICAL AND RADIOGRAPHIC STUDY OF THE BARIUM SULFATE CONTRAST MEDIA FOR G.I. EXAMINATION: A CHEMICOPHYSICAL EVALUATION OF THE CONVENTIONALLY AVAILABLE BARIUM SULFATES AND AN ATTEMPT TO INCORPORATE IMPROVED CONTRAST MEDIA. *(Jap.)* Karasawa, N. (Nippon Med. Sch., Tokyo, Japan). *Nippon Acta Radiol* 30(3):237-257, 1970.

8727 COMPARISON OF METHODS OF CYTOLOGIC DIAGNOSIS OF GASTRIC CANCER. *(Jap.)* Okuda, Y. (Mitoh Hosp., Yamaguchi, Japan), Y. Takao, M. Shimada, Y. Doi, K. Shigeta and A. Miyoshi. *Jap Arch Intern Med* 17(3):71-83, 1970.

8728 RADIOLOGICAL EVALUATION (WITH AND WITHOUT CONTRAST MEDIA) OF CARDIAL FUNCTION IN INFANTS. *(Ger.)* Dittrich, J. K. (U. Child. Clin. Marburg, Germany). *Monatsschr Kinderheilk* 118(6):277-279, 1970.

8729 AN AUTOMATED METHOD FOR THE DETERMINATION OF AMYLASE. *(E.)* Hathaway, J. A. (U. Utah Med. Ctr., Salt Lake City), D. T. Hunter and C. R. Berrett. *Clin Biochem* 3(3):217-224, 1970.

8730 A MEANINGFUL GASTRIC ANALYSIS. *(E.)* Gelfand, M. D.(Mason Clin., Seattle, Wash.). *Bull Mason Clin* 24(3):135-140, 1970.

8731 GASTROINTESTINAL TRACT CONTENT SAMPLING BY MEANS OF REMOTE CONTROL PILLS. *(Fr.)* Perrenoud, J. P. (Neuchatel, Switzerland). *Schweiz Med Wschr* 100(28):1235-1236, 1970.

8732 SCINTIGRAPHY IN ACUTE PANCREATITIS. *(Fr.)* Leger, L.(Hosp. Cochin, Paris, France), J. C. Roucayrol and J. P. Lenriot. *Presse Med* 78(32):1441-1442, 1970.

8733 MEASUREMENT OF PORTAL FLOW BY ISOTOPE CLEARANCE. *(Fr.)* Perrin, J. E. (Paris, France), C. Aaron, Y. Chapuis, T. Dentan and P. Moulle. *Presse Med* 78(37):1628-1629, 1970.

8734 POSSIBILITIES AND LIMITATIONS OF "STANDARD" RADIOLOGY IN THE DIAGNOSIS OF PANCREATIC DISEASES. *(Fr.)* Engelholm, L. (Hosp. U. Brugmann, Brussels, Belgium), J. Pringot, P. Mainguet and O. Thys. *Acta Gastroent Belg* 33(4-5):345-390, 1970.

8735 EMERGENCY ANGIOGRAPHY IN MASSIVE HEMATEMESIS. *(Fr.)* Weill, F. (C. H. U. Besancon, France), H. Gisselbrecht, P. Grandmottet, J. F. Bonneville, J. P. Ricatte and N. Prevotat. *Ann Radiol* 13(5-6):353-361, 1970.

8736 THE ROENTGENOGRAM IN PERCUTANEOUS CHOLANGIOGRAPHY IN MECHANICAL ICTERUS. *(Ger.)* Sokolow, J. N. (Central Res. Inst. Botkin Hosp., Moscow, USSR), W. W. Nemesch and N. N. Braizewa. *Radiol Diagn* 11(1):93-104, 1970.

8737 SIGMOID AND RECTOSIGMOIDAL JUNCTION: RADIOLOGY. THE INDIRECT LIGHT BEAM. *(Fr.)* Lescut, J. (Valenciennes, France) and J. Charles. *Lille Med* 15(3):554-558, 1970.

8738 DIAGNOSTIC VALUE OF AMYLASE DETERMINATIONS AND EARLY LAPAROTOMY IN ACUTE PANCREATITIS. *(Ger.)* Strebel, H. M. (Surg. U. Clin. Berne, Switzerland), H. Ehrengruber and H. Stirnemann. *Schweiz Med Wschr* 100(28):1207-1209, 1970.

8739 DOUBLE CONTRAST VISUALIZATION OF SMALL INTESTINE. *(Ger.)* Gmunder, U. (Canton Hosp. Zurich, Switzerland) and W. Wirth. *Schweiz Med Wschr* 100(28):1236-1237, 1970.

8740 MICROSCOPY FINDINGS ON THE DUODENAL MUCOSA. *(Ger.)* Weigel, W. (U. Child. Clin. Gottingen, Germany). *Monatsschr Kinderheilk* 118(6):423-424, 1970.

8741 A SIMPLE METHOD FOR DIAGNOSIS OF GALACTOSEMIA AND ITS HETEROZYGOTE GENE CARRIERS. *(Ger.)* Kraus, H. (U. Child, Clin. Gottingen, Germany) and E. Monch. *Monatsschr Kinderheilk* 118(6):426-427, 1970.

8742 DIAGNOSIS AND CLINICAL MEANING OF GASTRIC EROSIONS. *(Ger.)* Rosch, W. (Med. Clin. Polyclin., U. Erlangen-Nuremberg, Germany). *Deutsch Med Wschr* 95(28):1491-1492, 1970.

8743 DOUBLE CONTRAST ROENTGENOLOGY IN EARLY GASTRIC CARCINOMA. *(Ger.)* Witt, H. (Rudolf Virchow Hosp., Berlin, Germany). *Deutsch Med Wschr* 95(34):1732, 1970.

8744 EVALUATION OF DIAZO REACTION OF URINE FOR THE DIAGNOSIS OF ENTERIC FEVERS. *(E.)* Rajvanshi, V. S. (M. L. N. Med. Coll., Allahabad, India), K. P. Bhalla and B. L. Agarwal. *Indian Pract* 23(6):345-354, 1970.

8745 XENON^{133} CLEARANCE AND LIVER BLOOD FLOW: AN EXPERIMENTAL STUDY IN THE CAT. *(E.)* Darle, N. (Dept. Surg., U. Goteborg, Sweden). *Acta Chir Scand* (suppl. 407):1-64, 1970.

8746 PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY IN DIAGNOSIS OF DISEASES OF THE BILIARY TRACT. *(E.)* Bayindir, S. (Surg. Dept. U. Giessen, Germany), H. F. Schirmer, N. Heger and R. Steckenmesser. *Minnesota Med* 53(10):1107-1113, 1970.

8747 THE DIAGNOSTIC VALUE OF HEPATIC PLIABILITY AS ASSESSED FROM INSPIRATION AND EXPIRATION VIEWS ON THE GAMMA CAMERA. *(E.)* Kranzler, J. K. (Pritzker Sch. Med., U. Chicago, Ill.), J. M. Vollert, P. V. Harper, R. E. Polcyn, F. H. Straus and A. Gottschalk. *Radiology* 97(2):323-326, 1970.

8748 AN EVALUATION OF THE EFFECT OF HIGH-DOSE UROGRAPHY ON PREVIOUSLY IMPAIRED RENAL AND HEPATIC FUNCTION IN MAN. *(E.)* Davidson, A. J. (Mount Zion Hosp. Med. Ctr., San Francisco, Calif.), J. Becker, N. Rothfield, G. Unger and D. R. Ploch. *Radiology* 97(2):249-254, 1970.

8749 ALKALINE PHOSPHATASE AND THE MAC LAGAN REACTION IN THE DIFFERENTIAL DIAGNOSIS OF VIRAL HEPATITIS AND NON-INFECTIOUS CHOLESTATIC ICTERUS. *(It.)* Franciosi, A. (D. Cotugno Hosp., Naples, Italy), A. Acampa and A. R. Spena. *Minerva Med* 61(35):1918-1922, 1970.

8750 PANCREATIC INVESTIGATION BY DUODENAL INTUBATION. *(Fr.)* Sarles, H. (Marseilles, France), E. Salem, R. C. Cros and C. Figarella. *Acta Gastroent Belg* 33(4-5):303-318, 1970.

8751 INTEREST AND LIMITATIONS OF PANCREATIC SCINTISCANNING. *(Fr.)* Blanquet, P. (I.N.S.E.R.M., Bordeaux, France), L. P. Doutre, C. Beck and D. Ducassou. *Acta Gastroent Belg* 33(4-5):409-421, 1970

8752 OPERATIVE RADIOMANOMETRICAL FLUX MEASUREMENTS DURING EXTRAHEPATIC BILIARY TRACT SURGERY. *(Fr.)* Roux, M. (Hosp. Vaugirard, Paris, France), P. Vayre, R. Le Canuet and A. Farah. *Ann Chir* 24(11-12):695-704, 1970.

8753 DIFFERENTIATION OF GLYCOGENOSES: METHODOLOGY. *(Ger.)* Schaub, J. (U. Child. Clin. Munich, Germany). *Monatsschr Kinderheilk* 118(6):427-429, 1970.

8754 USE OF ISOTOPES IN THE DETECTION OF HEREDITARY METABOLIC DISORDERS. *(Ger.)* Linneweh F. (U. Child. Clin. Marburg, Germany). *Monatsschr Kinderheilk* 118(6):191-194, 1970.

8755 HEPATOSPLENOSCINTOGRAPHY USING SHORT LIFE RADIOISOTOPES IN PEDIATRICS. *(Ger.)* Mussa G. C. (U. Child. Clin. Turin, Italy), M. M. Mauri and D. Bacolla. *Monatsschr Kinderheilk* 118(6):235-236, 1970.

8756 RADIOLOGY OF THE UPPER ABDOMEN: MORPHOLOGICAL AND FUNCTIONAL EVALUATION OF THE GALLBLADDER. *(Ger.)* Koenig, H. (2nd Med. Clin., Polyclin., Martin Luther U., Halle, Germany) and E. Mertens.

8757 SCINTIGRAPHY IN PANCREATITIS: III. DIAGNOSTIC VALIDITY OF THIS METHOD. *(It.)* Cellini, N. (Inst. Radiol., Catholic U. Sacred Heart, Rome, Italy), G. De Rossi and L. Troncone. *Policlinico* 77(2):57-65, 1970.

8758 RADIOISOTOPIC TECHNIQUES IN THE CLINICAL DIAGNOSIS OF FOCAL LIVER DISEASES: COMPARISON WITH BIOCHEMICAL METHODS. *(It.)* Pagliano, F. (Dept. Med., U. Milan, Italy) and L. Tenconi. *Minerva Med* 61(35):1889-1895, 1970.

8759 ROENTGENOLOGICAL IMAGE OF VARICES IN THE BULBUS DUODENI. *(Ger.)* Knetsch, A. (Hildesheim, Germany). *Radiologe* 10(8):323-326, 19

8760 INTRALUMINAL DUODENAL DIVERTICULUM: ROENTGENOLOGICAL DIAGNOSIS. *(Ger.)* Kamieth, H. (Saar, Germany). *Radiologe* 10(8):333-338, 1970.

8761 A NEW METHOD FOR DETERMINATION OF THE LEVEL OF ANAL AND RECTAL ATRESIA: ULTRASONIC DIAGNOSIS. *(Ger.)* Willital, G. H. (Surg.

in. Polyclin., U. Erlangen-Nuremberg, Germany). *Kinderchir* 8(4):395-398, 1970.

62 HYPOTONIC DUODENOGRAPHY: INDICATIONS AND TECHNIQUE. *(Ger.)* Taubert, W. adiol. Clin. Karl Marx U., Leipsig, Germany). *utsch Gesundh* 25(29):1361-1364, 1970.

63 ROENTGENOLOGIC PICTURE OF THE ACUTE ABDOMEN. *(Ger.)* Witt, H. (Rudolph rchow Hosp., Berlin, Germany). *Deutsch Med J* (11):807-808, 1970.

64 PERITONITIS CHRONICA FIBROSA ENCAPSULANS. *(Ger.)* Lynen, F. K. (Med. Fac., Rheinisch-tphalian Tech. Coll., Aachen, Germany) and E. D. wilden. *Zbl Chir* 95(27):785-793, 1970.

65 TARGET ANGIOGRAPHY IN THE DIAGNOSIS OF PANCREATIC LESIONS. *(Ger.)* Chvojka, J. lit. Hosp. Pilsen, Germany). *Fortschr Roentgenstr* (3):336-339, 1970.

66 A CONTRIBUTION TO FUNCTIONAL AND MORPHOLOGICAL GASTRIC DIAGNOSES. *(Ger.)* Heschl. R. d. U. Clin. Graz, Austria) and G. P. Tilz. *Wien Wschr* 120(30-32):529-530, 1970.

67 LIVER DISEASES AND THE INFECTIOUS HEPATITIS-MONONUCLEOSIS TEST (HIM-TEST). *(Ger.)* chl, R. (Med. U. Clin. Graz, Austria), G. P. Tilz S. Sailer. *Wien Med Wschr* 120(30-32):531-532, 0.

8 SOME ASPECTS OF EXOCRINE PANCREAS SECRETION: EXPERIENCES WITH THE "AUGMENTED SECRETIN T." *(Ger.)* Bordalo, O. (U. Clin. Santa Maria, bon, Portugal). *Munchen Med Wschr* 112(39):1734-9, 1970.

9 THE DIAGNOSIS OF SALMONELLOSIS IN CHICKEN USING ENRICHMENT MEDIA INCUBATED AT 43° C. *r.)* Geissler, H. (Justus Leibig U., Geissen, many) and J. Kosters. *Zbl Bakt* 214(2):207-215, 0.

0 FUNCTIONAL COPROLOGY: CLINICAL VALUE AND DIETARY APPLICATIONS. *(Fr.)* Alary, R. d Cross Hosp., Lyon, France) and B. Savoye. *ed Lyon* (1189):1407-1414, 1970.

1 ELECTRON MICROSCOPY IN THE DIAGNOSIS OF SMALL INTESTINAL DISEASES. *(It.)* Labo, (Med. Inst. U. Bologna, Italy), G. Gasbarrini, Casanova, F. Miglio and R. Corinaldesi. *Gass it* 41(1-2):24-36, 1970.

8772 ENDOSCOPY AND ENDOPHOTOGRAPHY OF THE COLON. *(It.)* Arullani, P. (2nd Med. Clin., U. Rome, Italy) and P. Paoluzi. *Minerva Gastroent* 16(1):18-22, 1970.

8773 DIFFERENTIAL DIAGNOSIS OF JAUNDICE: THE RATIO BETWEEN BLOOD PHOSPHATASE AND BLOOD BILIRUBIN. *(It.)* Agresti, A. (Dept. Surg., U. Naples, Italy), M. Siciliani, M. De Rosa and G. Cinque. *Rass Int Clin Ter* 50(6):321-326, 1970.

8774 INVESTIGATION OF GASTRIC SECRETION: MODERN TECHNIQUE. *(It.)* Keel, H. J. (Radiol. Inst. U. Lausanne, Switzerland). *Minerva Med* 61(47):2646-2648, 1970.

8775 LIPID ABSORPTION TEST IN PREMATURE INFANTS: USE OF A TRIGLYCERIDE IODATE (LIPIODOL). *(It.)* Calo, S. (Cap Grande Hosp. Milan, Italy), V. Denegri and Z. Lamastra. *Minerva Pediat* 22(5):236-242, 1970.

8776 DYSPHAGIA IN ADULTS: DIAGNOSIS. *(Fr.)* Dietsch, M. R. (Red Cross Hosp., Lyon, France). *J Med Lyon* (1189): 1379-1390, 1970.

8777 INTRAVENOUS GALACTOSE TOLERANCE TEST: TECHNIQUE, RESULTS, CLINICAL VALUE. *(Ger.)* Nkwo, A. (Med. Acad. Lubeck, Germany) and K. Lorentz. *Z Gastroent* 8(5):312-315, 1970.

8778 LIVER NEEDLE BIOPSY IN INFANTS AND CHILDREN ACCORDING TO MENGHINI: TECHNICAL IMPROVEMENTS. *(It.)* Saputo, V. (Circolo Hosp., Merate, Italy). *Minerva Pediat* 22(5):233-235, 1970.

8779 CLINICAL VALUE OF IMMUNOGLOBULIN DETERMINATIONS IN LIVER DISEASES. *(Ger.)* Kindler, U. (1st Med. Clin. U. Dusseldorf, Germany) and D. Koch. *Deutsch Med Wschr* 95(25):1348-1351, 1970.

8780 CLINICAL, CHEMICAL AND DIFFERENTIAL DIAGNOSIS OF LIVER DISEASES. *(Ger.)* Prellwitz, W. (2nd Med. U. Clin. Polyclin. Mainz, Germany). *Therapiewoche* 20(29):1421-1427, 1970.

8781 DIFFERENTIAL DIAGNOSIS OF GASTROINTESTINAL HEMORRHAGE. *(Ger.)* Zimmermann, H. D. (Path. Inst., Justus Liebig U., Giessen, Germany). *Med Welt* 21(31-32):1371-1378, 1970.

8782 PREVENTION OF COMPLICATIONS IN LAPAROSCOPY AND LIVER PUNCTURE BIOPSY. *(Ger.)* Fischer, R. (Special Clin. Liver Dis., Bad Kissingen, Germany.) and K. Natzschka. *Med Welt* 21(26):1197-1202, 1970.

8783 RESULTS OF OPERATIVE CHOLANGIOGRAPHY. *(Ger.)* Kugler, S. (Surg. U. Clin. Hamburg-Eppendorf, Germany). *Bruns Beitr Klin Chir* 218(2):145-151, 1970.

8784 A RADIOISOTOPIC METHOD FOR MEASURING GLUCURONIDE FORMATION IN MAN. *(Ger.)* Eysselt, M. (Dept. Radiol., U. J. Ev. Purkyne, Brno, Czechoslovakia) and J. Dohnalek. *Acta Hepatosplan* 17(4):246-249, 1970.

8785 RELATION BETWEEN SPONTANEOUS AND STIMULATED SECRETION IN SUBMAXIMAL BETAZOLE TEST. *(Ger.)* Rehner, M. (Marien Hosp., Hamburg, Germany), T. Georgi, S. Debreczeni and H. Von Ackeren. *Chirurg* 41(8):373-375, 1970.

8786 MESENCHYMAL HEPATIC CLEARANCE WITH A HIGH MOLECULAR WEIGHT PREPARATION OF COLLOIDAL IRON. *(It.)* Negri, S. (Med. Clin. U. Milan, Italy), F. Civardi, C. Santambrogio, S. Procaccia and N. Massari. *Minerva Med* 61(35):1896-1901, 1970.

8787 COMPLICATIONS OF ULCER DISEASE DETECTED BY ELECTROGASTROGRAPHY. *(Rus.)* Furman, V. N. (Pirogov Med. Ins., Vinnitsa, USSR) and V. N. Kazakov. *Klin Khir* (342):16-21, 1970.

8788 SULFOBROMOPHTHALEIN INTOLERANCE IN LIVER. *(It.)* Robert, L. (Civ. Hosp. Genoa, Italy) and F. Rizzo. *Arch Maragliano Pat Clin* 26(4):259-272, 1970.

8789 A COMPARATIVE STUDY OF ENDOSCOPIC AND RADIOLOGIC METHODS IN THE DIAGNOSIS OF CHRONIC HYPERTROPHIC GASTRITIS, GASTRIC ULCER AND GASTRIC NEOPLASMS. *(It.)* Faggioli, F. (Dept. Med., U. Bologna, Italy), A. Corinaldesi, G. Scondotto and M. Mattei. *G Clin Med* 51(5):369-380, 1970.

8790 DIFFERENTIAL DIAGNOSIS OF TUMORS OF THE PANCREATIC REGION. *(It.)* Lacroix, L. (Med. Clin. U. Turin, Italy) and R. Cattanoe Godio. *Minerva Med* 61(70):3587-3594, 1970.

o P:Motil (8578)
o P:Secr:Hepatobil (8677)
o D:Stomduo (8876)
o D:S.Intest (8897)(8907)
o D:L.Intest (8979)
o D:L.Intest:Ulccol (8992)
o D:Pancreas:Pancreat (9015)
o D:Livbil (9040)(9052)(9076)(9079)
o D:Livbil:A.V.Hep (9126)
o D:Gen:Parasit (9263)

GASTROINTESTINAL DISEASES

ESOPHAGUS

791 RESULTS OF RADIATION THERAPY WITH HIGH SINGLE DOSES FOR ESOPHAGEAL CARCINOMA.
Ger.) Balmuchanov, S. B. (Res. Inst. Oncol. Radiol.,
ma Ata, USSR), K. I. Zolkiver, A. S. Smagulov,
Z. Szetteev, L. I. Musabaeva, Z. N. Abdrachmanov
d A. T. Turganbaev. *Radiobiol Radiother* 11(3):
25-234, 1970.

esults of 2 types of radiation treatment of esopha-
eal carcinoma were compared in 2 groups of male and
emale patients, aged 40-70; leukocyte and lymphocyte
ounts were carried out before, during and after
reatment; all patients received 'hemostimulating'
erapy (blood transfusions, infusions with leuko-
tes and drugs). The patients in Group 1 (100)
ceived high single doses (600-800 r every 3-4 days,
tal dose 3500-4500 r), while Group 2 (113 patients),
ceived daily radiation (single dose 150-200, total
se 6000-8000). The extent of the tumor was on
e average more than 6 cm, but could not be deter-
ned in 12 patients of Group 1 due to the almost
mplete obturation of the esophageal lumen. In
l cases in which the extent of the tumor was more
an 10 cm, or in which distant metastases were
esent, the disease was classified as 'Stage IV'
l patients of group 1); the other 69 patients
re classified as 'stage III'. In Group 2, 28%
the patients (32) were classified as 'stage IV',
d the remaining 81 patients as 'stage III'.
oup 2 was considered the control group and differed
ly slightly in sex and age distribution, as well
in regard to location and severity of the tumor.
tastases were radiologically determined in 25%
the patients in group 2 and in 21% of the patients
group 1. The results of the radiation treatment
re good or satisfactory in 91% of group 1 and in
% of the patients in group 2. The difference in
sults was highest in the first yr after termina-
on of treatment and decreased thereafter; the
an survival time for patients of group 1 was 10.3
nths and 6.4 months for patients of group 2.

92 LESIONS OF THE ESOPHAGEAL WALL AND OF THE MEMBRANOUS TRACHEA IN TRACHEOTOMIZED PA-
ENTS. *(Fr.)* Nicolas, F. (Nantes, France), A. Y.
Lajarte and J. Artignan. *Anesth Analg* 27(4):
3-619, 1970.

93 ESOPHAGEAL REPLACEMENT BY COLON TRANSPLANT IN INFANTS AND CHILDREN: INDICA-
ONS, TECHNIQUE AND RESULTS. *(Fr.)* Petit, P.
osp. St. Vincent De Paul, Paris, France), J. Borde,
Mitrofanoff and J. Valayer. *Ann Chir Infant* 11(3):
1-198, 1970.

94 ESOPHAGEAL REPAIR WITH A SEGMENT OF TRANSVERSE COLON IN AN 18-HR-OLD INFANT. RE-
LTS 4 YEARS AFTER SURGERY. *(Fr.)* Soave, F. (Genoa,
aly), V. Rizzo and F. Dall'orso. *Ann Chir Infant*
(3):185-189, 1970.

95 IDIOPATHIC MEGA-ESOPHAGUS IN CHILDREN (5 CASES). *(Fr.)* Pasquie, M. (Fac. Med.
ulouse, France), S. Juskiewenski and B. Petel.
n Chir Infant 11(3):171-178, 1970.

8796 CONGENITAL ESOPHAGEAL STENOSIS AND CERVICAL TRACHEAL AND ESOPHAGEAL FISTULA. *(Fr.)* Moyson, F. (Brugmann U. Hosp., Brussels, Belgium). *Ann Chir Infant* 11(3):179-183, 1970.

8797 EXTENDED CYLINDRICAL METAPLASIA OF THE LOWER ESOPHAGUS. *(Fr.)* Fasel, J. (Med. Clin. U. Lausanne, Switzerland), M. Monti and M. Savary. *Schweiz Med Wschr* 100(28):1233-1234, 1970.

8798 EFFICACY OF FUNDOPLICATION IN THE TREATMENT OF REFLUX AND PEPTIC ESOPHAGITIS: ENDOSCOPY AND CLINICAL DATA. *(Fr.)* Naef, A. P. (Hosp. Yverdon, France), M. Savary and W. A. Jaques. *Schweiz Med Wschr* 100(28):1228-1229, 1970.

8799 SURGICAL CURE OF HIATAL HERNIA IN ADULT PATIENTS: ANATOMICAL AND PATHOLOGICAL DATA; THERAPEUTIC DEDUCTIONS; WITH REFERENCE TO 230 OPERATED CASES. *(Fr.)* Vayre, P. (Hosp. Vaugirard, Paris, France), J. Hureau and M. Roux. *Ann Chir* 24(11-12):627-636, 1970.

8800 RADIOTHERAPY OF CANCER OF THE ESOPHAGUS. *(It.)* Vitale, V. (Galliera Hosp., Genoa, Italy) and G. Ricci. *Minerva Radiol* 15(3):86-97, 1970.

8801 ATRESIA AND MEMBRANOUS STENOSIS OF THE ESOPHAGUS. *(It.)* Cetrullo, C. (Dept. Surg., U. Bologna, Italy), A. Vio, G. Martinelli and G. Pagliani. *Riv Chir Pediat* 12(3):328-338, 1970.

8802 TREATMENT OF ESOPHAGEAL ATRESIA. *(It.)* Bumbic, S. (Fac. Med. U. Belgrade, Yugoslavia), B. Ignjatovic, L. Tonic and L. Stojanovic. *Riv Chir Pediat* 12(3):317-327, 1970.

8803 ESOPHAGEAL ATRESIA.*(It.)* Rizzo, V. (Inst. G. Gaslini, Genoa, Italy), P. Dodero, A. Mezzano and A. Rizzo. *Riv Chir Pediat* 12(3):312-316, 1970.

8804 CANCER OF THE ESOPHAGUS: COBALT TELECURIE-THERAPY. *(It.)* Faccini, M. (Sch. Advanced Clin. Med., Milan, Italy) and S. Gandini. *Minerva Radiol* 15(4):116-127, 1970.

8805 PEPTIC STENOSES OF THE ESOPHAGUS: ETIOLOGY AND PATHOGENESIS. *(Fr.)* Mounier-Kuhn, P. (no affil), J. Gaillard and J. P. Haguenauer. *Lyon Med* 224(27):27-41, 1970.

8806 ISOLATED ESOPHAGEAL AND TRACHEAL FISTULAS. *(Fr.)* Deffrenne, P. (no affil), C. Beraud and Saint-Dizier. *Arch Franc Pediat* 27(6):657-665, 1970.

8807 VAGOTOMY ASSOCIATED SURGERY FOR HIATAL HERNIA. *(Fr.)* Patel, J. C. (no affil). *Presse Med* 78(29):1330, 1970.

8808 THE ESOPHAGUS: 1967 TO 1969 -- PART II. *(E.)* Pope, C. E., II (VA Hosp. Seattle, Wash.). *Gastroenterology* 59(4):615-629, 1970.

8809 REPLACEMENT OF THE ESOPHAGUS BY COLON IN INFANTS AND CHILDREN. *(E.)* Ferguson, C. C. (Child. Hosp. Winnipeg, Manitoba, Canada). *Canad J Surg* 13(4):396-402, 1970.

8810 CONGENITAL ESOPHAGOSTENOSES. *(Fr.)* Petit, P. (Hosp. St. Vincent De Paul, Paris, France), J. Borde, J. P. Gubler and P. Touraine. *Ann Chir Infant* 11(3):153-170, 1970.

8811 COLON TRANSPLANT FOR ESOPHAGEAL REPAIR. *(It.)* Venzioni, M. (Child. Hosp. Vittore Buzzi, Milan, Italy) and S. Gallina. *Riv Chir Pediat* 12(3):373-389, 1970.

8812 TRANSVERSE COLON TRANSPLANT FOR ESOPHAGEAL ATRESIA. *(It.)* Soave, F. (Inst. G. Gaslini, Genoa, Italy), B. Possenti, A. Bertlini and V. Rizzo. *Riv Chir Pediat* 12(3):355-372, 1970.

8813 FOREIGN BODIES OF THE ESOPHAGUS IN INFANTS AND CHILDREN. *(It.)* Cetrullo, C. (Dept. Surg., U. Milan, Italy), A. Vio and C. Rimondini. *Riv Chir Pediat* 12(3):347-354, 1970.

8814 CONGENITAL ESOPHAGEAL DIVERTICULUM. *(It.)* Possenti, B. (Inst. G. Gaslini, Genoa, Italy), F. Soave and P. Dodero. *Riv Chir Pediat* 12(3):339-346, 1970.

8815 RARE COMPLICATIONS OF HIATAL HERNIA. *(Fr.)* D'Amours, C. (Hosp. St. Michel Archange, Quebec, Canada) and M. Tremblay. *Un Med Canada* 99(7):1286-1288, 1970.

8816 ESOPHAGEAL FOREIGN BODIES: ETIOLOGY, DIAGNOSIS AND THERAPY. *(Ger.)* Kellerhals, B. (Burger Hosp., Basle, Switzerland). *Z Larng Rhinol Otol* 49(8):526-533, 1970.

8817 GASTROESOPHAGEAL SPHINCTER FUNCTION AFTER FUNDOPLICATION. *(Ger.)* Affolter, H. (Med. U. Clin. Basel, Switzerland) and M. Rossetti. *Schweiz Med Wschr* 100(28):1230-1231, 1970.

8818 TREATMENT OF GASTROESOPHAGEAL REFLUX: SURGICAL TECHNIQUES. *(It.)* Grassi, G. (St. Giovanni Hosp., Rome, Italy) and S. B. Valentini. *Chir Gastroent* 4(1):86-98, 1970.

8819 TREATMENT OF A CASE OF COMBINED MALLORY-WEISS AND BOERHAAVE'S SYNDROME. *(E.)* McVay, C. B. (U. South Dakota Sch. Med., Yankton). *Surg Clin N Amer* 50(5):1111-1117, 1970.

8820 PYLORIC STENOSIS PRODUCED BY ACID EROSION OF THE ESOPHAGUS. *(Ger.)* Mauerhofer, R. (Oto-Rhino-Laryng. Clin. U. Berne, Switzerland). *Praxis* 59(41):1427-1434, 1970.

8821 ESOPHAGEAL ATRESIA: DELAYED END-TO-END ANASTOMOSIS AFTER ELONGATION OF THE SHORT PROXIMAL SEGMENT. *(Ger.)* Daum, R. (Surg. U. Clin. Heidelberg, Germany), W. C. Hecker and W. Heiss. *Z Kinderchir* 8(4):359-363, 1970.

8822 SURGERY FOR ESOPHAGEAL ACHALASIA: INDICATION AND TECHNIQUE. *(Ger.)* Rossetti, M. (Surg. U. Clin. Basel, Switzerland). *Actuelle Chir* 5(4):237-248, 1970.

8823 ESOPHAGEAL ACHALASIA: THERAPY. *(Ger.)* Wenzel, K. P. (Surg. U. Clin., Halle, Germany) and E. Sandler. *Zbl Chir* 95(32):945-956, 1970.

8824 RADIOLOGICAL FINDINGS IN A CASE OF BENIGN ESOPHAGEAL TUMOR. *(Ger.)* Olbert, F. (Vienna St. Hosp., Austria). *Wien Klin Wschr* 38(82):654-657, 1970.

8825 ESOPHAGEAL STENOSIS: MANAGEMENT BY BOUGIENAGE. *(Ger.)* Welte, W. (St. Child. Hosp. Cologne, Germany) and K. D. Ebel. *Monatsschr Kinderheilk* 118(6):273-277, 1970.

8826 ESOPHAGEAL REPAIR BY COLON TRANSPLANT: POSTSURGICAL CARE. *(Ger.)* Dubousset, J. (Hosp. St. Vincent de Paul, Paris, France), O. Gaudiche and J. P. Gubler. *Monatsschr Kinderheilk* 118(6):280-281, 1970.

- o Diagproc (8728)(8776)
- o D:Stomduo (8831)(8852)(8858)

8827 HYPERTROPHY OF THE PYLORIC AND ANTRAL MUSCLE IN THE ADULT. *(Ger.)* Schmitt-Koppler, A. (Surg. U. Clin. Mainz, Germany), H. Brunner and C. P. Ehlert. *Langenbeck Arch Chir* 326(4):355-366, 1970.

Hypertrophy of the pyloric muscle and the antrum, associated with gastric or duodenal ulcer, was seen in 13% of patients operated during the last 2 yr. Clinical symptoms, and radiological investigation showed elongation and narrowing of antrum and pylorus with the lips of the pylorus protruding spike-like into the duodenal bulb. Differential diagnosis between benign hypertrophy and malignancy was often difficult.

8828 PYLORIC SPHINCTER INCOMPETENCE IN MAN: A PHYSIOLOGICAL VARIANT. *(E.)* Beneventano, T. C. (Montefiore Hosp., Bronx, N.Y.) and C. J. Schein. *Gastroenterology* 59(4):518-521, 1970.

Thirty-six consecutive cholecystectomized female patients with indwelling T-tubes were examined for pyloric sphincter competence by a cineradiographic technique. Sodium diatrozoate (50%) was passed through a T-tube to fill the duodenum and the duodenal bulb. Twelve patients (33 1/3%) demonstrated pyloric insufficiency with regurgitation of the contrast material through the sphincter into the stomach. None of the patients with regurgitation were symptomatic or had roentgen or direct observation disease of the stomach or duodenum. Pyloric sphincter incompetence appears to be a physiological variant in some individuals.

8829 PRODUCTION OF LEUKEMIA AND STOMACH NEOPLASMS IN SWISS, RF, BALB/c, AND C3H FEMALE MICE BY FEEDING N-[4-(5-NITRO-2-FURYL)-2-THIAZOLYL] ACETAMIDE. *(E.)* Cohen, S. M. (U. Wisconsin Med. Sch., Madison), E. Erturk and G. T. Bryan. *Cancer Res* 30(9):2320-2325, 1970.

The survival rate, latent period, and incidence of lymphocytic leukemia and the incidence of stomach neoplasms were determined in Swiss, RF, BALB/c, and C3H female mice fed N-[4-(5-nitro-2-furyl)-2-thiazolyl] acetamide (NFTA). Only 16 Swiss mice fed NFTA (490 mg/mouse/13 weeks) in an initial test survived and in gross and microscopic examination 15 had generalized lymphocytic leukemia and 3 had forestomach squamous cell tumors while none of the 51 control mice (surviving 14 to 49 weeks) developed leukemia or any other tumors. In a 14 week dosage study on Swiss mice, a 12 week latent period for the leukemia was observed at 0.1 and 0.05% dietary levels of NFTA with incidences of 8/9 and 9/13 resp., and an 18 week latent period was observed at 0.025 and 0.01% dietary levels with incidences of 8/16 and 7/14, resp. Stomach tumors were found in 12/52 mice with 6 of these incidences occurring in the highest dosage range (0.1%). After 14 weeks on a 0.1% NFTA diet, leukemia was widespread in RF (12/16), BALB/c (21/29), C3H (12/24), and Swiss (22/22) strains of mice while only 3 controls (all of the RF strain) developed leukemia, and 13 mice fed NFTA displayed stomach tumors while none of the controls were afflicted.

8830 CONGENITAL MEMBRANOUS STENOSIS OF THE DUODENUM AND THEIR IMPORTANCE IN ADULTS: CONTRIBUTION TO THE PATHOGENESIS OF INTRADUODENAL DIVERTICULUM. *(Ger.)* Holder, E. (St. Hosp. Nuremberg, Germany), E. Messmer and W. Wenz. *Langenbeck Arch Chir* 326(4):287-305, 1970.

Membrane stenosis of the duodenum in a 19-yr-old male and in a 40-yr-old female patient were reported. A moderate ring-like stenosis due to delicate membrane formation was radiographically diagnosed in the female patient who was treated conservatively. The male patient showed radiologically a greatly distended duodenum, and a stenosis in the 3rd, horizontal part of the duodenal loop. During surgery, a palm-sized duodenal membrane with central opening of 3 to 4 mm diameter was removed. The symptoms, which had existed for 6 yr, disappeared promptly and the enlargement of the duodenum was greatly reduced 2 weeks after the operation.

8831 FUNDIC MUCOSA OF THE DUODENUM. *(Por.)* Paulino, F. (no affil) and A. Roselli. *Arq Gastroent* 7(2):89-92, 1970.

8832 MANAGEMENT OF GASTRIC FISTULA IN THE ABSENCE OF THE ABDOMINAL WALL. *(E.)* Morioka, W. (St. Louis City Hosp., Mo.) and R. M. Keltner. *Missouri Med* 67(10):727-730, 1970.

8833 MY EXPERIENCE OF SELECTIVE VAGOTOMY IN THE TREATMENT OF ULCER DISEASE. *(E.)* Grassi, G. (St. Giovanni Hosp., Rome, Italy). *Acta Chir Scand* 136(5):423-429, 1970.

8834 MULTIPLE DIFFUSE CYSTIC DISEASE OF THE STOMACH IN ASSOCIATION WITH CARCINOMA. *(E.)* Ignatius, J. A. (El Camino Hosp., Mountain View, Calif.), C. D. Armstrong and S. L. Eversole. *Gastroenterology* 59(4):610-614, 1970.

8835 ABSORPTION OF CEPHALEXIN FROM THE GASTROINTESTINAL TRACT IN DISEASE SUBJECTS. *(E.)* Davies, J. A. (Radcliffe Infirm., Oxford, England), J. E. M. Strangeways and J. M. Holt. *Postgrad Med J* 46(suppl.):16-19, 1970

8836 ROENTGEN FEATURES OF HEALING AND HEALED BENIGN GASTRIC ULCERS. *(E.)* Keller, R. J. (Mount Sinai Hosp. Sch. Med., New York, N.Y.), B. S. Wolf and M. T. Khilnani. *Radiology* 97(2):353-358, 1970.

8837 THE MANAGEMENT OF LEIOMYOSARCOMA OF THE STOMACH. *(E.)* Nance, F. C. (Louisiana St. U. Sch. Med., New Orleans) and I. Cohn, Jr. *Surg Clin N Amer* 50(5):1129-1136, 1970.

8838 FOUR CASES OF GASTRIC POLYP DEVELOPMENT INTO CANCER. *(It.)* Gava, L. (Dept. Surg., U. Bologna, Italy) and E. Del Favero. *Minerva Chir* 25(11):817-829, 1970.

8839 QUANTITATIVE IMMUNOGLOBULIN RELATIONSHIPS IN CHRONIC GASTRITIS. *(Ger.)* Zimmermann, S. (Karl Marx St. Dist. Hosp., Germany), K. H. Kratzsch, I. Lewicki and W. Buttner. *Z Ges Inn Med* 25(15):709-712, 1970.

8840 OMPHALOCELE AND GASTROSCHISIS. *(Ger.)* Krenn, R. (Dist. Child. Hosp. Linz, Austria). *Wien Med Wschr* 120(30-32):542-545, 1970.

8841 EOSINOPHIL INFILTRATION AND HYPERTROPHY OF THE PYLORUS. *(Ger.)* Seidl, P. (Path. Inst. U. Graz, Austria). *Langenbeck Arch Chir* 326(4):271-279, 1970.

8842 THREE CASES OF NEURINOMA OF THE STOMACH. *(Jap.)* Ueno, K. (Kumamoto U. Med. Sch., Japan), S. Tashiro, H. Wada, J. Uemura and F. Kahi. *J Kumamoto Med Soc* 44(5):452-456, 1970.

8843 RADIOLOGIC, ENDOSCOPIC, BIOPTIC AND FUNCTIONAL ASSESSMENT OF THE EFFECT OF PROPAXOLINE ON GASTRODUODENAL INFLAMMATION. *(It.)* Gasbarrini, G. (1st Dept. Med. Path., U. Bologna, Italy), F. Faggioli, N. Melchionda, F. Miglio and A. Zanetti. *Minerva Med* 61(71):3643-3666, 1970.

8844 FREQUENCY OF DELOMORPHOUS CELL ANTIBODIES IN CHRONIC GASTRITIS. *(Ger.)* Apostoloff, E. (1st Berlin Charity Med. Clin., Germany), G. Lisewski, P. Reitzig and H. David. *Z Ges Inn Med* 25(14):645-647, 1970.

8845 ISOLATED GASTRIC LYMPHOGRANULOMATOSIS. *(Ger.)* Wendenburg, H. H. (Czerny Hosp. Heidelberg, Germany) and H. Kelleter. *Strahlentherapie* 140(1):84-88, 1970.

8846 ORIGIN OF OMPHALOCELE AND GASTROSCHISIS (PARA-UMBILICAL DEFECT OF THE ABDOMINAL WALL). *(Ger.)* Muntener, M. (Anat Inst. U. Zurich, Switzerland). *Z Kinderchir* 8(4):380-390, 1970.

8847 GASTRIC TERATOMA IN THE NEWBORN. *(Ger.)* Waldschmidt, J. (Surg. Clin. Free U. Berlin, Germany), U. Bauer and W. Hasse. *Z Kinderchir* 8(4):390-394, 1970.

8848 CARCINOMA OF THE PERIPAPILLARY PORTION OF THE DUODENUM ORIGINATING IN HETEROTOPIC PANCREATIC TISSUE. *(Ger.)* Schubert, G. E. (Path. Inst. U. Tubingen, Germany) and K. Dost. *Chirurg* 41(7):325-328, 1970.

8849 PYLORIC STENOSIS: PRESURGICAL MANAGEMENT *(Ger.)* Ranke, E. (Steglitz Clin., Free U Berlin, Germany), G. Beck and A. Anders. *Deutsch Med J* 21(11):813-816, 1970.

8850 ARTERIO-PORTAL FISTULA AFTER GASTRIC RESECTION. *(Ger.)* Beduhn, D. (Surg. U. Cli Heidelberg, Germany) and J. Vollmar. *Radiologe* 10(8):304-309, 1970.

8851 IMMUNOHISTOCHEMICAL INVESTIGATIONS OF THE GASTRIC MUCOSA OF PATIENTS WITH PERNICIOU ANEMIA. *(Ger.)* Cieciura, L. (Acad. Med. Lodz, Poland) and I. Roszkowska-Giryn. *Acta Histochem* 36(2):303-307, 1970.

8852 ESOPHAGEAL JEJUNODUODENOPLASTY AFTER MASSIVE GASTRECTOMY FOR CANCER. *(It.)* Manfredi, D. (Grand Hosp. Viterbo, Italy). *Gass Int Med Chir* 75(8):581-588, 1970.

8853 INTRAMURAL GASTRIC NEURINOMA. *(It.)* Leo, F. (Zonal Hosp. Giarre, Catania, Italy) and V. Pennisi. *Gazz Int Med Chir* 75(7):547-568, 1970.

8854 MALIGNANT PRIMARY LYMPHOGRANULOMA OF THE STOMACH: CONTRIBUTION TO A MODERN CLASSIFICATION. *(It.)* Capelli, A. (Inst. Anat., U. Bologna, Italy) and F. Bertoni. *Arch Ital Anat Istol Pat* 43(2-3):123-148, 1970.

8855 BEZOAR FORMATION AFTER GASTRIC SURGERY. *(Ger.)* Egger, G. (Med. U. Clin. Berne, Switzerland), P. Kerkhoven, K. Kupfer and F. Halter *Schweiz Med Wschr* 100(28):1224-1225, 1970.

8856 GASTRODUODENAL RESECTION WITH GASTROENTEROANASTOMOSIS ASSOCIATED WITH STENOSIS OF TRANSVERSE COLON. *(It.)* Crespi, C. (Galmarini Hosp., Tradate, Varese, Italy). *Minerva Med* 61(16) 775-777, 1970.

8857 A CASE OF GASTRIC LEIOMYOSARCOMA. DIAGNOSTIC AND THERAPEUTIC ASPECTS. *(Fr.)* Landois, J. (Armees, France) and G. Muret. *J Chir* 99(3):291-296, 1970.

8858 CARDIOSPASM FOLLOWING SELECTIVE GASTRIC VAGOTOMY. *(Ger.)* Roth, H. (Canton Hosp. Munsterlingen, Switzerland). *Schweiz Med Wschr* 100(28):1232-1233, 1970.

8859 TREATMENT OF DUODENAL DIVERTICULA. *(Ger.)* Kothe, W. (Surg. Clin. Karl Marx U., eipzig, Germany), K. Nowotny and H. Albert. *Zbl hir* 95(26):763-767, 1970.

8860 STOMACH AND INTESTINAL HEMORRHAGE DUE TO DIGITALIS INTOXICATION. *(Ger.)* yrieleis, C. (Path. Inst. U. Gottingen, Germany) nd M. Kraft. *Med Klin* 65(35):1527-1529, 1970.

8861 PROPHYLACTIC EXAMINATION FOR GASTRIC CARCINOMA IN GERMANY. *(Ger.)* Schafer, P. K. Steglitz Clin., Free U. Berlin, Germany), B. Mikat, . Knochelmann, W. Bergemann and H. Oshima. *Deutsch ed J* 21(15):996-999, 1970.

8862 A NEW METHOD FOR LONGLASTING NEUTRALIZATION OF GASTRIC HYPERSECRETION. *(Ger.)* omatis, H. P. (Surg. Clin. Ausburg, Germany) and . Gumrich. *Med Welt* 21(33):1411-1415, 1970.

8863 A NEW DIGESTIVE AGENT. *(Ger.)* Barschneider, M. (Fabrik Putter K. G., Iserlohn, Germany). *Allgemeinmed* 46(22):1128-1129, 1970.

8864 TREATING A GASTROSTOMY OPENING: REPORT ON A TECHNIQUE. *(E.)* Helmbold, A. F. W. Summerville, S. Car.). *J Abdom Surg* 12(10):184-85, 1970.

8865 DELAYED POST-GASTRECTOMY HEMORRHAGE. *(E.)* Brooks, P. T. (Walla Walla, Wash.). *Amer urg* 36(10):639-641, 1970.

8866 IATROGENIC GASTRODUODENAL HEMORRHAGE. *(Sp.)* Magdalena Castineira, C. (Munic osp. Vigo, Spain). *Rev Esp Enferm Apar Dig* 32(2): 49-154, 1970.

8867 BENIGN GASTRODUODENAL TUMORS. *(Fr.)* Grimoud, M. (Toulouse, France). *Lyon Chir* 56(3):161-163, 1970.

8868 ELECTROLYTE MEASUREMENTS IN FLUID LOSS FROM THE UPPER GASTROINTESTINAL TRACT. *(Fr.)* Gouin, F. (no affil), J. Figarella, J. C. anelli and F. Dubouloz. *Anesth Analg* 27(4):621-630, 1970.

8869 CALCIFICATION OF GASTRIC LEIOMYOMA: TWO CASES. *(Sp.)* Rupierez Polo, S. (City oc. Sec. Sanit., La Paz, Bolivia), E. Hitos Natera, . E. Miguel De Velasco, J. L. Santamaria Garcia, and E. Soleto Saez. *Rev Esp Enferm Apar Dig* 32(2): 155-178, 1970.

8870 PARTIAL GASTRECTOMY. *(Por.)* Castelfranchi, P. L. (Fac. Med. U. San Paulo, Brazil), R. Cenevida and J. L. P. Modena. *Arq Gastroent* 7(2): 67-72, 1970.

8871 STOMACH DIVERTICULUM. *(Fr.)* Ionescu, D. (Bucarest, Rumania) and J. Rosenfeld. *J Radiol Electr* 51(6-7):387-388, 1970.

8872 PRIMITIVE CANCER OF THE GASTRIC STUMP AFTER GASTRECTOMY FOR ULCER. *(Fr.)* Stanciu, G. (Tirgu-Mures, Rumania). *J Radiol Electr* 51(6-7): 379-384, 1970.

8873 ANATOMICAL AND RADIOLOGICAL COMPARISON OF RARE DUODENAL LESIONS. *(Fr.)* Mainguet, P. (Brussels, Belgium). *Acta Gastroent Belg* 33(2):189-199, 1970.

8874 CANCER OF THE STOMACH. *(Fr.)* Girard, M. (no affil). *J Med Lyon* (1186):1139-1152, 1970.

8875 CYST OF GASTRIC WALL. *(It.)* Galeone, M. (1st Surg. Clin., U. Milan, Italy), A. Augusti and G. Fichera. *Minerva Chir* 25(11):812-816, 1970.

8876 LIVER CANCER SECONDARY TO STOMACH CANCER: PRESENCE OF α-FETOPROTEIN. *(Fr.)* Bourreille J. (Hosp. Boisguillaume, Rouen, France), P. Metayer, F. Sauger, F. Matray and A. Fondimare. *Presse Med* 78(28):1277-1278, 1970.

8877 EXPERIMENTAL UPPER GASTROINTESTINAL HEMORRHAGE, PRODUCTION BY DISSEMINATED INTRAVASCULAR COAGULATION AND MODIFICATION BY VASOACTIVE AGENTS. *(E.)* Linder, M. M. (San Francisco Gen. Hosp., U. California) and D. G. McKay. *Z Exp Chir* 3(2):128-133, 1970.

8878 GASTRIC ACID SECRETION AFTER STIMULATION WITH BETAZOLE HYDROCHLORIDE IN 117 SUBJECTS. *(It.)* Dal Monte, P. R. (Inst. Med. U. Bologna, Italy), A. Faenza, A. Cunsolo and E. Fiore. *G Clin Med* 51(5):424-445, 1970.

o P:Absorp (8552)
o P:Secr:Stom (8595)
o Diagproc (8708)(8709)(8711)(8713)(8717)(8727)
  (8730)(8735)(8742)(8743)(8759)(8760)(8762)
  (8766)(8774)(8776)(8785)(8789)
o D:Esoph (8818)(8819)(8820)
o D:Stomduo:Peptulc (8884)(8893)
o D:S.Intest:Regent (8926)
o D:Pancreas (9002)(9004)(9005)
o D:Livbil:A.V.Hep (9136)
o D:Livbil:Gallb (9178)(9199)
o D:Gen (9222)(9227)

8879 ALCIAN BLUE BINDING PROPERTIES OF GASTRIC JUICE. *(E.)* Piper, D. W. (Roy. North Shore Hosp., Sydney, Australia), D. Whitecross, P. Leonard and A. Clarke. *Gastroenterology* 58(4):534-538, 1970.

Alcian blue binding properties were studied by a precipitation method at pH 5.8 in 10 normal subjects and in 13 patients with gastric ulcer, 7 patients with duodenal ulcer and 6 patients with gastric carcinoma. Gastric juice of peptic ulcer patients was characterized by an increased ability to bind the anionic dye Alcian blue and there was a qualitative change in gastric juice of patients with chronic peptic ulcer, especially chronic duodenal ulcer. The gastric juice of duodenal ulcer patients differed from that of controls whether dye binding was expressed in terms of gastric juice volume, protein content, or sialic acid content at the higher dye concentration. The gastric juice of gastric ulcer patients differed from controls when dye binding capacity was expressed in terms of volume of gastric juice both at low and at high dye concentrations. The carcinoma group did not differ statistically from controls, nor did the gastric ulcer group differ statistically from the duodenal ulcer group. If excess dye binding is due to abnormality of mucous secretion (associated with peptic ulceration), several explanations are possible: First, abnormal mucous may seemingly less effectively protect the mucosa by its mechanical or antipeptic actions. Second, abnormal mucous may indicate a biochemical abnormality of gastric mucosal cells. Third, changes observed in gastric juice may be secondary to ulceration.

8880 SELECTIVE VAGOTOMY OF THE PARIETAL CELL MASS PRESERVING INNERVATION OF THE UNDRAINED ANTRUM: A PRELIMINARY REPORT OF RESULTS IN PATIENTS WITH DUODENAL ULCER. *(E.)* Amdrup, E. (Commun. Hosp., Copenhagen, Denmark) and H. E. Jensen. *Gastroenterology* 59(4):522-527, 1970.

Selective vagotomy of the parietal cell mass preserving the innervation of the undrained antrum was described in 22 patients with hyperacidity and duodenal ulcer. No postoperative complications or gastric stasis, ulcer pain, acid regurgitation dumping, or diarrhea have occurred. Repeated survey exposures and cinematography in 14 patients demonstrated no change in antral motility and gastric emptying. The fasting secretion volume (15 min aspirate immediately after intubation) was reduced 39%; the basal secretion (aspirate over 1 hr) showed an 87% reduction in acid content. The reduction in pentapeptide activated acid secretion was 62%, and spontaneous acid secretion and insulin-provoked acid secretion was reduced by about 90%. Early results of surgical procedure were promising in that ulcer pain and acid regurgitation have been completely relieved.

8881 SELECTIVE SURGERY FOR CHRONIC GASTRIC AND DUODENAL ULCERS. *(E.)* Muto, T. (U. Niigata Sch. Med., Japan), M. Banba and T. Sakai. *J Abdom Surg* 12(10):179-183, 1970.

8882 THE SURGERY OF PEPTIC ULCER: A REVIEW. *(E.)* Robinson, J. O. (London Clin., England). *London Clin Med J* 11(2):23-28, 1970.

8883 DIAGNOSIS AND MANAGEMENT OF MASSIVE HEMORRHAGE FROM POSTOPERATIVE STRESS ULCERS OF THE DESCENDING DUODENUM. *(E.)* Blakemore, W. S. (U. Pennsylvania Sch. Med., Philadelphia), S. Baum and M. Nusbaum. *Surg Clin N Amer* 50(5):979-984, 19

8884 GASTRIC RESECTION IN DUODENAL ULCER. *(Ru* Skopets, M.D. (Saratov Reg. Hosp., USSR) *Klin Khir* (342):21-25, 1970.

8885 ATYPICAL FORMS OF BLEEDING PERFORATIVE GASTRIC AND DUODENAL ULCERS. *(Rus.)* Kalchenko, I. I. (2nd Inst. Postgrad. Med., Trainin Kiev, USSR) and I. P. Sarnitsky. *Klin Khir* (343): 7-13, 1970.

8886 HISTAMINE AND INSULIN-STIMULATED ACID AND PEPSIN SECRETION IN PATIENTS WITH DUODENA ULCERS AND NORMAL SUBJECTS. *(Ger.)* Schmidt. H. A (Med. U. Clin. Marburg, Germany), G. Fritzlar, W. Dolle and H. Goebell. *Deutsch Med Wschr* 95(40):201 2016, 1970.

8887 CLINICAL AND EXPERIMENTAL STUDIES ON THE ANTI-ULCER EFFECT OF SULPIRIDE: I. CLIN CAL APPLICATIONS OF SULPIRIDE. *(Jap.)* Miyoshi, A. (Fac. Med., Kyoto U., Japan), M. Moriga, T. Miyake, Y. Yamamoto and T. Suzaki. *Jap Arch Intern Med* 17(2):41-56, 1970.

8888 CLINICAL AND EXPERIMENTAL STUDIES ON THE ANTI-ULCER EFFECT OF SULPIRIDE: II. THE EFFECT OF SULPIRIDE ON GASTRIC EMPTYING TIME. *(Jap.* Miyoshi, A. (Fac. Med. Kyoto U., Japan) and M. Mor *Jap Arch Intern Med* 17(2):57-62, 1970.

8889 PEPTIC ULCER PERFORATION INTO THE PERITO AFTER GASTRECTOMY. *(It.)* Crespi, C. (Galmarini Hosp., Tradate, Varese, Italy). *Minerv Med* 61(16):772-774, 1970.

8890 BLEEDING GASTRIC AND DUODENAL ULCERS IN CHILDREN. *(Rus.)* Doletsky, S. Ya. (Moscow, U.S.S.R.), I. G. Klimkovich and R. V. Zherebtsova. *Khirurgiia* 46(7):3-9, 1970.

8891 ENDOSCOPIC STUDY OF GASTRIC ULCER HEALIN *(Ger.)* Clemencon, G. (Olten, Switzerlan *Schweiz Med Wschr* 100(28):1215-1216, 1970.

8892 SPLANCHNICECTOMY COMBINED WITH VAGOTOMY IN TREATMENT OF DUODENAL ULCER. *(It.)* De Marzo, V. (Gen. Surg. Clin., U. Milan, Italy),

S. B. Doldi and P. G. Zanoli. *Minerva Chir* 25(6): 465-468, 1970.

8893 GASTRODUODENAL ANASTOMOSIS AFTER 2/3 GASTRECTOMY FOR PEPTIC ULCER. *(Fr.)* Kuhlmann, N. (C.H.U. Oran, France), F. Renaud, M. Billieres, A. Kazdali, S. Hammou, A. Aissaoui and F. Lopez-Rodriguez. *Strasbourg Med* 20(10):887-900, 1970.

8894 POSTANASTOMOTIC PEPTIC ULCERS: WITH REFERENCE TO 50 CASES. *(Fr.)* De Lagausie, P. (Hosp. Beaujon, Clichy, France), M. Huguier, D. Prandi and J. L. Lortat-Jacob. *J Chir* 99(5-6):503-510, 1970.

8895 GASTRODUODENAL ULCER OF THE YOUNG ADULT 18 YEARS OF AGE: INCIDENCE AND DETECTION AMONG A POPULATION OF 43,252. *(Fr.)* Freyria, J. (Hosp. Army Desgennettes, Lyon, France), D. Weimann, J. P. Poirot and P. Duterte. *Lyon Med* 223(22):1113-1116, 1970.

o P:Secr:Stom (8584)
o Diagproc (8787)(8789)
o D:Stomduo (8858)(8862)(8872)
o D:Livbil:Gallb (9177)
o D:Gen (9252)

SMALL INTESTINE

8896 BACTERIAL MODIFICATION OF TAUROCHOLATE DURING ENTEROHEPATIC RECIRCULATION IN NORMAL MAN AND PATIENTS WITH SMALL INTESTINAL DISEASE. *(E.)* Garbutt, J. T. (Duke U. Med. Ctr., Durham, N.C.), R. M. Wilkins, Lack, L. and M. P. Tyor. *Gastroenterology* 59(4):553-566, 1970.

The bacterial metabolism of the primary bile acid, taurocholate, was studied during enterohepatic circulation in 18 patients with ileal disorders, 5 patients with disorders primarily involving the proximal small intestine, and 4 student volunteers serving as controls. Following i.v. taurocholate-24-^{14}C, the chemical composition of the total ^{14}C radioactivity was determined in serial samples of duodenal fluid. Modification of taurocholate contributed materially to maintenance of enterohepatic circulation of bile acids in normal adults, and administration of tetracycline reduced enterohepatic circulation. The major transformation was deconjugation *per se*, resulting in presence of reconjugated trihydroxy bile acids in the enterohepatic space. In patients with severe ileal disorders, there was loss of capacity to recirculate not only taurocholic acid, but also its metabolized products. The presence of small bowel stasis enhanced the ability of some patients to recirculate small amounts of metabolized bile acids (glycine conjugate); obstructive bowel diseases favored the production of deoxycholic acid. In patients with Whipple's disease and nontropical sprue, the chief modification involved deconjugation and 7-δ-dehydroxylation, resulting in deoxycholic acid conjugates, whereas in patients with "blind loop" syndrome, deconjugation resulted mainly in cholic acid. An intact ileal transport mechanism appears to be of importance in maintaining enterohepatic circulation of primary and secondary bile acids.

8897 SMALL BOWEL INTUSSUSCEPTION DEMONSTRATED BY ORAL BARIUM. *(E.)* Wiot, J. F. (U. Cincinnati Med. Ctr., O.) and H. B. Spitz. *Radiology* 97(2):361-366, 1970.

Four cases (adults) of small bowel intussusception were studied roentgenographically, using p.o. barium. Roentgen characteristics showed the proximal intestine greatly dilated with a sudden beak-like change in caliber at the site of obstruction as the central canal of the intussusceptum fills. The central canal was visualized for only a short distance if the obstruction was complete; with incomplete obstruction, a longer segment of the central canal was demonstrated. The lead mass when present (in 2 of the 4 cases reported) was shown as the barium passed through the central canal and entered the normal bowel distal to the lesion. Diagnostic difficulty occurred when edema was severe enough so that there was complete proximal obstruction and the central canal failed to fill. The cause of small intestinal obstruction cannot be distinguished roentgenographically although diagnosis of this condition can be made from a barium study.

8898 INTESTINAL OBSTRUCTION IN PATIENTS RECEIVING ANTICOAGULANTS. *(E.)* Crisler, C. (U. Pittsburgh Sch. Med., Pa.), E. S. Stafford and G. D. Zuidema. *Surg Clin N Amer* 50(5):1009-1013, 1970.

8899 PRIMARY CARCINOMA OF THE JEJUNUM. *(E.)* Ghosh, B. (West Suburban Hosp., Chicago, Ill.) and J. B. Moles. *J Abdom Surg* 12(10):176-178, 1970.

8900 PRIMARY ADENOCARCINOMA OF THE JEJUNUM: REPORT OF A CASE. *(E.)* Peterson, H. C. (Mercy Hosp., Des Moines, Iowa) and W. J. Morrisey. *J Iowa Med Soc* 60(10):696-699, 1970.

8901 PHYSIOPATHOLOGICAL DISORDERS IN MASSIVE RESECTION OF THE SMALL INTESTINE. REPORT OF 2 CASES. *(Sp.)* Mir Pallardo, J. (City Soc. Sec. Sanit., La Fe, Valencia, Spain), M. Munoz Ibanez, P. Sendra Leon and S. Gomez Iglesias. *Rev Esp Enferm Apar Dig* 32(2):123-138, 1970.

8902 SURGICAL MANAGEMENT OF TYPHOID PERFORATION OF THE ILEUM. *(E.)* Dawson, J. H. (U. Washington Sch. Med., Seattle). *Amer Surg* 36(10):620-622, 1970.

8903 TACTICAL DECISIONS IN HIGH-OUTPUT SMALL BOWEL FISTULA. *(E.)* Oliver, R. I. (U. Mississippi Med. Ctr., Jackson) and J. D. Hardy. *Surg Clin N Amer* 50(5):1141-1149, 1970.

8904 REPAIR OF A LARGE INCISIONAL HERNIA IN THE PRESENCE OF IRREDUCIBLE BOWEL. *(E.)* Usher, F. C. (Baylor U. Coll. Med., Houston, Tex.). *Surg Clin N Amer* 50(5):1171-1176, 1970.

8905 DIETARY AND DRUG THERAPY OF PATIENTS WITH EXTENDED SMALL INTESTINE RESECTION. *(Fr.)* Paris, J. (C.H.U., Lille, France). *Ann Chir* 24(9-10):551-554, 1970.

8906 SEGMENTAL INVERSIONS OF THE SMALL INTESTINE: PHYSIOPATHOLOGY. *(Fr.)* Grenier, J. F. (C.H.U. Strasbourg, France), G. Sava and M. Gillet. *Ann Chir* 24(9-10):544-550, 1970.

8907 ARTERIOGRAPHY OF TUMORS OF THE SMALL INTESTINE: 3 CASES OF SCHWANNOMA. *(Fr.)* Capdeville, R. (Hosp. City U., Paris, France), J. Bennet, F. Dubois and J. Toulet. *Arch Franc Mal Appar Dig* 59(7-8):453-462, 1970.

8908 PEUTZ-JEGHERS SYNDROME. *(Ger.)* Simonyi, I. (Gyali Hosp., Budapest, Hungary), J. Horvath and T. Balazs. *Wien Z Inn Med* 51(5):236-240, 1970.

8909 PNEUMATOSIS CYSTOIDES INTESTINALIS. *(Ger.)* Czech, W. (Radiol. Diagn. Inst., U. Vienna Austria) and G. Canigiani. *Radiologe* 10(8):338-341, 1970.

8910 A CASE OF INTESTINAL LEIOMYOMA CAUSED BY A MASSIVE MELENA. *(Jap.)* Kaneko, K. (Sch. Med. Showa U., Japan), R. Aoki, K. Kinohira, T. Kawa Y. Nishimura, H. Maida, K. Nomura, K. Ri and S. Naoe *J Showa Med Ass* 30(2):59-62, 1970.

8911 RECURRENT INVAGINATION DURING DYSPEPSIA. *(Ger.)* Voigt, G. (Eisleben Reg. Hosp., Germany). *Kinderaertzl Prax* 38(8):351-355, 1970.

8912 VOLVULUS OF THE SMALL INTESTINE DUE TO PERFORATION OF A DOUBLE JEJUNAL DIVERTICULUM WITH LEIOMYOFIBROMA. *(It.)* Condurso, R. (Inst. Surg. Anat., U. Naples, Italy) and M. Monaco. *Rass Int Clin Ter* 50(9):538-545, 1970.

8913 MECKEL'S DIVERTICUM AND COMPLICATIONS DUE TO FOREIGN BODIES. *(Ger.)* Radloff, H. (St. Hosp. Urban, Berlin, Germany). *Deutsch Med J* 21(14):939-942, 1970.

8914 EXTENDED RESECTIONS OF THE SMALL INTESTIN PHYSIOPATHOLOGY. *(Fr.)* Grenier, J. F. (C.H.U. Strasbourg, France), G. Sava and M. Gillet. *Ann Chir* 24(9-10):537-544, 1970.

8915 EXTENDED RESECTIONS OF THE SMALL INTESTIN A CLINICAL STUDY. *(Fr.)* Hollender, L. F (C.H.U. Strasbourg, France) and G. Sava. *Ann Chir* 24(9-10):529-534, 1970.

8916 EXTENDED RESECTIONS OF THE SMALL INTESTIN IN ADULTS. I. DEFINITION. *(Fr.)* Proye, (City Hosp., Lille, France) and M. Vankemmel. *Ann Chir* 24(9-10):516-521, 1970.

8917 SEQUELAE OF MASSIVE SMALL INTESTINE RESEC TION INDICATIONS FOR SEGMENTAL INVERSION. *(Fr.)* Hollender, L. F. (C.H.U. Strasbourg, France) *Ann Chir* 24(9-10):582-585, 1970.

8918 MASSIVE RESECTION OF SMALL INTESTINE: SURGICAL TREATMENT OF SEQUELAE. *(Fr.)* Larrieu, H. (Hosp. Broussais, Paris, France) and F. Adle. *Ann Chir* 24(9-10):568-569, 1970.

8919 THE SURGICAL PROBLEM OF MASSIVE RESECTION OF THE SMALL INTESTINE. *(Fr.)* Garbay, M. (Hosp. Broussals, Paris, France) and M. De Ladonchamps. *Ann Chir* 24(9-10):563-568, 1970.

8920 DIET AND MEDICAL TREATMENT AFTER EXTENDED RESECTIONS OF THE SMALL INTESTINE. *(Fr.)* Tremolieres, J. (Hosp. Bichat, Paris, France), E. Pequignot, C. Sautier and C. Randriamanana. *Ann Chir* 24(9-10):555-558, 1970.

- Diagproc (8712)(8739)(8764)
- D:L.Intest (8941)(8958)(8974)(8981)
- D:Livbil:Cirrh (9155)
- D:Gen (9201)(9204)(9206)(9232)(9257)

SMALL INTESTINE

Regional Enteritis

8921 SYMPTOMATIC HYPOMAGNESEMIA COMPLICATING REGIONAL ENTERITIS. *(E.)* Kirsner, J. B. (Dept. Med., U. Chicago, Ill.), D. A. Morowitz and K. Gerlach. *Gastroenterology* 59(4):567-574, 1970.

The pertinent clinical features were described for four male and female patients aged 42 to 54 yr, with Crohn's disease of the small bowel, or small bowel and colon, and who also developed symptomatic hypomagnesemia with symptoms and signs similar to those induced in experimental animals by magnesium-deficient diet. The clinical features of magnesium deficiency in the patients were widely variable and were poorly correlated with plasma magnesium levels. Symptoms and signs were non-specific and varied from mild hyperirritability and paresthesia to coma and grand mal seizures. Other signs and symptoms included positive Babinski responses, tetany, muscular tremor, athetoid movements, weakness, vertigo, confusion and hallucinations. Patients with inflammatory bowel disease were disposed to the development of hypomagnesemia either as a result of the underlying disease or as a consequence of therapy with mercurial diuretics or corticosteroids. The symptoms of hypomagnesemia are reversible, and therapy consists of injections of magnesium sulfate (50%, 1 g every 3 to 6 hr until improvement occurs) to replace the large total body deficit.

8922 A CASE OF REGIONAL ENTERITIS WITH DUODENO-JEJUNAL LOCALIZATION. *(It.)* Germena, C. (Dept. Radiol., U. Turin, Italy) and A. Bessone. *Minerva Radiol* 15(3):64-67, 1970.

8923 CROHN'S DISEASE: PRESENT CONCEPTS ON ETIOLOGY, PATHOGENESIS, SYMPTOMATOLOGY AND THERAPY. *(It.)* Sbriccoli, A. (Inst. Clin. Surg. Gen, Surg. Ther., U. Bologna, Italy). *Rass Int Clin Ter* 50(4):191-217, 1970.

8924 TERMINAL ILEITIS AND TAKAYASU DISEASE. *(Fr.)* Gateau, P. (Hosp. St. Antone, Paris, France), Y. Hecht and J. Caroli. *Rev Medicochir Mal Foie* 45(3):135-142, 1970.

8925 A CASE OF EXTENDED RESECTION OF THE SMALL INTESTINE IN CROHN'S DISEASE. DIETARY TREATMENT AND PHOSPHORUS AND CALCIUM METABOLISM. *(Fr.)* Fiasse, R. (U. Clin. St. Pierre, Belgium), P. J. Kestens, L. De Raeymaeker, J. P. Huaux and C. Nagant De Deuzchaisnes. *Ann Chir* 24(9-10): 559-563, 1970.

8926 REGIONAL ENTERITIS LOCATED IN THE DUODENUM. *(Fr.)* Engelholm, L. (Hosp. U. Brugmann, Belgium), P. Mainguet, P. Deschamps, J. P. Peeters, R. Buchin and P. Potvliege. *Acta Gastroent Belg* 33(2):179-188, 1970.

8927 SECONDARY HEMOLYTIC ANEMIA IN CROHN'S DISEASE. *(Ger.)* Selgrad, P. (St. Hosp. Wuppertal, Germany), C. Elbers and G. Gehrmann. *Deutsch Med Wschr* 95(33):1675-1676, 1970.

- P:Absorp (8552)
- D:Stomduo (8873)
- D:S.Intest (8896)
- D:L.Intest:Ulccol (8989)(8993)

Malabsorption

8928 INDICATOR DILUTION STUDIES IN THE SMALL BOWEL OF PATIENTS WITH CHOLERA DIARRHEA: II. COMPARISONS OF ABSORBABLE AND "POORLY ABSORBABLE" SUBSTANCES. *(E.)* Brigham, K. L. (Vanderbilt U., Sch. Med., Nashville, Tenn.), J. G. Banwell, N. F. Pierce, R. C. Mitra, D. S. Fedson and A. Mondal. *Johns Hopkins Med J* 127(2):107-118, 1970.

Comparisons of absorbable and poorly absorbable substances in the small bowel of patients suffering from acute cholera and during convalescence were made using the indicator dilution technique. Chromium^{51}-labeled EDTA exhibited larger areas on the time-concentration curve than did BSP in both the jejunal and ileal segments suggesting that chromium^{51} EDTA may be a better marker substance. When Co^{57}-labeled vitamin B_{12} was used with BSP in the jejunum, the areas were more comparable (both substances may be equally reliable as markers in this segment) but the mean transit times and volumes were slightly greater for BSP (9.75 and 61.60, resp.) than for vitamin B_{12} (8.82 and 56.12, resp.). In the ileal segment the ratio of vitamin B_{12} area to BSP area was less than 1 in 4 out of the 6 studies indicating that the vitamin B_{12} was absorbed; this ratio decreased during convalescence period indicating that more vitamin B_{12} was lost from the segment during that time. In 4 out of 5 studies with vitamin B_{12} and d-xylose, the ratio of d-xylose area to vitamin B_{12} area was less than 1 in the jejunum (indicating that d-xylose was lost from the system during transit through the test segment) and this ratio was apparently linearly related to segment volume (the loss of d-xylose was greater with increasing volume).

8929 INTESTINAL DIPEPTIDASES AND DISACCHARIDASES IN CELIAC DISEASE IN ADULTS. *(E.)* Lindberg, T. (Dept. Path., U. Lund, Sweden), N. O. Berg, A. Dahlqvist and A. Norden. *Gastroenterology* 59(4):575-582, 1970.

Intestinal dipeptidases (8 substrates) and disaccharidases (5 substrates) were studied in 12 patients with celiac syndrome who improved on gluten-free diet and in 6 patients with a similar disorder who failed to improve on a gluten-free diet; 37 patients with histologically normal intestinal mucosa served as controls. All enzyme activities were reduced in both the gluten responsive and the nonresponsive celiac group. Peptidyl-proline dipeptidase activities were reduced to approximately 30% of mean activities in control group and the other dipeptidase activities to about 50%. Most patients in the non-treated group showed low or subnormal dipeptidase activities on glycyl-L-leucine (48% of corresponding mean values for reference group), glycyl-L-valine (52%), L-alanyl-L-glutamic acid (55%), L-valyl-L-glutamic acid (51%) and L-glutamyl-L-valine (30%). No differences occurred between the gluten and non-gluten responsive groups. In 6 patients following a strict gluten-free diet, the increase in activity was statistically significant for all peptidases with the exception of two peptidyl-proline dipeptidases (L-valyl-L-proline (29%) and L-glutamyl-L-proline (33%)); the disaccharidase activities corresponded to 10-20% of these values in the control group. After the gluten-free diet, the responsive group showed only slight improvement in the peptidyl-proline dipeptidase, maltase (25%), isomaltase (20%), and sucrase (21%) activities, whereas the other dipeptidase activities increased considerably. Trehalase and lactase were unchanged during the observation period. The decrease of intestinal disaccharidases and dipeptidases found in celiac disease is seemingly a phenomenon secondary to the primary damage of the mucosa.

8930 MUSHROOM INTOLERANCE THROUGH SELECTIVE TREHALOSE MALABSORPTION: A NEW AND RARE SYNDROME. *(Fr.)* Bergoz, R. (U. Med. Clin., Geneva, Switzerland) and A. Righetti. *Schweiz Med Wschr* 100(28):1244-1245, 1970.

8931 CYTOCHEMISTRY OF THE HUMAN JEJUNAL MUCOS IN THE NORM AND IN THE MALABSORPTION SYNDROME. *(E.)* Lojda, Z. (1st Dept. Path., Charles U. Prague, Czechoslovakia), P. Fric, J. Jodl and V. Chmelik. *Curr Top Path* 52:1-63, 1970.

8932 THE EFFECT OF LACTASE ON LACTOSE ABSORPTION. *(Jap.)* Onishi, S. (Nagoya City U. Med. Sch., Japan), K. Shimizu, T. Yamakawa, T. Kato, M. Fujikake and H. Inagaki. *J Nagoya City Univ Med Ass* 21(2):126-133, 1970.

8933 SIMULTANEOUS INVESTIGATION OF LACTASE ACTIVITY AND LIPID ABSORPTION IN THE INTESTINAL MUCOSA: AN ATTEMPT TO APPLY THIS TO VARIOU PATHOLOGICAL CONDITIONS. *(Fr.)* Gouin, B. (Hosp. Bichat, Paris, France), J. Ducier, M. Cerf, C. Marche and C. Debray. *Presse Med* 78(37):1619-1623, 1970.

8934 LACTOSE INTOLERANCE AND ULCERATIVE COLITI *(Ger.)* Girtanner, R. E. (Med. U. Clin. Basel, Switzerland) and H. Fahrlander. *Schweiz Me Wschr* 100(28):1242-1243, 1970.

8935 THE RELATION OF MALABSORPTION SYNDROME T VARIOUS SKIN DISORDERS. *(Ger.)* Rozsival V. (Med. Fac., Karls U., Hradec Kralove, Czechoslovakia) and O. Komarkova. *Hautzart* 21(8): 369-371, 1970.

8936 CONGENITAL LYMPHEDEMA ASSOCIATED WITH CHRONIC STEATORRHEA. *(It.)* Masarone, M. (Fatebenefratelli Fatebenesorelle Hosp., Milano, Italy). *Minerva Pediat* 22(5):254-257, 1970.

8937 SOME ULTRAMICROSCOPICAL FEATURES OF THE INTESTINAL GLANDS BEFORE AND DURING ADMINISTRATION OF A GLUTEN-FREE DIET IN 2 CASES OF SPRUE. *(It.)* Dodero, M. (Dept. Clin. Med., U. Genoa, Italy), G. Celle, M. Canepa and P. Michetti *Minerva Gastroent* 16(3):131-135, 1970.

8938 THE ABSORPTION AND MALABSORPTION OF FOLIC ACID AND ITS POLYGLUTAMATES. *(E.)* Bernstein, L. H. (Lincoln Hosp., Bronx, N.Y.), S. Gutstein, S. Weiner and G. Efron. *Amer J Med* 48(5):570-579, 1970.

8939 COW MILK INTOLERANCE. *(Fr.)* Loth, P. (Hosp. St. Vincent De Paul, Paris, France), R. Caldera and A. Rossier. *Cah Med* 11(8):689-694, 1970.

o P:Absorp (8562)
o P:Gen (8697)
o Diagproc (8708)(8712)(8740)(8754)(8771)(8775)
o D:Stomduo (8851)
o D:S.Intest (8905)(8906)(8914)(8915)(8916)(8917)
o D:Livbil (9038)(9074)

LARGE INTESTINE

8940 ENZYME CYTOCHEMICAL AND ISOENZYME STUDIES OF NORMAL AND DISEASED RECTAL MUCOSA. *(E.)* Klein, U. E. (1st Med. Dept., U. Kiel, Germany) and H. C. Drube. *Amer J Proctol* 21(5):346-351, 1970.

Isoenzyme fractions of alkaline phosphatase, which is not traceable in normal or diseased rectal epithelium, were detected in homogenates of rectal carcinomatous tissue by electrophoretic analysis. Similar tumor phosphatase fractions appeared in the plasma of two patients. Some enzymes marking cellular organelles (non-specific esterase, succinate dehydrogenase and thiamine pyrophosphatase), when demonstrated cytochemically, showed different distribution patterns in normal rectal mucosal epithelium and in adenocarcinomas of the rectum. The appearance of a tumor-specific isoenzyme of alkaline phosphatase may lead to new diagnostic methods.

8941 MYXEDEMA CAUSING ADYNAMIC ILEUS, SEROUS EFFUSIONS, AND INAPPROPRIATE SECRETION OF ANTIDIURETIC HORMONE. *(E.)* Liechty, R. D. (U. Iowa Hosp., Iowa City), R. F. Miller and W. N. Cohen. *Surg Clin N Amer* 50(5):1087-1098, 1970.

Examination of a 48-yr-old woman with myxedema revealed the presence of three uncommon complications of hypothyroidism and myxedema: paralytic ileus, serous effusions and water intoxication. A preliminary diagnosis of pelvic carcinoma was made based upon the signs of bowel obstruction resulting from the paralytic ileus, pleural and peritoneal effusions resulting from the water and electrolyte imbalance, and the presence of an unrelated pelvic mass. The patient also showed a remarkable capacity to absorb large quantities of enema fluids, despite gross overhydration. The lowered serum sodium and the myxedematous water intoxication and serous effusions were related to an excessive secretion of anti-diuretic hormone (ADH). The patient was treated with thyroid hormone replacement and all secondary signs and symptoms of myxedema complications were reversed and disappeared.

8942 SIGMOIDO-RECTAL BLADDER IN CHILDREN. *(Ger.)* Hohenfellner, R. (Urol. U. Clin. Munich, Germany) and H. D. Wulff. *Z Kinderchir* 8(4):429-435, 1970.

8943 ANAL FISTULA: PATHOLOGICAL ANATOMY AND TREATMENT. *(Ger.)* Gemsenjager, E. (St. Clara Hosp., Basel, Switzerland). *Helvetia Chir Acta* 37(3):325-336, 1970.

8944 DIVERTICULAR DISEASE OF THE COLON. *(Nor.)* Fenger, C. (Copenhagen Commun. Hosp., Denmark), K. Ayholm and E. Amdrup. *Ugeskr Laeg* 132(38):1766-1771, 1970.

8945 BLUNT TRAUMA OF THE ABDOMEN WITH PERFORATION OF THE COLON. *(Ger.)* Bussman, J. F. (Mannheim Clin., U. Heidelberg, Germany). *Langenbeck Arch Chir* 326(4):323-336, 1970.

8946 COLOSTOMY -- MANAGEMENT AND CARE. *(Ger.)* Koch, G. (Surg. U. Clin., Hamburg, Germany). *Munchen Med Wschr* 112(36):1599-1602, 1970.

8947 RECTAL ULCER AND COLITIS CYSTICA PROFUNDA CIRCUMSCRIPTA. *(Ger.)* Rosch, W. (Med. Clin. U. Erlangen-Nuremberg, Germany) and P. Hermanek. *Fortschr Med* 88(28):1117-1120, 1970.

8948 CECAL TUMORS. *(Ger.)* Canigiani, G. (Radiol. Inst. U. Vienna, Austria) and G. Pusch. *Wien Klin Wschr* 82(36):613-615, 1970.

8949 A CASE OF STRANGULATED HERNIA OF THE TRANSVERSE COLON INTO LARREY'S SPACE. *(Fr.)* Gaux, J. C. (Hosp. Ambroise Pare, Boulogne, France), M. Blery and V. Bismuth. *Ann Radiol* 13(5-6):435-441, 1970.

8950 TREATMENT OF CONGENITAL MEGACOLON: CHOICE OF SURGICAL TECHNIQUE. *(Fr.)* Lasserre, J. (Hosp. Infants, Bordeaux, France), G. Saint-Supery, J. M. Bondonny and R. Letac. *Bordeaux Med* 3(6): 1539-1550, 1970.

8951 RECTO-COLONIC SURGERY. *(Fr.)* Ceulemans, G. (Antwerp, Belgium). *Acta Chir Belg* 69(2):132-140, 1970.

8952 HEMORRHOID THERAPY. *(Fr.)* Arnous, J. (Hosp. Leopold-Ballan, Paris, France). *Cah Med* 11(8):749-756, 1970.

8953 PULSATING INTRARECTAL TUMOR. *(Fr.)* Hecht, Y. (Hosp. St. Antoine, Paris, France), C. Hernadez and P. Hautefeuille. *Rev Medicochir Mal Foie* 45(3):149-150, 1970.

8954 SURGERY OF NEONATAL MEGACOLON, WITH REFERENCE TO 40 CASES. *(Fr.)* Beau, A. (C.H.U. Nancy, France), N. Neimann, J. Prevot and N. Bodart. *Ann Med Nancy* 9(2):107-112, 1970.

8955 HEMORRHOIDECTOMY: TECHNICAL IMPROVEMENTS. *(Fr.)* Ceulemans, G. (Antwerp, Belgium). *Acta Chir Belg* 69(2):141-144, 1970.

8956 CONSTIPATION AND COLITIS: TREATMENT WITH A COMBINATION OF BISMUTH SUBNITRATE AND KARAYA GUM. *(Fr.)* Gisselbrecht, H. (C.H.U. Besancon, France), C. Monange and D. Clement. *Lyon Med* 223(18): 951-958, 1970.

8957 DIVERTICULOSIS OF THE COLON: DEFICIENCIES OF ABDOMINAL MUSCULATURE. *(Fr.)* Bertrand, J. (C.H.U. Brettoneau. Tours, France) and A. Trestard. *Cah Med* 11(6):457-462, 1970.

8958 INTESTINAL TRANSPLANT. *(It.)* Valentini, S. B. (St. Giacomo Hosp., Rome, Italy) and G. Grassi. *Chir Gastroent* 4(2):209-217, 1970.

8959 LIGATURE OF INTERNAL HEMORRHOIDS. *(Ger.)* Baumgartner, R. (Winterthur, Switzerland). *Schweiz Med Wschr* 100(28):1249, 1970.

8960 ACUTE DIVERTICULITIS OF THE SIGMOID LEADING TO UTERINE PERFORATION. *(It.)* Rotondi, M. (Inst. Semeiotic Surg., U. Naples, Italy). *Rass Int Clin Ter* 50(9):533-537, 1970.

8961 CONGENITAL AGANGLIONIC MEGACOLON. *(It.)* Cagini, P. (S. G. Battista Hosp., Foligno, Italy). *Minerva Pediat* 22(12):563-567, 1970.

8962 SUBMUCOSAL LIPOMA OF CECUM. *(It.)* Leo, F. (Zonal Hosp. Giarre, Catania, Italy) and V. Pennisi. *Gass Int Med Chir* 75(8):601-611, 1970.

8963 SPONTANEOUS RUPTURE OF THE LARGE INTESTINE. *(Ger.)* Prauer, H. (Mittenwald Gen. Hosp., Germany). *Chirurg* 41(8):379-381, 1970.

8964 INTESTINAL OCCLUSION PRODUCED BY ENDOMETRIOSIS OF THE SIGMOID. *(It.)* Parenti, C. (Serbelloni Hosp., Gorgonzola, Italy) and A. Vetro. *Gass Int Med Chir* 75(1):52-61, 1970.

8965 CONTINENCE FUNCTION AFTER ANORECTAL SURGERY. *(Ger.)* Gemsenjager, E. (St. Clara Hosp., Basel, Switzerland). *Schweiz Med Wschr* 100(28):1250-1251, 1970.

8966 PRIMARY MEGARECTUM. *(Rus.)* Kushch, N. L. (Donetsk Med. Inst., USSR) and R. N. Mikhalchuk. *Klin Khir* (342):37-40, 1970.

8967 APPENDECTOMY WITH URETHRAL RUPTURE. *(Ger.)* Schulz, M. R. (Dist. Hosp. Brandenburg, Germany). *Zbl Chir* 95(35):1053-1058, 1970.

8968 FAMILIAL POLYPOSIS COLI: AN EXERCISE IN PREVENTIVE SURGERY. *(E.)* Missen, A. J. B. (St. Bartholomew's Hosp., London, England). *St Bartholomew Hosp J* 74(9):308-310, 1970.

8969 INVASIVE ENDOMETRIOSIS OF THE INTESTINE: REPORT OF 21 CASES. *(E.)* Elliott, G. B. (Vancouver Gen. Hosp., British Columbia, Canada), R. M. Christensen and K. A. Elliott. *Canad J. Surg* 13(4):387-395, 1970.

8970 COMBINED ABDOMINOPERINEAL EXCISION FOR CANCER OF THE RECTUM, PRIMARY SUTURE OF THE PERINEAL INCISION WITH CONTINUOUS SUCTION. *(E.)* McLachlin, A. D. (Fac. Med., U. Western Ontario, London, Canada) and D. A. MacKenzie. *Canad J Surg* 13(4):350-353, 1970.

8971 EXTENSIVE SURGERY IN TREATMENT OF CARCINOMA OF THE COLON. *(E.)* Jensen, H. E. (Commun. Hosp., Copenhagen, Denmark), I. Balslev amd J. Nielsen. *Acta Chir Scan* 136(5):431-434, 1970.

8972 THE PROBLEM OF CONTINENCE FOLLOWING PEDIATRIC OPERATIONS IN THE ANAL AND RECTAL AREA. *(E.)* Daum, R. (no affil), W. C. Hecker and W. Hissen. *Amer J Proctol* 21(5):352-359, 1970.

8973 SIGMOID MYOTOMY IN TREATMENT OF DIVERTICULAR DISEASE OF THE COLON. *(E.)* Jackson, P. P. (U. British Columbia Sch. Med., Vancouver, Canada). *Amer Surg* 36(10):607-609, 1970.

974 INCARCERATED FORAMEN OF WINSLOW HERNIA. *(E.)* Dainko, E. A. (San Bernadino Cty. en. Hosp., Calif.). *Surg Clin N Amer* 50(5):1015-020, 1970.

975 PELVIC SEPSIS RESULTING FROM DIVERTICULITIS. *(E.)* Colcock, B. P. (Lahey Clin. Found., oston, Mass.). *Surg Clin N Amer* 50(5):1003-1007, 970.

976 PERINEAL EXPOSURE OF THE RECTUM. *(E.)* Griffith, C. A. (U. Washington Sch. Med., eattle). *Amer Surg* 36(10):652-655, 1970.

977 SPONTANEOUS COLONIC PERFORATION: A COMPLICATION IN A HEMODIALYSIS PATIENT. *(E.)* oza, O. (Mt. Sinai Hosp. Cleveland, Ohio), J. E. ampliner, P. Cohn and M. K. Ghose. *JAMA* 214(1): 45, 1970.

978 VESICO-INTESTINAL FISSURE: ANATOMICAL AND CLINICAL VARIETIES. *(Fr.)* Boix-Ochoa, . (Child. Clin. Soc. Sec., Barcelona, Spain) and . M. Casasa. *Ann Chir Infant* 11(4):225-234, 1970.

979 ATRESIA OF THE COLON: DIAGNOSIS AND TREATMENT. *(Fr.)* Ingelrans, P. (Lille, France), . Lacheretz and P. Debeugny. *Ann Chir Infant* 11(4): 19-224, 1970.

980 ANORECTAL MELANOMA. *(Sp.)* Palma, F. (Prov. Hosp. Jaen, Spain). *Rev Esp Enferm Apar ig* 32(2):179-184, 1970.

981 INTESTINAL ENDOMETRIOSIS *(Ger.)* Klug, W. St. Joseph Stift Dresden, Germany). *Zbl Chir* 95(35): 047-1052, 1970.

982 AN EPIDEMIOLOGICAL AND STATISTICAL ENQUIRY INTO ANO-RECTAL LOCALIZATIONS OF VENEREAL ISEASES. *(Fr.)* Vilotte, M. J. (Paris, France). *rch Franc Mal Appar Dig* 59(suppl. to 7-8):3-8, 1970.

8983 ANO-RECTAL GONOCOCCI. *(Fr.)* Soullard, J. (Paris, France), B. Goiffon and N. Burkel. *Arch Franc Mal Appar Dig* 59(suppl. to 7-8):31-54, 1970.

8984 ANAL SYPHILIS. *(Fr.)* Delzant, M. O. (Hosp. St. Louis, Paris, France). *Arch Franc Mal Appar Dig* 59(suppl. to 7-8):13-30, 1970.

8985 A CASE OF VILLOUS TUMOR OF THE RECTOSIGMOID ASSOCIATED WITH POLYPOSIS. *(It.)* Tirelli, G. (Dept. Clin. Med., U. Genoa, Italy), G. Ciravegna and G. Gurreri. *Minerva Gastroent* 16(3):136-141, 1970.

8986 ANGIOGRAPHY IN REVERSIBLE COLONIC ISCHEMIA. *(E.)* Reuter, S. B. (Dept. Radiol., U. California, San Diego, La Jolla), I. E. Kanter and H. C. Redman. *Radiology* 97(2):371-375, 1970.

o Diagproc (8761)(8764)(8772)
o D:Stomduo (8856)
o D:S.Intest (8904)(8908)
o D:Gen (9206)(9232)

LARGE INTESTINE

Ulcerative Colitis

987 AN EXPERIENCE OF ULCERATIVE COLITIS: II. SHORT TERM OUTCOME. *(E.)* Sircus, W. Western Gen. Hosp., Edinburgh, Scotland), K. N. alan, R. J. Prescott, W. I. Card, J. P. A. McManus, . W. A. Falconer, W. P. Small, A. N. Smith and J. ruce. *Gastroenterology* 59(4):589-597, 1970.

The outcome of the first referred attack of ulcerative colitis was examined in relation to age, sex, severity, attack state, duration of disease, extent of involvement, complications, and hematological or biochemical abnormalities in 399 patients seen from 1950 to 1967 inclusive. Mortality increased with increasing age in severe cases (13% mortality from 0 to 24 yr, 26.9% from 25 to 49 yr, and 35.5% from 50 yr), but there was no significant difference between the sexes. Only 1 death (2.6%) occurred when the disease was mild or moderate, but 18 deaths (28%) occurred in severe cases, and higher mortality rates were associated with patients afflicted for less than 3 months (34.1%) than with the rest of the patients (13.6%) while the attack state, total length of history, and the degree of involvement apparently had no effect. Hypokalemia, increased alkaline phosphatase, and hypoalbuminemia, and liver disease (pericholangitis, cirrhosis, or fatty infiltration) were associated with increased mortality rates, but anemia, leucocytosis, eosinophilia, associated diverticular disease, ankylosing spondylitis, colitic arthropathy, and clubbing of the fingers had little effect on mortality.

8988 AN EXPERIENCE OF ULCERATIVE COLITIS: III. LONG TERM OUTCOME. *(E.)* Sircus, W. (Western Gen. Hosp., Edinburgh, Scotland), K. N. Jalan, R. J. Prescott, W. I. Card, J. P. A. McManus, M. B. Falconer, W. P. Small, A. N. Smith and J. Bruce. *Gastroenterology* 58(4):598-609, 1970.

The long-term prognosis of ulcerative colitis was determined by following the progress of 399 patients over 4 attacks with reference to the extent of ulcer involvement and the severity of each attack relative to the first referred attack, and long-term survival rates were calculated. Higher mortality rates were associated with increasing age at the time of the first referred attack (28.3% at 50 + yr compared to 7.4-15.0% below 50), the chronic continuous form of the disease (25.0% compared to 14.1% for the intermittent form), and increasing severity of the attack (31.6% compared to 15.5% for moderate and 4.5% for mild attacks). Radiological determination of the extent of involvement in at least 2 attacks per patient suggested an increase in the extent of involvement with subsequent attacks and correlation of the extent of the involvement with the severity of the first referred attack indicated that patients with entire involvement have a significantly higher proportion of mild subsequent attacks than those with partial involvement. Mortality rates were higher for patients moderately ill (2.49%) than for those severely (1.32%) or mildly (0.83%) ill and higher for patients with entire involvement (2.81%) than for those with only partial involvement (1.11%). The mortality for all patients with ulcerative colitis was 10% during the first year but after that fell to the normal expected fatality rate of 1%/yr. Patients undergoing surgery in the first attack had a higher mortality during the first yr due to immediate postoperative death, but the rates were high in later yrs. Patients with mild cases exhibited a survival rate with lower mortality than was observed for the general population; while patients with severe cases exhibited an initial high mortality rate which was reduced until after 10 yr at which time the curve was comparable to the moderately ill group.

8989 INFLAMMATORY DISEASE OF THE INTESTINE: ULCERATIVE COLITIS AND REGIONAL ENTERITIS. *(E.)* Wirts, C. W. (Jefferson Med. Coll., Philadelphia, Pa.) and L. P. Rosky. *Modern Med* 38(21):92-100, 1970.

8990 STATISTICS OF ULCERATIVE COLITIS: A CATAMNESTIC STUDY OF 229 PATIENTS. *(E.)* Demling, L. (Dept. Med., U. Erlangen-Nuremberg, Germany) and M. Classen. *Amer J Proctol* 21(5): 326-330, 1970.

8991 ULCERATIVE COLITIS: ETIOLOGIC UNITY OR POLYETIOLOGIC SYNDROME? *(E.)* Arend, P. (U. Hosp. Marburg, Germany) and G. A. Martini. *Amer J Proctol* 21(5):331-336, 1970.

8992 ANGIOGRAPHY IN ULCERATIVE COLITIS. *(Ger.)* Potocky, V. (2nd Med. Clin., Karls U., Prague, Czechoslovakia), V. Balcar and J. Serka. *Radiologe* 10(8):309-314, 1970.

8993 THROMBOCYTOSIS IN ULCERATIVE COLITIS AND CROHN'S DISEASE. *(Ger.)* Mohr, P. (Med. U. Clin. Zurich, Switzerland) and P. W. Straub. *Schweiz Med Wschr* 100(27):1142-1147, 1970.

8994 A COMPARISON OF THE HISTOLOGICAL, ENDOSCOPIC, AND CLINICAL FEATURES OF IDIOPATHIC HEMORRHAGIC ULCERATIVE COLITIS. *(It.)* Dodero, M. (Dept. Intern. Med., U. Genoa, Italy), G. Celle, P. Michetti and F. Neumaier. *Minerva Gastroent* 16(3):120-130, 1970.

8995 ABO(H) -- BLOOD GROUP ANTIBODIES IN IDIOPATHIC CHRONIC ULCERATIVE COLITIS. *(Ger.)* Arend, P. (Med. U. Clin. Marburg, Germany) and R. Niedner. *Klin Wschr* 48(18):1102-1107, 1970.

8996 LOWER MESENTERIC ARTERIO-VENOUS FISTULA AND ULCERATIVE RECTOCOLITIS. *(Fr.)* Foudard, C. (Hosp. Tenon, Paris, France), C. Helenon, J. F. Carles, R. Botella, M. Favre, J. Boulay and P. Boschet. *Arch Franc Mal Appar Dig* 59(7-8):463-474, 1970.

8997 COMBINED CONSERVATIVE THERAPY IN ULCERATIVE COLITIS. *(Ger.)* Curtius, F. (no affil). *Z Gastroent* 8(5):272-279, 1970.

8998 FULMINANT ULCERATIVE COLITIS WITH TOXIC MEGACOLON OF PSYCHOSOMATIC ETIOLOGY. *(It.)* Malaguti, P. (Major Hosp. C. A. Pizzardi, Bologna, Italy). *Minerva Med Giuliana* 9(4):201-204, 1970.

8999 CHOICE OF OPERATION FOR THE TOXIC MEGACOLON PHASE OF NONSPECIFIC ULCERATIVE
COLITIS. *(E.)* Turnbull, R. B. (Cleveland Clin.
Found., O.), F. L. Weakley, W. A. Hawk and P.
Schofield. *Surg Clin N Amer* 50(5):1151-1169, 1970.

o P:Absorp (8557)
o D:S.Intest:Malabs (8934)
o D:L.Intest (8947)

LARGE INTESTINE

Granulomatous Colitis

000 CROHN'S DISEASE OF THE COLON. *(Fr.)*
Loizeau, E. (Canton Hosp., Geneva,
witzerland). *Schweiz Med Wschr* 100(33):1416-1420,
970.

001 CROHN'S DISEASE IN THE COLON WITH PREDOMINANT ANAL AND PERINEAL LESIONS. *(Fr.)*
ivet, M. (Paris, France) and H. Harmeau. *Arch
Franc Mal Appar Dig* 59(7-8):481-488, 1970.

o D:S.Intest:Regent (8921)
o D:L.Intest:Ulccol (8992)

PANCREAS

002 HISTOLOGICAL CHANGES IN THE PANCREAS AFTER STOMACH OPERATIONS. *(Ger.)* Maier,
. (Path. Anat. Inst., U. Erlangen-Nuremberg, Germany)
nd K. Elster. *Z Gastroent* 8(5):291-303, 1970.

he histology of the pancreas after stomach operaions was investigated in 50 patients, 2/3 of whom ere operated on for duodenal or gastric ulcer, nd 1/3 for gastric carcinoma; the results were comared with findings obtained from 50 autopsy cases ithout obvious gastric disorders. Pancreatic fibrosis, inflammation and changes in the duct system, uch as dilation, retention of secretion and inreased size of papillary folds occurred twice as ften in patients who had undergone stomach operaions than in those who had not, but pancreatic ipomatosis was noted more often in the latter group. hese changes which are sometimes localized may be issed in diagnostic biopsy or postmortem preparaions of small pieces of pancreas.

9003 TWO-STAGE PROCEDURE FOR TOTAL PANCREATECTOMY IN THE RAT. *(E.)* Migliorini, R. H. (Sch.
Med. Ribeirao Preto, San Paulo, Brazil. *Diabetes*
19(10):694-697, 1970.

A method for pancreatectomizing rats in two stages was described. In the first stage, most of the gland was excised, including the pancreatic lobes along the bile duct and a small portion, sufficient to prevent the appearance of diabetes, was left near the spleen. In the second stage, performed several weeks later, the remaining pancreas was removed rapidly, with minimal surgical trauma and immediate onset of severe diabetes. Blood glucose increased to 207 mg/100 ml 2 hr after the operation and to 553 mg/ml at 24 hr, and the plasma free fatty acid levels increased abruptly and peaked at 1.89 μEq/ml after 2 hr. Plasma acetoacetate reached 48 mg/100 ml, and plasma triglycerides increased to 8.3 μmole/ml after 24 hr. This preparation appears to be very suitable for studying the metabolic effects of acute insulin deprivation.

9004 PANCREATODUODENAL RESECTION: PROPHYLAXIS OF ITS COMPLICATIONS. *(Rus.)* Linchenko, I. F. (Stavropol Med. Inst. USSR). *Klin Khir* (342): 25-30, 1970.

9005 BLEEDING SYNDROME DUE TO HETEROTOPIC PANCREAS IN PYLORIC ANTRUM. *(It.)* Fusco, A. (Central U. Naples, Italy). *Rass Int Clin Ter* 50(9):546-563, 1970.

9006 ANNULAR PANCREAS IN A PREMATURE INFANT. *(It.)* Bruera, F. (Inst. Clin. Surg. Gen., U. Pisa, Italy), P. Gianotti and F. Terrosi. *Riv Chir Pediat* 12(2):222-234, 1970.

9007 EXPERIMENTAL ALLOGRAFT OF THE PANCREAS: NATURAL DEVELOPMENT. *(It.)* Peracchia, A. (Dept. Surg., U. Parma, Italy), A. Gnudi, C. Bordi, P. Bobbio, G. Barboso, S. Morosini, A. Piancastelli, C. Coscelli, V. Palmari, P. Goffrini, U. Butturini and A. Tardini. *Gazz Sanit* 41(4-5):183-188, 1970.

9008 TRAUMATIC LESIONS OF THE PANCREAS: REPORT ON 8 CASES. *(Fr.)* Grimoud, M. (Toulouse, France), J. Escat, R. Saury, J. L. Gouzi and F. Lazorthes. *Lyon Chir* 66(3):180-183, 1970.

9009 TRAUMATIC FALSE CYST OF THE PANCREAS: GANGRENE OF THE LEG AND MYOCARDIAL ISCHEMIA. *(Fr.)* Paraf, A. (Hosp. Franco-Musulman, Bobigny, France), J. Rautureau and D. Sterin. *Ann Med Intern* 121(8-9):717-721, 1970.

9010 WEBER CHRISTIAN SYNDROME AND DISEASES OF THE PANCREAS. *(Fr.)* Thomas, M. (Hosp. St. Antoine, Paris, France), B. Maitrot, C. Julien, J. Plessier and J. Caroli. *Rev Medicochir Mal Foie* 45(3):153-164, 1970.

9011 CANCER OF THE PANCREAS: THORACIC (PULMONARY) INVOLVEMENT. *(Fr.)* Chavy, A. (Gustave Roussy Inst., Villejuif, France), A. Pierart and R. Piet. *Gazz Med France* 77(22):4742-4750, 1970.

9012 LIPASE LEVELS OF THE SERUM IN PANCREATIC DISEASES: DOSING METHODS. *(Fr.)* Oger, A. (Inst. Med. Liege, Belgium). *Acta Gastroent Belg.* 33(4-5):335-342, 1970.

9013 TRAUMA OF THE PANCREAS: 5 CASES. *(Fr.)* Jacquet, N. (Surg. Clin. U. Liege, Belgium), C. Hubin, W. Husquinet, J. M. Plancq, M. Beaujean and F. Orban. *Rev Med Liege* 25(16):515-523, 1970.

9014 ACUTE PANCREATIC LESIONS. *(Fr.)* Boutelier, P. (C. H. U. Pitie-Salpetriere, Paris, France), M. Berlinski and G. Edelmann. *Ann Chir* 24(11-12):637-645, 1970.

- P:Absorp (8552)
- P:Secr:Panc (8599)
- Diagproc (8705)(8729)(8734)(8736)(8751)(8765)(8768)(8790)
- D:Pancreas:Pancreat (9028)
- D:Livbil:Gallb (9178)(9193)
- D:Gen (9222)(9227)(9252)

PANCREAS

Pancreatitis

9015 DIAGNOSIS AND COURSE OF CHRONIC PANCREATITIS AND OF CHRONIC RELAPSING PANCREATITIS. *(Ger.)* Creutzfeldt, W. (Med. U. Clin. Gottingen, Germany), H. Fehr and H. Schmidt. *Schweiz Med Wschr* 100(28):1180-1189, 1970.

Clinical findings in 60 cases of chronic pancreatitis and of chronic relapsing pancreatitis investigated between 1964 and 1969 were compared with those seen in 42 cases of 2 other hospitals, and with literature reports. Diagnosis was based on progressive reduction of functional capacity and morphological changes as expression of permanent damage to the pancreas. Major diagnostic procedures were enzyme tests, especially the pancreozymin-secretin test, which yielded positive results in 45% of the cases, radiology, which revealed calcification in 33% and histo-pathological investigation of biopsy material, which confirmed the diagnosis in 22%. Alcoholism was present in 38% of all patients and in 55% of patients with calcifications. Two cases with pancreatitis of 17 years duration had both calcifications and carcinoma of the pancreas. Therapeutic operative procedures were carried out in 25 patients; laparotomy was performed twice in 9 patients and 3 times in one patient in order to alleviate pain.

9016 CHRONIC ALCOHOLIC PANCREATITIS. *(Ger.)* Liem, C. F. (Med. Clin. U. Basel, Switzerland). *Schweiz Med Wschr* 100(35):1473-1477, 1970.

9017 EXPERIMENTAL ACUTE PANCREATITIS. *(E.)* Wanke, M. (Inst. Path., U. Heidelberg, Germany). *Curr Top Path* 52:65-142, 1970.

9018 THE ETIOLOGY AND PATHOGENESIS OF ACUTE PANCREATITIS. *(E.)* Edlund, Y. (Sahlgrenska Hosp., Goteborg, Sweden). *Schweiz Med Wschr* 100(28): 1174-1178, 1970.

019 SPLANCHNICECTOMY IN CHRONIC PANCREATITIS: APPLICATION AND EFFECT. *(E.)* Vossschulte, . (Surg. Dept. U. Giessen, Germany) and E. Wagner. *innesota Med* 53(10):1053-1059, 1970.

020 CHRONIC PANCREATITIS AND NUTRITION. *(Fr.)* Capitaine, Y. (Marseilles, France) and H. arles. *Ther Umsch* 27(9):580-586, 1970.

021 TOTAL PANCREATECTOMY FOR CHRONIC PANCREATITIS: FOLLOW-UP STUDY OF 3 CASES YEARS AFTER SURGERY. *(Fr.)* Rynicki, P. V. Lausanne, France) and B. Curchod. *Schweiz Med Wschr* 00(28):1205-1206, 1970.

022 PRIMARY CHRONIC PANCREATITIS: SURGICAL STATISTICS AT THE GENEVA UNIVERSITY LINICS. *(Fr.)* Rohner, A. (Surg., U. Clin. Geneva, witzerland) and A. Spiliopoulos. *Schweiz Med Wschr* 00(28):1203-1205, 1970.

023 ETIOLOGY AND PATHOGENESIS OF CHRONIC PANCREATITIS. *(Fr.)* Sarles, H. (Natl. Sanit. nst., Marseilles, France). *Schweiz Med Wschr* 100(28): 190-1194, 1970.

024 ACUTE PANCREATITIS. *(Fr.)* Lenriot, J. P. (Cochin Hosp., Paris, France) *Presse Med* 8(36):1579-1580, 1970.

025 PATHOGENESIS AND ANATOMOPATHOLOGY OF CHRONIC PANCREATITIS. *(Ger.)* Becker, V. Path. Inst. Free U. Berlin, Germany). *Schweiz Med schr* 100(28):1194-1200, 1970.

9026 EXPERIMENTAL INVESTIGATIONS FOR TREATMENT OF CHRONIC PANCREATITIS. *(Ger.)* Eichelter, P. (2nd U. Clin. Vienna, Austria). *Schweiz Med Wschr* 100(28):1202-1203, 1970.

9027 CHRONIC ICTEROGENIC PANCREATITIS. *(It.)* Giannotti, P. (Inst. Gen. Clin. Surg., U. Pisa, Italy), F. Terrosi and G. F. Caldarelli. *Riv Chir Pediat* 12(2):235-247, 1970.

9028 EMERGENCY PANCREATECTOMY IN ACUTE PANCREATITIS: WITH 13 CASE REPORTS. *(Fr.)* Hollender, L. F. (C. H. U. Strasbourg, France), M. Gillet and G. Sava. *Ann Chir* 24(11-12):647-660, 1970.

9029 SURGERY AND EARLY DEVELOPMENT OF ACUTE PANCREATITIS. *(Fr.)* Rettori, R. (Paris, France) and J. F. Grenier. *J Chir* 100(1-2):101-122, 1970.

9030 CHRONIC PANCREATITIS ASSOCIATED WITH SPLENIC COMPLICATIONS. *(Fr.)* Prevost, A. G. (no affil). *J Sci Med Lille* 88(5):291-301, 1970.

9031 DYSPHAGIA DUE TO CHRONIC PANCREATITIS. TWO CASE REPORTS WITH MEDIASTINAL PSEUDOCYSTS. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), G. Pagniez and J. P. Lenriot. *J Chir* 99(3):217-234, 1970.

9032 PLEURISY AND CHRONIC PANCREATITIS. *(Fr.)* Pieron, R. (Hosp. St. Antoine, Paris, France), J. L. Bonnet, F. Dubois, E. Martin and A. Jost. *Poumon Coeur* 26(3):277-287, 1970.

9033 ACUTE PANCREATITIS: DRAINAGE ACCORDING TO WIRSUNG'S TECHNIQUE. *(Fr.)* Petresco, C. (Emergency Hosp. Clin., Bucharest, Rumania) and P. Blidaru. *J Chir* 99(5-6):523-534, 1970.

9034 PATHOGENESIS AND MORPHOGENESIS OF ACUTE PANCREATITIS; CLINICAL PATHOLOGY. *(Ger.)* Wanke, M. (Path. Inst. U. Heidelberg, Germany). *Med Welt* 21(27):1226-1237, 1970.

9035 MORPHOLOGICAL AND HEMODYNAMIC ALTERATIONS IN POSTPANCREATITIS SHOCK: THERAPY. *(Ger.)* Wanke, M. (Path. Inst. U. Heidelberg, Germany), H. Pfriender, P. Frank, K. H. Grozinger and D. Bokelmann. *Med Welt* 21(27):1238-1246, 1970.

9036 UNUSUAL TYPES OF PANCREATITIS. *(Ger.)* Becker, V. (Path. Inst., Free U. Berlin, Germany). *Deutsch Med J* 21(13):900-905, 1970.

9037 CHRONIC PANCREATITIS AND PERIPHERAL ARTERITIS. *(It.)* Fiordigiglio, G. (Dept. Surg., U. Rome, Italy) and M. Speroni. *Arch Chir Tor Cardiovasc* 24(2):181-189. 1970.

o Diagproc (8732)(8738)(8751)(8757)

LIVER AND BILIARY TRACT

9038 HISTOLOGY OF THE LIVER IN CONGENITAL FRUCTOSE-INTOLERANCE DURING TREATMENT WITH DIET. *(Ger.)* Lelong, M. (Paris, France), D. Alagille, LeT. Vinh, M. Gautier and M. Odievre. *Monatsschr Kinderheilk* 118(6):257-258, 1970.

The development of histological changes of the liver was investigated in 9 cases of congenital fructose intolerance. Comparative liver biopsies were performed before and during therapy with a diet free of fructose, and the diagnosis was in all cases confirmed by biochemical methods and by fructose-load tests, and was arrived at 1½ to 7 months after birth. The clinical symptoms were vomiting, hypoglycemia, hypertrophy of the liver, manifestations of deficient nutrition with slow weight gain and retardation of growth. Clinical manifestations subsided within weeks after the start of a fructose-free diet, and weight gain and growth rate normalized. Enlargement and increased density of the liver remained at least for 2 yr, and histological changes persisted despite normalization of clinical findings. Repeated liver biopsies showed the presence of fibrosis and steatosis initially; then fibrosis subsided while steatosis remained clearly demonstrable in all cases. The prescribed diet appeared to disturb the metabolic balance, and persistent hypercholesterolemia indicated a relative lack of carbohydrates; a restrictive diet may not be adequate and additional daily administration of glucose may provide sufficient calories and a better nutritional balance.

9039 THE ULTRASTRUCTURE OF THE LIVER IN PATIENTS WITH CHRONIC IDIOPATHIC JAUNDICE. *(Ger.)* Feldmann, G. (Hosp. Beaujon, Clichy, France), G. Molas, O. Groussard and M. C. Domart-Oudea. *Munchen Med Wschr* 112(39):1725-1729, 1970.

Fourteen patients with chronic idiopathic jaundice, originating from Gilbert's disease (10), Rotor syndrome (2) and Dubin-Johnson syndrome (2) were investigated. Histological findings were normal in all cases of Gilbert's disease and Rotor syndrome, but numerous pigment accumulations of various sizes were found in patients with Dubin-Johnson syndrome. Electron microscopy showed major or minor abnormalities of liver mitochondria in 8 cases of Gilbert's disease and in 1 case of Rotor syndrome, while none were found in Dubin-Johnson syndrome. The changes of the hepatic cells were characterized by the occurrence of linear and dot-shaped paracrystalline inclusions in normal- and over-sized mitochondria, and several types of pigment were found in the cytoplasm. The abnormalities were non-specific and occurred irregularly; their presence did not contribute to the elucidation of the pathophysiology of these types of jaundice.

9040 GLUCURONIDIZATION OF ^{131}I-o-IODOBENZOIC ACID: A MEASURE OF DETOXIFICATION FUNCTION OF THE LIVER. *(Ger.)* Dohnalek, J. (Med. Fac. U. J. Ev. Purkyne, Brno, Czechoslovakia), M. Eysselt, K. Martinek, D. Kadlecova, B. Herufek. *Acta Hepato-splen* 17(4):250-254, 1970.

Glucuronide formation was studied 6 hr after labeled ^{131}I-o-iodobenzoic acid administration (2 mg p.o.) in 94 healthy subjects, 75 patients with chronic hepatitis, 62 patients with cirrhosis, 47 patients with chronic alcoholism, 47 patients with cholecystitis, 42 cholecystectomized patients and 12 patients with liver metastases. Such data were compared with BSP- and ^{131}I-rose bengal tests. Increased glucuronide formation was observed in all patients with cirrhosis and liver metastases, and high glucuronide formation occurred in patients with chronic hepatitis (75% of the cases), in patients with compensated and decompensated liver cirrhosis (68 and 83% of the cases, resp.) and in patients with chronic cholecystitis (36%). Intensification of glucuronide formation seems to be related to an impairment of glycine conjugation and appears to reflect an alteration of the detoxification function of the liver in conditions of chronic parenchymal damage.

9041 SERUM CHOLESTEROL ESTERIFICATION IN LIVER DISEASE: IMPORTANCE OF LECITHIN-CHOLESTEROL ACYLTRANSFERASE. *(E.)* Simon, J. B. (Dept. Med. Queen's U., Kingston, Ontario, Canada) and R. Scheig. *New Eng J Med* 283(16):841-846, 1970.

Serum lecithin-cholesterol acyltransferase (LCAT) activity was assayed by measuring the ability of serum to esterify labeled substrate cholesterol in 12 healthy subjects and in 21 patients with liver disease. Serum LCAT activity (μg cholesterol esterified/ml/hr) ranged from 20.4 to 34.1 in the controls (mean of 27.6), was low (5-20) in 14 patients, normal (20-35) in 6, and high (59.6) in

1. Serum SGOT levels and the degree of necrosis corresponded to the LCAT activity impairment in patients with acute hepatitis but not in patients with chronic liver disease. A direct relation (r = 0.647) existed between LCAT activity and the proportion of esterified serum cholesterol since 14 patients with low LCAT activity also had less than 65% of total cholesterol in the esterified form, and 4 patients with normal LCAT activity had more than 65% esterified. Incubation of serum substrate prepared from normal subjects with the serum from patients or of patients' substrate with normal serum did not affect LCAT activity so that the decrease in activity was apparently not due to circulating LCAT inhibitors or to abnormal substrate lipoproteins.

9042 THE INCIDENCE AND FREQUENCY OF MALLORY BODIES IN 1100 CONSECUTIVE LIVER BIOPSIES. *(E.)* Christoffersen, P. (Commun. Hosp. Copenhagen, Denmark). *Acta Path Microbiol Scand* 78A(4):395-400, 1970.

The incidence of Mallory bodies in liver diseases was studied on 1,100 consecutive needle biopsies out of which 62 were positive. Of these 17 (corresponding to 7% of the total number of specimens) showed fatty infiltration, and 45 (corresponding to 37%) showed cirrhosis and fatty infiltration, while Mallory bodies were not demonstrated in biopsies without fatty infiltration. The incidence of Mallory bodies in nonselected materials of cirrhosis with fatty infiltration appeared to be between 25 and 40% and was independent of the degree of fatty infiltration.

9043 ISOLATION AND CHARACTERIZATION OF KERATAN SULFATES FROM THE LIVER OF A PATIENT WITH G_{M1}-GANGLIOSIDOSIS TYPE 1. *(E.)* Callahan, J. W. (Dept. Biochem., McGill U., Montreal, Quebec, Canada) and L. S. Wolfe. *Biochim Biophys Acta* 215(3):537-543, 1970.

Liver samples obtained at autopsy from cases of infantile G_{M1}-gangliosidosis Type I contained increased amounts of G_{M1}-ganglioside. β-Galactosidase enzyme activity measured at pH 5.0 was exceedingly low (0.01 as compared to 0.6 µmole/min/g wet weight at 37°C in normal conditions) whereas several other lysosomal hydrolases had activities greater than normal; β-N-acetyl-glucosaminidase was 17.7 as compared to 2.4 µmole/min/g wet weight at 37°C in normals. The glycosaminoglycans which accumulated in greatly increased amounts in the liver were shown to contain galactose and glucosamine as the major carbohydrate constituents with a molar ratio of galactose to glucosamine greater than unity. These compounds were highly water-soluble, had a very low sulfate content, were polydisperse on molecular sieve chromatography, and contained an alkali-labile protein-polysaccharide linkage region. Except for a low sulfate content, these galactose-glucosamine-containing polysaccharides are similar to human cartilage keratan sulfate. Abnormal linking of protein-polysaccharide complexes mediated by specific glycoprotein units may constitute the basis of chondrodystrophy in infants with this disease. Hepatomegaly seems to be due to excessive accumulation of keratan sulfates; however, the site of synthesis of these undersulfated polysaccharides is unknown.

9044 THE SERUM COMPLEMENT IN SOME ACUTE AND CHRONIC LIVER DISEASES. *(It.)* Farini, R. (Dept. Med., U. Padua, Italy), P. F. Gambari, U. Fagiolo, A. Castellani, A. Rizzo, G. Erle and R. Naccarato. *G Clin Med* 51(5):411-423, 1970.

9045 WILSON'S DISEASE (HEPATOLENTICULAR DEGENERATION): CENTRAL VESTIBULAR FUNCTIONAL DISORDERS. *(Ger.)* Wildberger, H. (Winerthur Canton Hosp., Switzerland). *Schweiz Med Wschr* 100(34):1457-1458, 1970.

9046 CORTISOL HYPERSECRETION AND THE LIVER. *(Ger.)* Cristofolini, M. P. (Inst. Sci. Med. Intern., U. Genoa, Italy), R. Prando and L. Adezati. *Schweiz Med Wschr* 100(40):1687-1689, 1970.

9047 INBORN ERRORS OF METABOLISM: DISEASES OF THE NEWBORN (1. THEORETICAL BACKGROUND). *(Ger.)* Plochl, E. (Dist. Hosp. Salzburg, Germany). *Wien Med Wschr* 120(41):707-711, 1970.

9048 PATHOLOGICAL, ANATOMICAL ALTERATIONS OF LIVER AND GALLBLADDER IN PATIENTS WITH A NEGATIVE CHOLECYSTOGRAM: SURGICAL FINDINGS. *(Ger.)* Reiher, P. (St. Hosp. Berlin, Germany) and K. Schlossarczyk. *Deutsch Gesundh* 25(27):1265-1268, 1970.

9049 FORMS OF ICTERUS IN ENZYME DEFECTS OF THE LIVER. *(Ger.)* Darnis, F. (Hosp. Beaujon, Clichy, France). *Munchen Med Wschr* 112(39):1715-1724, 1970.

9050 THE ANTIGLOBULIN CONSUMPTION TEST IN DISEASE OF THE LIVER. *(Ger.)* Roggenbach, H. J. (Essen Clin. U. Ruhr, Germany), C. Steffen, G. Brittinger, F. Lillemeier and H. R. Ewers. *Deutsch Med Wschr* 95(39):1960-1962, 1970.

9051 ERYTHROCYTOSIS AND HYPERLIPEMIA, SYMPTOMS OF PRIMARY CARCINOMA OF THE LIVER. *(Dut.)* Voermans, L. A. G. A. (Bronovo Diakoness, Hosp., Netherlands). *Nederl T Geneesk* 114(23):963-966, 1970.

9052 SYMPTOMS AND PATHOLOGY OF LIVERS OF PATIENTS ADMINISTERED THOROTROST. *(Ger.)* Selmair, H. (St. Hosp., Kassel, Germany) and H. D. John. *Med Welt* 21(26):1203-1208, 1970.

9053 FREQUENCY, ETIOLOGY AND SYMPTOMS OF ENDOGENOUS OR NECROTIC LIVER COMA. *(Ger.)* Muting, D. (Med. U. Clin. Hamburg, Germany), U. Klein, H. Reikowski and R. Fischer. *Med Welt* 21(26):1186-1191, 1970.

9054 CLINICAL TRIAL OF A COENZYME COMPLEX IN PATIENTS WITH LIVER DISEASES. *(It.)* Bani, G. (Dept. Med., U. Rome, Italy). *Clin Ter* 52(3):267-280, 1970.

9055 SURGICAL ASPECTS OF PORTAL HYPERTENSION IN CHILDREN. *(It.)* Domini, R. (Inst. Clin. Surg. Pediat., U. Bologna, Italy), V. Jasonni and D. Mazzacuva. *Clin Pediat* 51(9):443-479, 1970.

9056 HEMATOPERITONEUM DUE TO SPONTANEOUS RUPTURE OF A PRIMARY CARCINOMA OF THE LIVER. *(It.)* Bertoni, F. (Inst. Anat., U. Bologna, Italy), R. Dalmonte and A. Capelli. *Arch Ital Anat Istol Pat* 43(2-3):157-178, 1970.

9057 LIVER FIBROSIS. *(Ger.)* Bianchi, L. (Path. Inst. U. Basel, Switzerland). *Schweiz Med Wschr* 100(28):1214-1215, 1970.

9058 A CLINICAL INVESTIGATION ON THE POSSIBLE EFFECTS OF BENZYDAMINE HYDROCHLORIDE ON LIVER FUNCTION. *(E.)* Vermeulen, H. J. (Munic. Hosp. Rotterdam, Holland). *Arzneimittelforschung* 20(6): 767-770, 1970.

9059 TYPE IV GLYCOGENOSIS (AMYLOPECTINOSIS); LIGHT AND ELECTRON MICROSCOPIC OBSERVATIONS. *(E.)* Schochet, S. S. (U. Iowa Coll. Med., Iowa City), W. F. McCormick and H. Zellweger. *Arch Path* 90(4):354-363, 1970.

9060 THE ROLE OF ENZYMES IN CONGENITAL HYPERBILIRUBINEMIA. *(E.)* Nakajima, H. (Tokyo Med. Dent. U., Japan). *Diagnostica* (17):10-11, 1970.

9061 PRIMARY CANCER OF THE LIVER. *(Fr.)* Dubrisay, J. (no affil) and J. P. Barbier. *Rev Med* 11(25):1647-1653, 1970.

9062 LIVER DISEASE DUE TO VENOUS OCCLUSION AND THE BUDD-CHIARI SYNDROME. *(Fr.)* Leger, L (Hosp. Cochin, Paris, France), T. Dentan, R. Parc, A. Colin, A. Desplace and G. Lemaigre. *Presse Med* 78(36):1561-1564, 1970.

9063 LIVER DISEASE DUE TO VENOUS OCCLUSION. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), T. Dentan and G. Lemaigre. *Presse Med* 78(36):1559-1560, 1970

9064 LIVER AND BILE DUCT SURGERY IN CHILDREN: DIETARY INDICATIONS. *(It.)* Formica, E. (Hygiene Service, Bologna, Italy). *Riv Chir Pediat* 12(2):258-267, 1970.

9065 CELLULAR IMMUNITY IN LIVER DISEASES: STIMULATION OF LYMPHOCYTES *IN VITRO* BY LIVER ANTIGENS. *(It.)* Ortona, L. (Dept. Med. Path., Catholic U. Sacred Heart, Rome, Italy), O. Ciarla, E. Pizzigallo, and V. Laghi. *Minerva Med* 61(47):2611-2619, 1970.

9066 TOTAL LIVER EXTRACT COMBINED WITH VITAMIN B$_{12}$, E AND K LIVER PROTECTIVE EFFECT IN ANTIBACTERIAL THERAPY OF TUBERCULOSIS PATIENTS WITH CHRONIC LIVER DISEASE. *(It.)* D'Angelo, G. (G. Bizzozero Hosp., Busto Arsizio, Milano, Italy) and A. Salatino. *Clin Ter* 52(1):61-70, 1970.

9067 ACUTE GALACTOSEMIA IN SIBLINGS. *(Ger.)* Kaloud, H. (U. Child. Clin. Graz, Austria), F. C. Sitzmann, and K. Rosanelli. *Monatsschr Kinderheilk* 118(6):424-425, 1970.

9068 LIVER STEATOSIS: SYMPTOMATOLOGY AND THERAPY. *(Ger.)* Knick, B. (2nd Med. U. Clin. Polyclin, Mainz, Germany). *Therapiewoche* 20(29):1412-1421, 1970.

9069 RADIOTHERAPY OF CARCINOID TUMOR LIVER METASTASES. *(Fr.)* Rousseau, J. (Curie Found., Paris, France), G. Mathieu, R. Gongora, Ph. Debertrand and J. Fenton. *J Radiol Electr* 51(6-7):349-352, 1970.

9070 LIVER OVERLOADS. I. CARBOHYDRATE OVERLOAD. *(Fr.)* Chevrel, B. (Hosp. St. Antoine, Paris, France). *Rev Medicochir Mal Foie* 45(4):231-236, 1970.

9071 HETEROTOPIC LIVER TRANSPLANT IN MAN: ANATOMICAL AND PHYSIOLOGICAL REQUIREMENTS. *(Fr.)* Pouyet, M. (Red Cross Hosp., Lyon, France), P. Berard, Y. Ruckebusch, G. Badea, J. Baulieux, R. Cret, J. R. Tapissier and M. L. Grivel. *Rev Medicochir Mal Foie* 45(4):197-201, 1970.

9072 HETEROTOPIC LIVER TRANSPLANT IN MAN. *(Fr.)* Berard, P. (Red Cross Hosp., Lyon, France), M. Pouyet, J. Baulieux and R. Cret. *Rev Medicochir Mal Foie* 45(4):189-196, 1970.

9073 SEVERE JAUNDICE FOLLOWING ORTHOTOPIC LIVER TRANSPLANT IN MAN: DIFFERENTIAL DIAGNOSIS. *(Fr.)* Kestens, P. J. (Clin. U. St. Pierre, Louvain, Belgium), J. B. Otte, G. P. J. Alexandre, L. Lambotte, J. M. Loubeau, J. C. Orban, J. J. Haxhe, P. Maldague and J. Morelle. *Rev Medicochir Mal Foie* 45(4):179-187, 1970.

9074 WOLMAN'S DISEASE. *(Fr.)* Chevrel, B. (Hosp. St. Antoine, Paris, France). *Rev Medicochir Mal Foie* 45(3):177-178, 1970.

9075 CHOLESTATIC ICTERUS GRAVIDORUM, JAUNDICE DUE TO ORAL CONTRACEPTIVES, AND PARTIAL ANICTERIC CHOLESTASIS ASSOCIATED WITH LIVER SARCOIDOSIS. *(Fr.)* Merillon, H. (Hosp. Cochin, Paris, France), B. Crespin, M. Forest, H. Saltiel, H. Bricaire and C. Laroche. *Ann Med Intern* 121(8-9):711-715, 1970.

9076 THOROTRAST: PRIMARY LIVER SARCOMA 22 YEARS AFTER THE ADMINISTRATION. *(E.)* Heger, N. (Surg. Dept. U. Giessen, Germany) and S. Bayindir. *Minnesota Med* 53(10):1137-1139, 1970.

9077 LIPOMA OF THE LIVER. *(E.)* Ramchand, S. (Kingston Gen. Hosp., Ontario, Canada), Y. Ahmed and L. Baskerville. *Arch Path* 90(4):331-333, 1970.

9078 ACID HYDROLASES IN THE SERUM AND LIVER IN MUCOPOLYSACCARIDOSES TYPES I AND III. *(E.)* Gordon, B. A. (Child. Psychiat. Res. Inst., London, Ontario, Canada) and V. Feleki. *Clin Biochem* 3(3):193-202, 1970.

9079 HEPATIC SURGERY: PRESENT AND FUTURE. *(E.)* Balasegaram, M. (Gen. Hosp. Kuala Lumpur, Malaysia). *Ann Roy Coll Surg England* 47(3):139-158, 1970.

9080 A STUDY OF THE SMALL INTRAHEPATIC BILIARY PATHWAYS IN A CASE OF PRIMARY SCLEROSING CHOLANGITIS. *(It.)* Cavelli, G. (Dept. Med., U. Bologna, Italy), A. Pierangeli, G. Bacci, F. B. Bianchi and A. M. Casali. *Minerva Gastroent* 16(3):110-119, 1970.

9081 HEPATIC AND SERUM LIPID CONTENT DURING ICTERUS DUE TO STASIS. *(It.)* Salvioli, G. F. (Dept. Med., U. Modena, Italy) and R. Salati. *Minerva Gastroent* 16(3):107-109, 1970.

9082 JAUNDICE DUE TO HEPATOBILIARY DISEASES IN PREGNANCY. *(It.)* Rezzonico, A. (Dept. Path. Med., U. Milan, Italy). *Minerva Med* 61(35):1912-1917, 1970.

9083 TOLERABILITY AND HEPATOPROTECTIVE ACTIVITY OF THE CALCIUM SALT OF ALPHA-ALPHA-DI-THIOCAPRONIC ACID. *(It.)* Boselli, G. (1st Surg. Clin. U. Milan, Italy) and M. Galeone. *Gazz Med Ital* 129(3):122-131, 1970.

9084 BEHAVIOR OF SULFOBROMOPHTHALEIN IN ARTERIO-PORTAL FISTULAS. *(Fr.)* Warter, J. (C. H. U. Strasbourg, France), B. Gillet, H. Schirardin and J. P. Haberer. *Arch Franc Mal Appar Dig* 59(7-8):417-428, 1970.

9085 CIRCULATORY COMPLICATIONS AND CONSEQUENCES OF SURGICAL PORTACAVAL SHUNTS. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), J. P. Lenriot, G. Lemaigre, J. P. Gorin and R. Guillemot. *Acta Gastroent Belg* 33(6):425-452, 1970.

9086 ORTHOTOPIC LIVER TRANSPLANT IN DOG: EXPERIENCE FROM 120 OPERATIONS. *(Fr.)* Marchal, G. (Inst. Biol., Montpelier, France), M. Balmes, H. Navratil, G. Oliver, J. Clot, A. M. Galibert and J. P. Bali. *J Chir* 99(4):425-446, 1970.

9087 LIVER TRANSPLANT IN MAN. *(Fr.)* Chapuis, Y. (no affil). *Presse Med* 78(33):1483-1484, 1970.

9088 LIVER ULTRASTRUCTURE IN MUCOPOLYSACCHARIDOSES IN CHILDREN. *(Fr.)* Baldet, P. (Fac. Med. Montpelier, France), C. Marty and A. Pages. *Arch Anat Path* 18(2):115-125, 1970.

9089 LIVER FUNCTION IN RIFAMPICIN TREATED PATIENTS. *(Fr.)* Morere, P. (C.H.U. Rouen, France), J. Bourreilie, F. Matray, J. P. Stain and P. Metayer. *Rev Tuberc* 34(3):403-414, 1970.

9090 VARIATIONS OF TRANSAMINASES BEFORE AND DURING RIFAMPICIN TREATMENT. *(Fr.)* Levi-Valensi, P. (Amiens, France), H. Giroulle, R. Plaquet, J. L. Dupas, J. Abric, E. Danse and P. Vonachen. *Rev Tuberc* 34(3):422-428, 1970.

9091 INBORN GALACTOSEMIA. *(Fr.)* Verger, P. (Bordeaux, France), J. M. Guillard, P. Cixous, J. L. Laigle and Y. Prevost. *Bordeaux Med* 3(6):1467-1480, 1970.

9092 ORTHOTOPIC LIVER HOMOTRANSPLANT IN PIGLETS. *(Fr.)* Huguet, C. (Hosp. St. Antoine, Paris, France), P. Morisot, C. Barredo, D. Vacher, D. Gallot and P. Opolon. *Rev Medicochir Mal Foie* 45(4):203-213, 1970.

- P:Morph (8515)(8536)(8538)(8539)
- P:Secr:Hepatobil (8635)(8636)(8637)(8650)(8678)(8679)(8680)(8682)(8683)(8684)
- Diagproc (8707)(8716)(8724)(8725)(8733)(8736)(8741)(8746)(8747)(8748)(8749)(8753)(8758)(8767)(8777)(8778)(8779)(8780)(8786)(8788)
- D:Stomduo (8835)(8876)
- D:Livbil:A.Nonv.Hep (9102)
- D:Livbil:A.V.Hep (9119)(9124)(9139)(9141)(9142)
- D:Livbil:Gallb (9194)(9195)
- D:Gen (9209)(9214)(9223)(9255)
- D:Gen:Parasit (9260)(9263)(9265)(9266)(9269)(9271)(9272)(9273)(9276)(9277)(9281)(9282)(9283)

Acute Nonviral Hepatitis and Hepatic Injury

9093 CORRELATION OF RADIATION-INDUCED ULTRASTRUCTURAL CHANGES IN MOUSE HEPATOCYTES WITH ALTERATIONS IN PLASMA CONCENTRATION OF PROTEIN-BOUND NEUTRAL HEXOSES. *(E.)* Rene, A. A. (Armed Forces Radiobiol. Res. Inst., Bethesda, Md.) and A. S. Evans. *Radiat Res* 44(1):224-236, 1970.

Alterations in liver tissue and in plasma concentration of protein-bound neutral hexoses induced in mice (strain C_3H) subjected to a whole-body dose of 530 rads of mixed gamma-neutron radiations delivered at a rate of approximately 20 rads/min were reported. The blood plasma concentration of protein-bound carbohydrates, as neutral hexoses, estimated daily after irradiation, increased 1.8-2.2 times their preirradiation levels in animals which died, but not in survivors. Ultrastructural architecture of liver tissue taken from irradiated animals *in extremis* compared with that of survivors and fed and starved unirradiated controls showed moderate to marked dilatation of the endoplasmic reticulum, increased Golgi activity, and rounding of the mitochondria with a decrease in numbers of mitochondrial granules. These alterations, together with other differences noted, were correlated with the increased plasma concentration of protein-bound neutral hexoses uniformly found in animals which succumbed to radiation injury.

9094 ORIGIN AND PATHOGENESIS OF FATTY ACID ACCUMULATION IN ALCOHOL ABUSE. *(Ger.)* Lieber, C. S. (Bronx VA Hosp., N. Y.). *Therapiewoche* 20(39):2314-2319, 1970.

9095 PATHOGENESIS OF ACUTE ALCOHOLIC LIVER STEATOSIS IN ANIMALS. *(Ger.)* Isselbacher, K. J. (Harvard Med. Sch., Boston, Mass.), E. A. Carter and S. Lui. *Therapiewoche* 20(39):2307-2311, 1970.

9096 LIVER NECROSIS FOLLOWING CARBON TETRACHLORIDE POISONING: EFFECT OF ENDOXANE. *(Ger.)* Korb, G. (Path. Inst. U. Marburg, Germany) and B. Spalke. *Klin Wschr* 48(14):883-884, 1970.

9097 ANTILYMPHOCYTE GLOBULIN IN EXPERIMENTAL HEPATITIS IN MICE. *(Ger.)* Warnatz, H. (U. Hosp. Erlangen-Nuremberg, Germany), F. Scheiffarth and H. Wagner. *Z Immunitaetsforsch* 140(2):168-176, 1970.

9098 ACUTE TOXIC EPIDERMOLYSIS (LYELL SYNDROME) WITH COMPLICATING LIVER DAMAGE. *(Ger.)* Binkelmann, L. (Mannheim Clin., U. Heidelberg, Germany). *Kinderaertzl Prax* 38(8):356-368, 1970.

9099 LIVER STEATOSIS: TREATMENT WITH ESSENTIAL PHOSPHOLIPIDS. *(Ger.)* Arendt, R. (Med. Clin. U. Rostock, Germany), P. Nowotny and W. Teichmann. *Z Ges Inn Med* 25(13):587-589, 1970.

9100 IATROGENIC LIVER DAMAGE (DRUG HEPATOTOXICITY). *(Ger.)* Haas, P. (Dist. Hosp. Salzburg, Germany). *Hippokrates* 41(3):378-384, 1970.

9101 QUANTITATIVE SERUM IMMUNOGLOBULIN DETERMINATION IN HEPATITIS. III. INFLAMMATION AND HISTOLOGY. *(Ger.)* Gleichmann, E. (Med. Coll., Hanover, Germany), W. Wepler, P. Otto and H. Deicher. *Acta Hepatosplen* 17(4):255-273, 1970.

9102 ENCEPHALOPATHY IN ACUTE HEPATITIS. *(Ger.)* Burgmann, W. (Dr. Schorlemmers Hosp., Bad Godesborg, Germany). *Med Welt* 21(26):1195-1197, 1970.

9103 HEPATOCELLULAR CHANGES IN CHRONIC LEAD POISONING IN MAN. *(Ger.)* Klinge, O. (Path. Inst. U. Wurzburg, Germany). *Acta Hepatosplen* 17(3):151-159, 1970.

9104 GIGANTOBLASTIC HEPATITIS IN BABY RATS FOLLOWING GALACTOSAMINE ADMINISTRATION TO PREGNANT RATS. *(Ger.)* Leinweber, B. (Med. Clin. Polyclin., Justus Liebig U. Geissen, Germany) and D. Platt. *Klin Wschr* 48(17):1072-1073, 1970.

9105 GRANULOMATOUS LIVER PROCESSES, CLINICAL, FUNCTIONAL AND HISTOLOGICAL CONSIDERATIONS. *(It.)* Scalise, G. (Clin. Infect. Dis., U. Siena, Italy), C. A. Boggiano, L. Pippi and A. Sinicco. *Omnia Med* 47(2):357-397, 1970.

9106 GRANULOMATOUS HEPATITIS (SARCOIDOSIS OF THE LIVER). *(Fr.)* Lesbros, M. F. (Red Cross Hosp., Lyon, France). *J Med Lyon* (1189):1375-1377, 1970.

9107 RECENT EXPERIENCES WITH TWENTY-FOUR CASES OF TRAUMA INVOLVING THE LIVER. *(E.)* Colver, H. D. (Portland Surg. Ctr., Ore.). *Amer Surg* 36(10)635-638, 1970.

9108 THE INFLUENCE OF INTOXICATION BY ALKYLPHOSPHATES AND SPECIFIC ANTIDOTE THERAPY ON THE LIVER FUNCTION OF RATS AND RABBITS. *(Ger.)* Boelcke, G. (Inst. Pharmacol. Toxicol., U. Gottingen, Germany), G. Feise, K. De Cassan and E. Keyser. *Arzneimittelforschung* 20(6):770-774, 1970.

9109 THERAPEUTIC CONSIDERATIONS OF THE SIDE-EFFECTS OF ENDOCRINE CONTRACEPTIVES ON THE LIVER. *(Ger.)* Gomes Da Costa, S. F. (Med. Fac. U. Lisbon, Portugal) and J. A. Gomes Da Costa. *Arzneimittelforschung* 20(9):1246-1247, 1970.

9110 ROLE OF DIET IN THE PATHOGENESIS OF ALCOHOLIC FATTY LIVER. *(Ger.)* Hartroft, W. S (Path. Dept., U. Hawaii, Honolulu). *Therapiewoche* 20(39):2294-2303, 1970.

9111 EFFECT OF INHALATION NARCOSIS AND SURGERY ON LIVER FUNCTION: HALOTHANE ANESTHESIA: I. *(Ger.)* Clauberg, G. (Emergency Clinic, Tubingen, Germany). *Anesthesist* 19(9):317-324, 1970.

9112 EFFECT OF INHALATION NARCOSIS AND SURGERY ON LIVER FUNCTION: HALOTHANE ANESTHESIA: II. *(Ger.)* Clauberg, G. (Emergency Clinic, Tubingen, Germany). *Anesthesist* 19(9):324-328, 1970.

9113 PATHOGENESIS OF FATTY ACCUMULATION IN THE LIVER THROUGH ALCOHOL INGESTION. III. EFFECT OF ETHANOL ON METABOLITES AND COENZYMES OF ENERGY METABOLISM IN LIVER AND BLOOD IN CONDITIONS OF STANDARD AND LOW PROTEIN FOOD INTAKE. *(Ger.)* Bode, C. (Med. Clin. Philipps U., Marburg, Germany), H. Kono, H. Goebell, C. Bode and G. A. Martini. *Klin Wschr* 48(19):1180-1188, 1970.

o P:Secr:Hepatobil (8628)(8633)(8638)(8639)(8653)(8660)(8666)(8669)
o D:Livbil (9041)(9050)(9057)(9079)(9089)(9090)
o D:Livbil:C.Hep (9144)
o D:Livbil:Cirrh (9154)
o D:Gen:Parasit (9290)

LIVER AND BILIARY TRACT

Acute Viral Hepatitis

9114 PREVALENCE OF SERUM-HEPATITIS-RELATED ANTIGEN (SH) IN DIFFERENT GEOGRAPHIC REGIONS. *(E.)* Prince, A. M. (New York Blood Ctr., New York). *Amer J Trop Med Hyg* 19(5):872-879, 1970.

The prevalence of serum-hepatitis related antigen was evaluated in serum of 12,535 persons in New York City, Africa, Central and South America, India, and Pakistan. The serum-hepatitis antigen was 10-100 times more prevalent in clinically well persons from tropical populations (4.3%) than in volunteer blood donors in New York City (0.1%). An exceptionally high frequency of serum-hepatitis antigen positive persons were observed in the Cashinahua Indians of Peru. Nine of 10 positives were under 20 years of age (31.7% of population tested). With the exception of the Cashinahua Indians, no correlation between a decline in frequency of serum containing antigen and increasing age was seen. Since the known mechanisms of transmission of serum hepatitis rarely occur in the tropics or are not more prevalent in the tropics than in temperate regions, transmission of the virus by arthropods may be an important mechanism.

9115 HEPATITIS-ASSOCIATED ANTIGEN IN BLOOD DONOR POPULATIONS: RELATIONSHIP TO POST-TRANSFUSION HEPATITIS. *(E.)* Taswell, H. F. (Mayo Clin., Rochester, Minn.), R. Shorter, T. K. Poncelet and N. G. Maxwell. *JAMA* 214(1):142-144, 1970.

Blood donor serum samples (13,049) from five medical centers were studied for the presence of hepatitis-associated antigen. Of the 8,816 consecutive serum samples from normal blood donors at the Mayo Clinic, 5 (0.057%) showed the presence of hepatitis-associated antigen, and of the 4,233 serum samples from normal blood donors at other institutions, 21 (0.49%) were positive for the hepatitis antigen. The incidences varied, depending on geographical location, from 0.057% to 1.47% and among the 92 implicated donors (ones whose blood was transfused in a 1-, 2-, 3-unit transfusion to a patient who subsequently developed hepatitis within 15-180 days), the median interval between donation of the implicated unit and subsequent blood sample collection from the implicated donor was 8 months (range, 1-84 months); for the hepatitis-associated antigen-positive and negative donors, the median intervals were 6.0 (range, 0-55) and 9.0 (range, 1-84), months, resp. The mean incubation period of hepatitis occurring in affected recipients was 62 days (63 days in patients receiving blood from positive donors and 61 days in patients receiving blood from negative donors). Increased immunoglobulin levels were observed in 15 of the implicated donors; however, only 4 of this group were positive. With more abundant antibody supply becoming readily available, routine screening of all blood donors with an agar-gel diffusion test seemingly would eliminate at least 32% of hepatitis carriers with a mean loss of 0.2% (probable maximum of 1.5%) of the total donor population.

9116 INVESTIGATIONS FOR AUSTRALIA ANTIGEN IN BLOOD DONORS. *(It.)* Ortona, L. (Dept. Med., Catholic U. Sacred Heart, Rome, Italy), E. Pizzigallo, O. Ciarla and G. Federico. *Boll lst Sieroter Milan* 49(3):232-234, 1970.

9117 HUMORAL AND CELLULAR IMMUNITY IN ACUTE VIRAL HEPATITIS. *(It.)* Fiaschi, E. (Dept. Med., U. Padua, Italy), R. Naccarato, U. Fagiolo and R. Farini. *Gazz Sanit* 41(4-5):157-166, 1970.

9118 INVESTIGATIONS FOR AUSTRALIA ANTIGEN IN A HEMODIALYSIS CENTER. *(It.)* Ortona, L. (Dept. Med., Catholic U. Sacred Heart, Rome, Italy), E. Pizzigallo, O. Ciarla and G. Federico. *Boll lst Sieroter Milan* 49(3):235-238, 1970.

9119 AUSTRALIA ANTIGEN IN VIRAL HEPATITIS, OTHER LIVER DISEASES AND IN TRANSFUSION PATIENTS. *(It.)* Ortona, L. (Dept. Med., Catholic U. Sacred Heart, Rome, Italy), E. Pizzigallo, O. Ciarla and G. Federico. *Boll lst Sieroter Milan* 49(3):223-231, 1970.

9120 AUSTRALIA ANTIGEN IN SAMPLES FROM CHILEAN POPULATION AFFECTED BY VARIOUS DISEASES. *(Por.)* Velasco, M. (Hosp. Del Salvador, Santiago, Chile) and R. Katz. *Arq Gastroent* 7(2):57-61, 1970.

9121 AUSTRALIA ANTIGEN, VIRAL HEPATITIS AND PERIARTERITIS NODOSA. *(Fr.)* Trepo, C. (Lyon, France) and J. Thivolet. *Presse Med* 78(36): 1575, 1970.

9122 SERUM HEPATITIS AS A PROFESSIONAL RISK. *(E.)* (anon) *London Clin Med J* 11(2): 7-10, 1970.

9123 MONONUCLEOSIS AND HEPATITIS. *(It.)* Fabiani, F. (Inst. Infect. Dis., U. Perugia, Italy) and S. Pauluzzi. *Policlinico* 77(8)256-257, 1970.

9124 TREATMENT OF CHOLESTASIS IN INFECTIOUS HEPATITIS. *(Ger.)* Semmler, H. (Dist. Hosp., Potsdam, Germany), W. Mittmann and E. Rosenberg. *Deutsch Gesundh* 25(29):1341-1344, 1970.

9125 NEW WAYS OF AVOIDING TRANSFUSION HEPATITIS. *(Ger.)* Bergmann, H. (Inst. Anesthesiology, Linz, Austria). *Wien Med Wschr* 120(25-26):449-453, 1970.

9126 DEVELOPMENTAL COURSE OF HEPATITIS. *(Ger.)* Dittrich, H. (Hanusch Hosp., Vienna, Austria) and E. Hentschel. *Therapiewoche* 20(36): 2010-2012, 1970.

9127 CONTROLLED CLINICAL STUDY ON THE EFFECTS OF ANABOLIC STEROIDS IN VIRAL HEPATITIS. *(It.)* Jannuzzi, C. (Dept. Infect. Dis., U. Genoa, Italy), D. Bassetti and G. Frigerio. *Minerva Med* 61(35):1902-1911, 1970.

9128 TREATMENT OF VIRAL HEPATITIS BY AN INDIGENOUS DRUG, LIV. 52. *(E.)* Mukerjee, A. B. (Calcutta Nat. Med. Coll. Hosp., India) and M. Dasgupta. *Indian Pract* 23(6):357-366, 1970.

9129 LIVER DISEASE IN PATIENTS TREATED WITH CHRONIC HEMODIALYSIS. *(E.)* Ivey, K. J. (U. Hosp., Iowa City, Iowa) and J. A. Clifton. *Gastroenterology* 59(4):630-634, 1970.

9130 BONE MARROW PROLIFERATION IN 2 CASES OF VIRAL HEPATITIS. *(Fr.)* Gillot, F. (C.H.U. Nantes, France), O. Bureau and G. Nomballais. *Ouest Med* 23(10):1089-1093, 1970.

9131 ROLE OF VIRAL HEPATITIS IN PRODUCING CHRONIC BONE MARROW INSUFFICIENCY. *(Fr.)* Viala, J. J. (Hosp. Eduoard Herriot, Lyon, France), P. A. Bryon, J. C. Cordel, L. Revol and P. Croizat. *Lyon Med* 223(20):1019-1028, 1970.

9132 QUANTITATIVE DIFFERENTIATION OF THE SUBUNITS OF LACTIC DEHYDROGENASE DURING THE COURSE OF ACUTE HEPATITIS EPIDEMICA. *(Ger.)* Maier, K. P. (Med. U. Clin. Frieburg, Germany). *Enzymol Biol Clin* 11(5):459-465, 1970.

9133 CELLULAR AND HUMORAL IMMUNITY IN ACUTE VIRAL HEPATITIS. *(Fr.)* Fiaschi, E. (Dept. Med., U. Padua, Italy), R. Naccarato, U. Fagiolo and R. Farini. *Rev Medicochir Mal Foie* 45(4):215-226, 1970.

9134 LONG TERM ASSESSMENT OF IMMUNOGLOBULINS IN VIRAL HEPATITIS. *(It.)* Paolucci, G. (Inst. Clin. Pediat, U. Bologna, Italy), P. Rosito and A. F. Mancini. *Minerva Pediat* 22(16):865-870, 1970.

9135 SERUM TRANSAMINASES DURING CONVALESCENCE AFTER ACUTE VIRAL HEPATITIS IN CHILDREN. *(Ger.)* Reddemann, H. (Child. Clin., Ernst Moritz Arndt U., Greifswald, Germany) and I. Priebus. *Deutsch Gesundh* 25(31):1461-1464, 1970.

9136 GASTRITIS IN ACUTE VIRAL HEPATITIS. *(Ger.)* Hauzeur, F. (Med. U. Clin. Rostock, Germany) R. Arendt and E. Schroeder. *Deutsch Gesundh* 25(31):1451-1454, 1970.

9137 VIRAL HEPATITIS IN CHILDREN. *(It.)* Poggi, F. (Gen. Prov. Hosp., Tivoli, Italy). *Gazz Int. Med Chir* 75(3):222-234, 1970.

9138 AUSTRALIA ANTIGEN AND VIRAL HEPATITIS. I. METHODS AND RESULTS OF INVESTIGATION IN WESTERN SICILY. *(It.)* Spano, C. (Inst. Hyg., U. Palermo, Italy), L. Dardanoni, L. Pagliaro, G. Millonig, G. Russo, V. Pinello and G. Filippazzo. *Boll Ist Sieroter Milan* 49(2):145-151, 1970.

9139 AUSTRALIA ANTIGEN IN VIRAL HEPATITIS AND OTHER DISEASES. *(It.)* Aiuti, F. (Hosp. San Giacoma, Rome, Italy), S. Lo Sardo, L. Orsini and M. Costa. *Rec Progr Med* 48(2):125-133, 1970.

9140 AN OUTBREAK OF INFECTIOUS HEPATITIS IN A VILLAGE SCHOOL CONTROLLED WITH HUMAN IMMUNOGLOBULIN. *(E.)* Pether, J. V. S. (Public Hlth. Lab., Taunton, England), D. E. Clare and J. Beasley. *Med Officer* 124(13):165-166, 1970.

9141 AUSTRALIA ANTIGEN AND VIRAL HEPATITIS. II. PRESENCE AND BEHAVIOR OF AUSTRALIA ANTIGEN IN LIVER DISEASES. *(It.)* Pagliaro, L. (Inst. Path. Med., U. Palermo, Italy), L. Dardanoni, C. Spano, G. Cascio, F. Bruno and G. Filippazzo. *Boll Ist Sieroter Milan* 49(2):152-158, 1970.

9142 SULFOBROMOPHTHALEIN CLEARANCE IN PREGNANT WOMEN WITH A HISTORY OF VIRAL HEPATITIS. *(It.)* D'Antonio, G. (Sch. Obstet. Salerno, U. Naples, Italy). *Rass Int Clin Ter* 50(6):371-375, 1970.

o Diagproc (8749)(8767)
o D:Livbil (9041)(9053)
o D:Livbil:C.Hep (9144)

LIVER AND BILIARY TRACT

Chronic Hepatitis

9143 CHRONIC AGGRESSIVE HEPATITIS: D-PENICILLAMINE TREATMENT. *(Ger.)* Wiontzek, H. (St. Hosp. Geesthacht, Germany). *Med Welt* 21(33):1419-1423, 1970.

9144 FREE AND ESTERIFIED FATTY ACIDS IN ACUTE AND CHRONIC HEPATITIS. *(Ger.)* Martinelli, M. (Dept. Med. U. Bologna, Italy), M. Disertori and C. Montero. *Schweiz Med Wschr* 100(40):1701-1702, 1970.

9145 AZOTHIOPRIN IN THE TREATMENT OF ACTIVE CHRONIC HEPATITIS. *(It.)* Danieli, G. (Dept. Med., U. Bologna, Italy), P. R. Dalmonte and M. Montroni. *Minerva Med* 61(55):3032-3039, 1970.

9146 POSTHEPATITIS SYNDROMES. *(It.)* Dioguardi, N. (Dept. Med., U. Milan, Italy). *Gazz Sanit* 41(4-5):167-171, 1970.

9147 INDICATIONS IN LIVER THERAPY. *(Ger.)* Wildhirt, E. (St. Hosp. Kassel, Germany). *Med Welt* 21(26):1175-1178, 1970.

9148 CHRONIC HEPATITIS: PATHOGENESIS, SYMPTOMATOLOGY, AND THERAPY. *(Ger.)* Meyer Zum Buschenfelde, K. H. (Canton Hosp., Genf, Switzerland). *Therapiewoche* 20(29):1405-1412, 1970.

9149 PATHOGENESIS OF CHRONIC LIVER DISEASE. *(Ger.)* Bruhl, W. (Korbach, Germany). *Med Welt* 21(26):1181-1186, 1970.

o P:Secr:Hepatobil (8650)
o Diagproc (8724)
o D:Livbil (9044)(9050)
o D:Livbil:A.Nonv.Hep (9101)
o D:Livbil:A.V.Hep (9126)

Cirrhosis

9150 FAMILIAL CIRRHOSIS WITH AUTOIMMUNE FEATURES AND RAISED IMMUNOGLOBULIN LEVELS. *(E.)* Joske, R. A. (Dept. Med., U. Western Australia, Perth) and B. H. Laurence. *Gastroenterology* 58(4): 546-552, 1970.

A kindred is described in which 5 members had chronic liver disease (cirrhosis) with abnormal immunological findings and 8 others had abnormal immunological findings without liver diseases. These figures are statistically significant especially as the kinship includes children and young adults in whom the incidence of autoimmune reactions was low in the normal population. Results are attributed to a familial mechanism, and possibly genetic since marriage partners examined were normal, the family was scattered, and no environmental hepatotoxins were identified. Raised immunoglobulin levels were both more frequent and appeared at an earlier age than liver disease in this kindred. The two youngest members of generation II and 3 or 4 investigated in generation III had increased immunoglobulin values without liver disease. The immunoglobulin components affected were IgG and IgA and these were shown to be effective antibodies. The only autoimmune disease of the kindred was cirrhosis. The genetic mechanism is unknown, but high incidence of abnormal findings in this kindred suggests a dominant inheritance, possibly at the level of immunoglobulin control.

9151 PRIMARY CARCINOMA OF THE LIVER COMPLICATING CIRRHOSIS. *(E.)* Oomen, H. A. P. C. (Path. Anat. Lab., U. Amsterdam, Netherlands) and H. Kluck. *Arch Chir Neerland* 22(3):173-182, 1970.

In a review of all cases of liver pathology encountered in 6,572 autopsies (Amsterdam) from 1959-1969, 147 cases could be classified as cirrhosis (65 patients with cirrhosis unexpected and 82 patients with cirrhosis suspected or expected). Twenty cases of this group also had liver carcinoma (12 male and 8 female), with 19 of 20 being European. In the majority of cases (103) clinical data provided no clues to the etiology of cirrhosis, but the disease was attributed to abuse of alcohol in 18 patients and to sequelae of infectious hepatitis in 11. In 19 of 20 patients a pathognomonic macroscopic appearance of the tumor occurred. Malignant nodules differed from cirrhotic nodules in their irregular outline, size and color. This aspect of malignancy was easily recognized by inspection of the liver surface during abdominal operations. The possibility of primary liver carcinoma is recommended when selecting cirrhotic patients for surgical procedures and in the postoperative control.

9152 HISTOCHEMICAL DETECTION OF FIBRINOLYTIC ACTIVITY IN LIVER BIOPSIES. *(Ger.)* Denk, H. (Med. U. Clin., Vienna, Austria), H. Schnack and E. Deutsch. *Acta Hepatosplen* 17(4):221-228, 1970.

The presence of fibrinolytic activity was investigated (Todd's histochemical technique) in liver biopsies from 43 patients with liver disease, 23 of whom had cirrhosis. Definite fibrinolytic activity located in the connective tissue and on the boundaries between parenchymal and connective tissue was observed in 17 cirrhotic patients. The most severe fibrinolysis occurring at endothelial cell and capillary levels was observed in progressive cirrhosis with parenchymal necrosis and dim boundaries of the parenchymal remainder. Minor fibrinolysis confined only to endothelial cells of larger blood vessels in the periportal region was found in 9 biopsies. No fibrinolytic activity was noticed in 17 patients, 2 of whom had inactive cirrhosis, 1 had interstitial hepatitis and 1 patient had liver necrosis produced by CCl_4 poisoning. Clotting alterations characteristic in patients with liver cirrhosis may be due to local fibrinolytic processes.

9153 CIRRHOSIS AND DIABETES: V. SERUM HUMAN GROWTH HORMONE LEVELS IN LAENNEC'S CIRRHOSIS. *(E.)* Conn, H. O. (VA Hosp., West Haven, Conn.) and W. H. Daughaday. *J Lab Clin Med* 76(4): 678-688, 1970.

The relation between diabetes and cirrhosis and elevated serum growth hormone levels was investigated in 18 patients with Laennec's cirrhosis, including 3 studied before and after portacaval anastomosis. Fasting growth hormone levels were elevated in 14 of the 18 patients, and the cirrhosis was more advanced and usually associated with portal hypertension in these patients. Although the mean growth hormone concentration decreased after oral glucose, some patients exhibited paradoxical increments and, in others, growth hormone levels were not suppressed; i.v. glucose was even less effective in suppressing growth hormone levels. Sustained hypersomatotropism could contribute to carbohydrate intolerance in cirrhotic patients and to overt diabetes in those with genetic susceptibility to diabetes.

9154 ALCOHOL METABOLISM IN CHRONIC ALCOHOLISM. *(Ger.)* Ugarte, G. (Med. Clin. U. Chile, Santiago), T. Pereda, M. E. Pino and H. Iturriaga. *Therapiewoche* 20(39):2275-2282, 1970.

9155 HEMORRHAGE OF ILEAL VARICES IN PORTAL HYPERTENSION. *(Ger.)* Raithel, D. (Surg. Clin. Polyclin., U. Erlangen-Nuremberg, Germany) and E. Muhe. *Chirurg* 41(7):329-330, 1970.

9156 LEUCOCYTIC RESISTANCE IN BONE MARROW FUNCTIONAL TESTS IN PATIENTS WITH CHRONIC LIVER DISEASE. *(Ger.)* Kramme, U. (Med. Acad. Lubeck, Germany) and J. Weinreich. *Klin Wschr* 48(19):1192-1194, 1970.

9157 LIVER FUNCTION AFTER DECOMPRESSIVE PORTACAVAL SHUNT IN THE CIRRHOTIC PATIENT: REVIEW AND PROSPECTS. *(Fr.)* De Groote, J. (Acad. Hosp. St. Rafael, Louvain, Belgium), W. Van Mieghem and J. Vandenbroucke. *Acta Gastroent Belg* 33(6):453-463, 1970.

9158 THE MANAGEMENT OF ASCITES IN PATIENTS WITH CIRRHOSIS OF THE LIVER. *(E.)* Gitlin, N. (Groote Schuur Hosp., Cape Town, Union of South Africa). *S Afr Med J* 44(26):760-763, 1970

9159 ANICTERIC LIVER CIRRHOSIS: CORRELATION BETWEEN SULFOBROMOPHTHALENIN AND CHOLINESTERASE TESTS. *(Por.)* Rosa, H. (Fac. Med. Fed. U. Goias, Brazil). *Arq Gastroent* 7(2):63-65, 1970.

9160 PITUITARY-ADRENAL FUNCTION IN LIVER CIRRHOSIS. *(Fr.)* Ruedi, B. (Med. U. Clin. Lausanne, Switzerland), G. A. Borel and P. Magnenat. *Schweiz Med Wschr* 100(40):1685-1686, 1970.

9161 PARTIAL HEPATECTOMY IN EXPERIMENTAL AND HUMAN CIRRHOSIS. *(E.)* Olsson, R. (Sahlgrenska Hosp., Goteborg, Sweden). *T Gastroent* 13(2):103-113, 1970.

9162 AMMONIUM CHLORIDE REABSORPTION FROM THE INTESTINE IN CONDITIONS OF PORTAL HYPERTENSION. *(Ger.)* Wagner, K. (Robert Rossle Clin., Berlin, Germany), W. Wirbatz, H. B. Zimmermann and W. Schimmelpfennig. *Z Ges Inn Med* 25(12):556-558, 1970.

9163 THERAPY AND PROGNOSIS OF LIVER CIRRHOSIS: LABORATORY INVESTIGATIONS AND STATISTICAL ANALYSIS. *(It.)* Cairella, M. (Dept. Med., U. Rome, Italy), R. Coppi and E. D'Arcangelo. *Clin Ter* 52(1):17-53, 1970.

9164 LIVER SIZE IN THE CIRRHOTIC PATIENT: LIVER BLOOD FLOW AND LIVER FUNCTION. *(Ger.)* Blankart, R. (Inst. Clin. Pharmacol., U. Berne, Switzerland), A. Halpern, J. Bircher, J. Tauber, H. Bucher, H. Rosler, W. A. Fuchs and R. Preisig. *Schweiz Med Wschr* 100(28):1211, 1970.

9165 AMMONEMIA IN PATIENTS WITH LIVER CIRRHOSIS AFTER TREATMENT WITH ANTIBIOTICS. *(It.)* Micarelli, A. (Polyclin. Hosp. Umberto I. Rome, Italy) and M. Faberi. *Gazz Int Med Chir* 75(4):313-319, 1970.

9166 TREATMENT OF HEPATOPORTAL ENCEPHALOPATHY WITH LACTULOSE. *(Ger.)* Siebner, H. (Marien Hosp., Hamburg, Germany) and H. P. Missmahl. *Deutsch Med Wschr* 95(24):1309-1315, 1970.

9167 CIRRHOSIS OF THE LIVER WITH HYDROTHORAX PATHOGENESIS. *(Fr.)* Magnenat, P. (Med. Clin. U. Lausanne, Switzerland), R. Stucki and Y. Capitaine. *Schweiz Med Wschr* 100(36):1528-1531, 1970.

9168 RENAL MEDULLAR NECROSIS AND LIVER CIRRHOSIS. *(Fr.)* Jungers, P. (Hosp. Necker, Paris, France), D. Kleinknecht, J. P. Grunfeld, D. Ganeval and J. M. Watchi. *Ann Med Intern* 121(6-7):639-643, 1970.

9169 BIDIMENSIONAL IMMUNOELECTROPHORESIS IN LIVER CIRRHOSIS. *(Fr.)* Rebeyrotte, P. (Hosp. Broussais, Paris, France), J. P. Baujat, J. P. Labbe and A. Kcutsoukos. *Path Biol* 18(11-12-13-14): 653-661, 1970.

- P:Morph (8519)
- P:Secr:Hepatobil (8607)
- Diagproc (8706)(8724)
- D:Livbil (9041)(9042)(9044)(9050)(9065)(9079)(9085)
- D:Livbil:A.Nonv.Hep (9102)(9110)(9113)
- D:Livbil:C.Hep (9147)(9149)
- D:Gen:Parasit (9281)

LIVER AND BILIARY TRACT

Gallbladder and Biliary Tract Diseases

9170 FECAL FATTY ACID PATTERNS IN THE NEONATE. *(E.)* Stevens, J. F. (King's Coll. Hosp., London, England). *J Med Lab Technol* 27(3):327-331, 1970.

Fatty acid composition of feces in the neonate (1 week after birth) was determined by gas chromatography of the methyl esters and compared with the fatty acid composition of the human or bovine milk given to healthy and jaundiced babies. Breast milk contained slightly lower proportions (1-3%) of the saturated fatty acids (C:14 through C:18) and higher proportions (2-7%) of the unsaturated fatty acids (C:16:1, C:18:1, and C:18:2), but samples of feces from breast-fed and bottle-fed babies showed insignificant differences. Feces from babies with obstructive jaundice contained a greatly increased amount of oleic acid (64.4%) compared to feces from healthy babies (47.7%) and decreased amounts of myristic (2.4%), palmitic (13.0%), and stearic (3.4%) compared to feces from healthy babies (4.8%, 24.4%, and 11.9%, resp.).

9171 REPLACEMENT OF THE COMMON BILE DUCT BY SILICONE RUBBER. *(E.)* Vos, A. (Surg. Dept., Munic. U., Amsterdam, Netherlands). *Arch Chir Neerland* 22(3):143-153, 1970.

9172 ACUTE SUPPURATIVE CHOLANGITIS DUE TO AMPULLARY FIBROSIS. *(E.)* Nardi, G. L. (Massachusetts Gen. Hosp., Boston). *Surg Clin N Amer* 50(5):1137-1140, 1970.

9173 CANCER OF THE GALLBLADDER. (PRESENT STATUS). *(Fr.)* Girard, M. M. (Red Cross Hosp., Lyon, France). *J Med Lyon* (1189):1361-1372, 1970.

9174 A RARE CASE OF GALLBLADDER ANOMALY: DOUBLE GALLBLADDER. *(It.)* Papa, B. (Major Hosp Lodi, Milan, Italy) and G. Ciccone. *Rass Int Clin Ter* 50(6):376-386, 1970.

9175 BILE DUCT-COLONIC FISTULAS. *(It.)* Sbriccoli, A. (Dept. Surg., U. Bologna, Italy) and F. Luttichau. *Rass Int Clin Ter* 50(6):327-340, 1970.

9176 PRIMARY STENOSIS OF BILE DUCTS. *(Fr.)* Leger, L. (Hosp. Cochin, Paris, France), E. Roseau, T. Dentan and G. Lemaigre. *J Chir* 99(4): 365-370, 1970.

9177 UNUSUAL FEATURES OF CHOLEDOCHODUODENAL FISTULAS. *(Fr.)* Clot, J. P. (no affil) and M. Berlinski. *Bull Mem Soc Chir Paris* 60(1): 17-22, 1970.

9178 BILE DUCT OBSTRUCTION DUE TO HETEROTOPIC PANCREATIC TISSUE IN THE DUODENAL WALL. *(Fr.)* Paraf, A. (Hosp. Franco-Musulman, Bobigny, France), F. Potet, A. Menager, C. Menager and J. Rautureau. *Rev Medicochir Mal Foie* 45(3):165-170, 1970.

9179 MALIGNANT TUMORS OF EXTRAHEPATIC BILE DUCTS. *(Fr.)* Hauser, J. (Dist. Hosp. Nyon, Switzerland) and M. Y. Peter. *Helvetia Chir Acta* 37(4-5):377-394, 1970.

9180 NONCALCULOUS ACUTE CHOLECYSTITIS FOLLOWING SURGERY, TRAUMA AND ILLNESS. *(E.)* Robertson, R. D. (U. Oregon Med. Sch., Portland). *Amer Surg* 36(10):610-614, 1970.

9181 SURGICAL TREATMENT OF BILE DUCT DISEASES. *(Rus.)* Kolomiychenko, M. I. (17/6 Reyterskaya Str., Kiev, USSR) and I. T. Tsyganenko. *Klin Khir* (343):13-19, 1970.

9182 SURGERY OF EXTRAHEPATIC BILE DUCTS IN CHOLELITHIASIS. *(Ger.)* Eder, H. (Dist. Hosp. Klagenfurt, Germany). *Zbl Chir* 95(35):1039-1046, 1970.

9183 EMERGENCY CHOLECYSTECTOMY. *(Fr.)* Camenitta M. (Bucarest Munic. Emerg. Hosp., Rumania), M. Constantinescu, C. Olteanu and M. Mogos. *Bull Mem Soc Chir Paris* 60(2):76-88, 1970.

9184 HEMOBILIA: A CASE OF UNUSUAL ETIOLOGY AND ITS MANAGEMENT. *(E.)* McLachlin, A. D. (Fac. Med. U. Western Ontario, London, Canada) and J. C. G. Coles. *Surg Clin N Amer* 50(5):1107-1110, 1970.

9185 NONOBSTRUCTIVE DILATATION OF THE COMMON DUCT. *(E.)* Longmire, W. P., Jr. (UCLA Sch. Med., Calif.) and S. Mandiola. *Surg Clin N Amer* 50(5):1099-1106, 1970.

9186 ABDOMINAL THORACIC FISTULA AFTER CHOLEDOCHOTOMY. *(Ger.)* Fekete, F. (Lazlo Hosp., Budapest, Hungary), I. Simonyi and L. Berkovits. *Chirurg* 41(7):328-329, 1970.

9187 COMPARATIVE DETERMINATIONS OF ALKALINE PHOSPHATASE IN SERUM, GALLBLADDER BILE AND COMMON DUCT BILE. *(Ger.)* Ohlne, J. (Munchen Med. Coll., Germany) and H. Ley. *Klin Wschr* 48(17): 1056-1063, 1970.

9188 THE SIPHON'S DISEASE: ANATOMIC AND RADIOLOGICAL STUDY WITH SURGICAL CONSIDERATIONS. *(It.)* Di Genova, L. (1st Surg. Clin. U. Rome, Italy). *Policlinico* 77(3):137-147, 1970.

9189 FLOATING BILE STONES RELATED TO BILE VISCOSITY AND GALLBLADDER CONTRACTION. *(Ger.)* Dinkel, L. (Heilbronn, Germany). *Fortschr Roentgenstr* 113(3):385-386, 1970.

9190 SPONTANEOUS DISAPPEARANCE OF A SOLITARY OCCLUSIVE STONE IN THE GALLBLADDER NECK. *(Ger.)* Dinkel, L. (Heilbronn, Germany). *Fortschr Roentgenstr* 113(3):387-389, 1970.

91 PSEUDOCYSTIC BILE DUCT DILATATION. *(Ger.)* Lagemann, K. (Mad. Radiol. Inst., U. bingen, Germany). *Fortschr Roentgenstr* 113(3): 6-375, 1970.

92 EXPERIMENTAL GALLBLADDER LITHIASIS: RELATIONSHIP BETWEEN GALLSTONES AND LESIONS. *r.)* Besancon, F. (Lariboisiere Hosp., Paris, ance), C. Marche and J. Parrot. *Arch Franc Mal par Dig* 59(7-8):429-452, 1970.

93 EXPERIENCE WITH THE WHIPPLE RESECTION: A PERSONAL SERIES OF EIGHT CASES. *(E.)* Kenzie, A. D. (Vancouver Gen. Hosp., British lumbia, Canada) and A. P. Chan. *Amer Surg* 36(10): 1-595, 1970.

94 ASYMPTOMATIC LIVER, GALLBLADDER AND BILE DUCT LITHIASIS WITH CHOLECYSTODUODENAL STULA AND INFLAMMATION OF ODDI'S SPHINCTER. *(It.)* iz, G. (Central Hosp. Naples, Italy), U. strangelo and M. Siciliani. *Rass Int Clin Ter* (6):349-353, 1970.

95 CONGENITAL ATRESIA OF BILE DUCTS: LIVER HISTOPATHOLOGY. *(It.)* Negri, L. (United sp. Livorno, Italy) and A. Righini. *Riv Chir diat* 12(2):279-304, 1970.

96 HYPERPLASIA OF THE GALLBLADDER: REPORT ON 10 CASES. *(It.)* Stampino, C. G. (Hosp. v. Gallarate, Italy). *Minerva Med* 61(17):826-833, 70.

9197 "BILIARY" PERITONITIS LACKING PERFORATION. *(It.)* Bertoni, F. (Inst. Anat., U. Bologna, Italy), V. Iasonni and G. Martinelli. *Arch Ital Anat Istol Pat* 43(2-3):194-220, 1970.

9198 THE SYMPTOMLESS GALLSTONE. *(Ger.)* Staffen, A. (2nd Surg. U. Clin. Vienna, Austria) and M. Staudacher. *Chirurg* 41(8):377-379, 1970.

9199 CHOLEDOCHOLITHIASIS AS A DELAYED COMPLICATION OF STOMACH RESECTION DUE TO DUODENAL ULCER. *(Ger.)* Witthaut, H. (Elisabeth Hosp., Essen, Germany) and G. Borger. *Zbl Chir* 95(26):768-771, 1970.

o P:Motil (8576)
o P:Secr:Panc (8603)
o P:Secr:Hepatobil (8607)
o Diagproc (8703)(8710)(8715)(8736)(8746)(8752)(8756)
o D:Livbil (9041)(9048)(9064)

GENERAL

200 LATE GASTROINTESTINAL COMPLICATIONS IN PATIENTS IRRADIATED FOR CANCER OF THE ERVIX. *(E.)* Ho Yuen, B. (Vancouver Gen. Hosp., itish Columbia, Canada) and D. A. Boyes. *Amer urg* 36(10):642-645, 1970.

venty of 972 instances of cancer of the cervix ges I to IV treated in the period 1954 to 1964 usive at the British Columbia Cancer Institute associated with major gastrointestinal complications noticed approximately 20 months after treatent. In seven of the 20 (or 35%), bowel injury as considered to be due to irradiation in the absence of recurrent cancer. In 12 of the 20 (or 60%) ecurrent cancer complicating the gastrointestinal esion was present; data were insufficient to be ertain of recurrence in 1 case. Possible contriutory factors causing the gastrointestinal lesion were found in 13 (or 65%); the exact significance of these factors is unknown because the same factors in instances without bowel complications were not assessed.

9201 INDICATOR DILUTION STUDIES IN THE SMALL BOWEL OF PATIENTS WITH CHOLERA DIARRHEA: I. JEJUNAL FLOW - TRANSIT TIME - VOLUME RELATIONSHIPS. *(E.)* Brigham, K. L. (Vanderbilt U. Sch. Med., Nashville, Tenn.), J. G. Banwell, N. F. Pierce, R. C. Mitra, D. S. Fedson and A. Mondal. *Johns Hopkins Med J* 127(2):97-106, 1970.

Flow, mean transit time, and mean transit time volume and their relationships were studied in the jejunum of a patient during an attack of acute cholera and during convalescence using indicator dilution techniques. In acute cholera as the rate of infusion increased from 0 ml/min to 30 ml/min, the mean flow rate increased (3.25 to 17.60 ml/min), mean transit time decreased (12.40 to 7.69 min), and mean transit time volume increased (32.77 to 135.55 ml), and in convalescence as the infusion rate increased from 5 ml/min to 30 ml/min, the mean flow rate increased (6.17 to 22.30 ml/min), mean transit time decreased (8.17 to 7.61 min), and mean transit time volume increased (47.67 to 176.17 ml). Mean transit time and calculated flow rate in a 30 cm jejunal segment showed a weak correlation in the acute studies (r = -0.78) but not in the convalescent period, while segment volumes and calculated flows correlated well in both acute (r = 0.950) and convalescent (r = 0.997) studies. Net fluxes of water, sodium, potassium, chloride, and bicarbonate in the 30 cm study segment were all in the direction of the bowel lumen in both studies indicating that the abnormality of jejunal fluid transport persists into the clinical recovery period.

9202 USE OF NEOMYCIN IN THE TREATMENT OF INFECTIOUS DIARRHEA IN INFANTS: A CLINICAL TRIAL. *(Fr.)* Farriaux, J. P. (no affil) and G. Fontaine. *Lille Med* 15(supp. to 5):756-758, 1970.

9203 CLINICAL EFFECTS OF DIROMO ON INTESTINAL DISEASES: DOUBLE-BLIND STUDIES. *(Jap.)* Morisawa, T. (Ohtsu Red Cross Hosp., Japan). *Jap Arch Inter Med* 17(4):99-102, 1970.

9204 TOTAL INFARCT OF SMALL INTESTINE: EMBOLECTOMY OF SUPERIOR MESENTERIC ARTERY. *(It.)* Esposito, G. (Dept. Surg., U. Naples, Italy), G. Negrone, D. Napolitano and C. Lombardi. *Rass Int Clin Ter* 50(4):231-236, 1970.

9205 ADENOVIRUS TYPE 2 ENTERITIS IN INFANTS AND SMALL CHILDREN. *(Ger.)* Bohlmann, H. G. (Child. Clin. Ruhr U., Essen, Germany) and E. Kuwert. *Monatsschr Kinderheilk* 118(6):368-369, 1970.

9206 BLOOD VOLUME DETERMINATION IN MECHANICAL ILEUS. *(Ger.)* Hemsendorf, K. (Rudolph Virchow Hosp., Berlin, Germany) and R. Siewert. *Zbl Chir* 95(28):822-830, 1970.

9207 THE VERTEBRAL COLUMN IN GASTROINTESTINAL FUNCTIONAL DISORDERS. *(Ger.)* Reinstein, H. (Dept. Intern Med., Stuttgart, Germany). *Z Allgemeinmed* 46(23):1165-1167, 1970.

9208 IMMUNOFLUORESCENCE STUDIES ON THE PATHOGENESIS OF INTESTINAL CHLAMYDIAL INFECTIONS IN CALVES. *(E.)* Eugster, A. K. (Texas Vetr Med. Diagn. Lab., College Station), B. K. Joyce and J. Storz. *Infect Immun* 2(4):351-359, 1970.

9209 RUPTURED HEPATIC ARTERY ANEURYSM. *(E.)* Asbury, G. F. (Bremerton, Wash.). *Amer Surg* 36(10):631-634, 1970.

9210 INTESTINAL OBSTRUCTION IN THE CARDIAC PATIENT. *(E.)* Meitus, M. L. (Miami Beach, Fla.). *J Abdom Surg* 12(10):169-175, 1970.

9211 INSIDON IN GASTROENTEROLOGY. *(Fr.)* Arzul, C. (Hosp. Nantes, France). *Ouest Med* 23(18):1523-1528, 1970.

9212 NEONATAL INTESTINAL OCCLUSIONS (41 CASES IN 3 YEARS). *(Fr.)* Escolan, J. (Hosp. Rennes, France). *Ouest Med* 23(18):1477-1479, 1970.

9213 ACRODERMATITIS ENTEROPATHICA: THREE CASES IN THE SAME FAMILY. *(Fr.)* Castel, Y. (no affil), J. Roche, J. M. Le Fur and R. Masse. *Ouest Med* 23(14-17):1417-1421, 1970.

9214 PNEUMATOSIS OF THE PORTAL VENOUS SYSTEM. *(Fr.)* Capitaine, Y. (Med. U. Clin. Lausanne, Switzerland), P. Terrier and P. Magnenat. *Schweiz Med Swchr* 100(28):1212-1213, 1970.

9215 POSTOPERATIVE IMMEASURABLE FLUID LOSSES IN RELATION TO THE EXTENT OF THE OPERATIVE PROCEDURE IN GASTROINTESTINAL SURGERY. *(E.)* Christiansen, J. (Finsen Inst., Copenhagen, Denmark *Acta Chir Scand* 136(5):419-422, 1970.

9216 A RECENT CASE OF BOTULISM IN HOKKAIDO, JAPAN. *(E.)* Craig, J. M. (San Jose St. Coll., Calif.), H. Iida and K. Inoue. *Jap J Med Sci* 23(3):193-198, 1970.

9217 A LONGITUDINAL STUDY OF ENTEROVIRUS INFECTIONS IN KAWASAKI, JAPAN: I. VIRUS ISOLATIONS FROM 1962 TO 1966. *(E.)* Moritsugu, Y. (Natl. Inst. Hlth., Tokyo, Japan), T. Komatsu, T. Karasawa, M. Hara, K. Tsuchiya, Y. Ysuchiya, C. Nak K. Soda, I. Tagaya, Y. Miki, S. Komiyama, H. Mizuta Y. Yamazaki and S. Asada. *Jap J Med Sci Biol* 23(3) 147-160, 1970.

9218 STUDIES ON THE SERUM THERAPY OF TYPE E BOTULISM: III. *(E.)* Ono, T. (Hokkaido Inst. Publ. Hlth., Sapporo, Japan), T. Karashimada and H. Iida. *Japa J Med Sci Biol* 23(3):177-191, 19

9219 INFLAMMATORY MASS OF THE MESENTERY: DIA NOSTIC AND THERAPEUTIC PROBLEMS. *(E.)* Evans, W. E. (Marquette Sch. Med., Milwaukee, Wisc., T. R. Wall and E. H. Ellison. *Surg Clin N Amer* 50(1039-1043, 1970.

9220 TRANSIT THROUGH THE DIGESTIVE TRACT OF THE INOCULA OF SEVERAL BACTERIAL STRAINS INTRODUCED "PER OS" INTO AXENIC AND "HOLOXENIC" MICE: THE ANTAGONISTIC EFFECT OF THE MICROFLORA OF THE GASTROINTESTINAL TRACT. *(Fr.)* Ducluzeau, R. (Microbial Ecol. Lab., Central Inst. Technol. Animal Products, France), M. Bellier and P. Raibaud. *Zbl Bakt* 213(4):533-548, 1970.

9221 CLINICAL EXPERIENCE WITH SULPIRIDE IN GASTROINTESTINAL PATHOLOGY. *(Fr.)* Negret, J. P. (Bordeaux, France). *Bordeaux Med* 3(6):1713-1718, 1970.

9222 SPONTANEOUS RUPTURE OF THE PANCREATICODUODENAL ARTERY. *(Fr.)* Boutelier, P. (C.H.U. Pitie-Saltpetriere, Paris, France) and C. Schonbuch. *J Chir* 99(4):417-420, 1970.

9223 STENOSIS OF THE COMMON LIVER ARTERY DUE TO MUSCULAR HYPERPLASIA. *(Fr.)* Lambert-LeCler, G. (St. Joseph Clin., Liege, Belgium), R. Lombard, L. Van De Berg and C. Dreze. *Rev Medicochir Mal Foie* 45(3):143-147, 1970.

9224 ANTIBIOTICS AND ALTERATIONS OF INTESTINAL MICROFLORA. *(Fr.)* Truchaud, M. (no affil). *Med Afr Noire* 17(7):601-604, 1970.

9225 CELIAC ARTERY STENOSIS DUE TO CONSTRICTION BY A LIGAMENT. *(Fr.)* Hivet, M. (Hosp. Antoine, Paris, France) and B. Lagadec. *Rev Medicochir Mal Foie* 45(3):129-134, 1970.

9226 CLINICAL USE OF "FLAVIASTASE" IN DYSPEPSIA. *(Fr.)* Sambin, M. S. (no affil). *J Med Lyon* (1186):1127-1136, 1970.

9227 STENOSIS OF CELIAC AXIS AND DUODENOPANCREATECTOMY. *(Fr.)* Gautier-Benoit, C. (Fac. Med. Lille, France), J. Luez, C. Lhermine, A. Wurtz and M. Houcke. *J Chir* 99(4):381-390, 1970.

9228 GASTROINTESTINAL HEMORRHAGE DUE TO RESPIRATORY DISTRESS (PRESENT STATE OF THE PROBLEM). *(Fr.)* Choubrac, P. (Hosp. Laennec, Paris, France), P. Cornu and J. Vedel. *Concours Med* 92(41): 7357-7366, 1970.

9229 CREAM PASTRIES AND PUBLIC HEALTH. 1. FOOD POISONING EPIDEMIC DUE TO AN ENTEROTOXIC STAPHYLOCOCCUS. *(Fr.)* Catsaras, M. (Inst. Pasteur, Lille, France), R. Seynave and C. Sery. *Ann Inst Pasteur Lille* 21:177-192, 1970.

9230 GASTROINTESTINAL HEMORRHAGE DURING ACUTE CIRCULATORY INSUFFICIENCY. *(Fr.)* Rapin, M. (Hosp. Raymond Poincare, Garches, France), S. Grosbuis, S. Kernbaum and M. Goulon. *Ann Med Intern* 121(8-9):673-679, 1970.

9231 TREATMENT OF UPPER INTESTINAL HEMORRHAGE. *(Ger.)* Streicher, H. J. (Ferdinand Sauerbruch St. Hosp., Wuppertal, Germany). *Deutsch Med Wschr* 95(40):2035-2037, 1970.

9232 SURGERY OF EXTERNAL INTESTINAL FISTULAS. *(Rus.)* Ovnatanian, K. T. (Donets Med. Inst., USSR), V. S. Karpenko and G. D. Popandopulo. *Klin Khir* (343):1-6, 1970.

9233 INTUSSUSCEPTION AFTER MAJOR ABDOMINAL OPERATIONS IN CHILDREN. *(E.)* Guttman, F. M. (St. Justine Child. Hosp., Montreal, Quebec, Canada), J. C. Ducharme and P. P. Collin. *Canad J Surg* 13(4):427-433, 1970.

9234 MASSIVE GASTROINTESTINAL HEMORRHAGE. *(E.)* Spitzer, G. (Surg. Dept. U. Giessen, Germany) and K. Zimmermann. *Minnesota Med* 53(10): 1099-1105, 1970.

9235 TRAUMATIC RUPTURE OF DIAPHRAGM. *(Ger.)* Muller-Wiefel, H. (Surg. U. Clin. Kiel, Germany). *Chirurg* 41(7):315-320, 1970.

9236 FOOD POISONING AND INFECTION AS VIEWED BY THE HYGIENIST. *(Ger.)* Dimmling, T. (Inst. Hyg., Microbiol., Wurzburg, Germany). *Oeff Gesundheitswesen* 32(9):468-475, 1970

9237 ENTERIC FEVER, PARATYPHOID FEVER AND SALMONELLOSES: THERAPEUTIC RESULTS WITH BACTRIM. *(Ger.)* Meyer, H. A. (Neumunster Hosp., Zurich, Switzerland). *Schweiz Med Wschr* 100(35):1493-1497, 1970

9238 ACUTE ABDOMEN. *(Ger.)* Neuhaus, G. A. (Med. Clin., Polyclin., Free U., Berlin, Germany). *Deutsch Med J* 21(11):793-794, 1970.

9239 ACUTE ABDOMEN. *(Ger.)* Schutz, W. (August Victoria State Hosp., Berlin, Germany). *Deutsch Med J* 21(11):808-813, 1970.

9240 MECHANICAL ILEUS. *(Ger.)* Geisler, P. (St. Hosp., Moabit, Germany). *Deutsch Med J* 21(11):804-807, 1970.

9241 PERFORATION EPISODE CAUSING AN ACUTE ABDOMEN. *(Ger.)* Siewert, R. (Rudolph Virchow Hosp., Berlin, Germany). *Deutsch Med J* 21(11):798-802, 1970.

9242 ACUTE TRAUMATIC ABDOMEN. *(Ger.)* Heim, W. (Rudolph Virchow Hosp., Berlin, Germany). *Deutsch Med J* 21(11):795-797, 1970.

9243 KANENDOMYCIN THERAPY IN BACILLARY DYSENTERY. *(Jap.)* Takahashi, R. (Tokyo Munic. Ebara Hosp., Japan). *J Jap Ass Infec Dis* 44(3):176-180, 1970.

9244 EXPERIENCE WITH DIBROMOHYDROXYQUINOLINE AND IODOCHLOROHYDROXYQUINOLINE IN DIARRHEA. *(Jap.)* Matsubara, T. (Kagawa Central Hosp., Japan). *J Arch Intern Med* 17(3):85-88, 1970.

9245 EPIDEMIOLOGICAL INVESTIGATIONS ON *SALMONELLA THOMPSON* INFECTIONS: ROLE OF POULTRY AS AN INFECTIOUS RESERVOIR. *(Fr.)* Carbonnelle, B. (Inst. Pasteur, Lille, France), J. P. Becaud, F. Parvery and J. Pillot. *Ann Inst Pasteur Lille* 21(165-176, 1970.

9246 PREMATURE CORRECTIVE INTERVENTION IN ABDOMINAL SURGERY. *(Fr.)* Balatre, J. (Fac. Med. Lyon, France) and R. P. Correard. *Lyon Chir* 66(3):184-189, 1970.

9247 TYPHOID AND PARATYPHOID FEVER CARRIERS IN SCHLESWIG-HOLSTEIN. *(Ger.)* Bohlek, I. (Hyg. Inst. U. Kiel, Germany). *Gesundh Desinfekt* 62(6):84-86, 1970.

9248 *SHIGELLA SONNEI* INFECTIONS IN ADULTS: SULFONAMIDE THERAPY. *(Ger.)* Leithauser, W. (Med. Clin. U. Rostock, Germany) and P. Sievers. *Z Ges Inn Med* 25(14):655-657, 1970.

9249 INTESTINAL TUBERCULOSIS. *(Fr.)* Schepens, G. (no affil), J. Antoine and C. Van Der Meersch. *Scalpel* 123(19):343-346, 1970.

9250 PERFORATIVE PERITONITIS WITHOUT PERFORATION. *(Ger.)* Kapral, W. (Melk Hosp., Germany). *Zbl Chir* 95(31):938-940, 1970.

9251 FUNCTIONAL MESENTERIC VASCULAR OCCLUSION WITH PARTIAL NECROSIS OF COLON. *(Ger.)* Kell, H. H. (St. Hosp., Tangermunde, Germany). *Zbl Chir* 95(36):1083-1088, 1970.

9252 ZOLLINGER-ELLISON SYNDROME. *(Ger.)* Kerkhoven, P. (Med. U. Clin. Berne, Switzerland) and F. Halter. *Schweiz Med Wschr* 100(28):1226-1228, 1970

9253 THE INFLUENCE OF QUINOLINE DERIVATIVES ON PATHOGENIC AND NONPATHOGENIC INTESTINAL MICROORGANISMS. *(Ger.)* Ellenrieder, M. (Luitpold Bacteriol. Lab., Munich, Germany), P. Zeiller, H. Dinter and K. H. Sensch. *Arzneimittelforschung* 20(6): 821-824, 1970.

9254 CHRONIC RECURRENT ARTERIO-MESENTERIC INTESTINAL OCCLUSION. *(Ger.)* Herzog, B. (Basel, Switzerland). *Helvetia Chir Acta* 37(3):1970.

9255 LIVER BLOOD FLOW AFTER OCCLUSION OF HEPATIC AND SUPERIOR MESENTERIC ARTERIES. *(It.)* Andreadis, P. (Fac. Med. Thessalonica, Greece), G. Blatzas, D. Toussis and K. Kiriakou. *Minerva Med* 61(34):1845-1851, 1970.

9256 PATHOPHYSIOLOGY IN INTESTINAL OBSTRUCTION: I. DIGESTION AND ABSORPTION OF FAT IN CHRONIC INTESTINAL OBSTRUCTION AND ALTERATION IN COMPOSITION OF FATTY ACIDS IN INTESTINAL TRACT. *(Jap.)* Matsumura, C. (Sch. Med. Tokushima U., Japan). *Shikoku Acta Med* 26(2):120-129, 1970.

9257 PATHOPHYSIOLOGY IN INTESTINAL OBSTRUCTION: II. DIGESTION AND ABSORPTION IN EXPERIMENTAL ACUTE INTESTINAL OBSTRUCTION. *(Jap.)* Matsumura, C. (Sch. Med., Tokushima U., Japan). *Shikoku Acta Med* 26(2):130-134, 1970.

9258 PATHOPHYSIOLOGY IN INTESTINAL OBSTRUCTION: III. PROTEIN LEAKAGE INTO OBSTRUCTED BOWEL IN EXPERIMENTAL ACUTE INTESTINAL OBSTRUCTION. *(Jap.)* Matsumura, C. (Sch. Med. Tokushima U., Japan). *Shikoku Acta Med* 26(2):135-141, 1970.

- Diagproc (8720)(8721)(8722)(8723)(8744)(8759)(8763)(8764)(8769)(8770)(8781)(8782)
- D:Stomduo (8850)(8877)
- D:S.Intest (8902)(8908)(8911)
- D:S.Intest:Malabs (8928)
- D:L.Intest (8956)(8975)(8982)(8986)
- D:L.Intest:Ulccol (8996)
- D:Livbil (9056)(9062)(9063)
- D:Livbil:Gallb (9184)(9186)(9197)

9259 ANTHELMINTIC ACTIVITY OF PYRANTEL PAMOATE. *(E.)* Desowitz, R. S. (Sch. Med., U. Hawaii, Honolulu), T. Bell, J. Williams, R. Cardines and M. Tamarua. *Amer J Trop Med Hyg* 19(5):775-778, 1970.

The anthelmintic activity of pyrantel pamoate was investigated in 62 children infected with *Ascaris Lumbricoides*. A single dose (5 mg/pound) resulted in a cure in 53 cases by the criterion that no eggs were found in the $ZnSO_4$-concentrated stools; in the remaining positive cases, egg count was significantly reduced. In a second group of patients, a 2-day regimen (5 mg/pound daily) cured 37 of 38 *Ascaris*-infected children. A group of 56 patients (53 children and 3 adults) 43 with *N. americanus* infection received 5 mg of pyrantel suspension for 3 consecutive days, with 36 patients showing complete cure in 1 week. Side effects in 31 of 156 patients receiving pyrantel pamoate were chiefly low-grade abdominal cramp during expulsion of ascarids. No abnormal changes in urinalysis, SGOT, or the serum bilirubin levels after single- or tripple-dose regimens was observed. The compound showed no activity against strongyloidiasis, balantidiasis, or giardiasis.

9260 CLINICAL EVALUATION OF METRONIDAZOLE IN HEPATIC AMEBIASIS. *(E.)* Antani, J. (Med. Coll. Gulbarga, Mysore, India) and H. V. Srinivas. *Amer J Trop Med Hyg* 19(5):762-766, 1970.

The efficacy of metronidazole (Flagyl) in *Entamoeba histolytica* infection was tested in 25 hospitalized patients (aged 16-68 years) with secondary hepatomegaly; when metronidazole (200 mg, t.i.d. for 7 days) was administered to these patients, malaise, fever, and abdominal pain were relieved during the first 3 days of therapy and disappeared by the 6th day in most cases. Flatulence (a typical symptom) was markedly reduced in 15 of 25 patients by the end of the first week, and 5 more patients were relieved after 2 weeks. Hepatic tenderness disappeared in all patients after 3 days, and hepatomegaly regressed rapidly in all patients. At the end of 3 weeks, parasitologic cure was found in 22 of 25 patients which lasted for an additional 12 weeks after the beginning of treatment; cysts persisted in 3 patients. Side effects were transitory, and the drug was well tolerated.

9261 HYDATID DISEASE IN THE CENTRAL VALLEY OF CALIFORNIA: TRANSMISSION OF INFECTION AMONG DOGS, SHEEP, AND MAN IN KERN COUNTY. *(E.)* Schantz, P. M. (Dept. Epidem., U. California, Davis), R. P. Clerou, I. K. M. Liu and C. W. Schwabe. *Amer J Trop Med Hyg* 19(5):823-830, 1970.

A 49-year-old sheep rancher in Kern Caounty, California who died following surgery for removal of two fertile, unilocular hydatid cysts from his left lung was described. When the ranch (with 2,500 to 3,000 sheep) was investigated for *Echinococcus granulosus*, one dead sheep with a hydatic cyst of the liver and 10/11 infected sheep dogs were found. Dogs apparently ate sheep carcasses and ingested cysts with scolices. Of 74 relatives, employees and associates of the dead rancher, skin tests showed that 8 had wheals of 1 cm^2 or greater; of 7 of these persons tested by indirect hemagglutination, 2 showed possible *Echinococcus* infection.

9262 THIABENDAZOLE TREATMENT OF ASCARIASIS IN IRAN. *(Fr.)* Sanati, A. (no affil), E. Ghadirian and M. Siadate. *Med Trop* 30(4):521-525, 1970.

9263 LIVER AMEBIASIS IN SAIGON: DIAGNOSTIC PROBLEMS. *(Fr.)* Bezon, A. (no affil), M. Forcain, H. Vuillemin and H. Bandelier. *Med Trop* 30(4):508-512, 1970.

9264 INTESTINAL AMEBIASIS IN METROPOLITAN AREAS OF FRANCE. *(Fr.)* Duret, P. (no affil). *Concours Med* 92(38):6799-6805, 1970.

9265 LIVER AMEBIASIS IN LAOS: CURRENT STATUS. *(Fr.)* Gourillon, H. (no affil), G. Grange and J. Garnier. *Med Trop* 30(2):195-201, 1970.

9266 TREATMENT OF AMEBIC ABSCESSES OF THE LIVER: CURRENT DEVELOPMENTS. *(Fr.)* Carayon, A. (no affil), P. Laluque, D. Moine and M. Ducloux. *Med Trop* 30(4):494-507, 1970.

9267 TRICHOCEPHALOSIS: TREATMENT WITH N-(2'-CHLORO-4'-NITROPHENYL)-5-CHLOROSALICYLAMIDE. *(It.)* Adamo, F. (Dept. Med., U. Cagliari, Italy), A. Medda, B. Massidda and A. Curreli. *Clin Ter* 53(5):391-403, 1970

9268 EXPERIMENTAL SECONDARY ECHINOCOCCOSIS OF *ECHINOCOCCUS GRANULOSUS:* I. DEVELOPMENT IN DIFFERENT STRAINS OF MICE. *(E.)* Pennoit-De Cooman, E. (Lab. Zoophysiol., St. U. Ghent, Belgium) and P. H. De Rycke. *Z Parasit* 34(4):362-370, 1970.

9269 CAUSE OF RECURRING OBSTRUCTIVE JAUNDICE REVEALED BY PERCUTANEOUS CHOLANGIOGRAPHY-HYDATID CYST. *(E.)* Tuttle, R. J. (St. Joseph's Hosp., Hamilton, Ontario, Canada). *New Eng J Med* 283(15):805-806, 1970.

9270 STUDIES ON SCHISTOSOMIASIS IN A SOUTH AFRICAN BANTU SCHOOLCHILD POPULATION. *(E.)* Walker, A. R. P. (South African Inst. Med. Res., Johannesburg), B. F. Walker and B. D. Richardson *Amer J Trop Med Hyg* 19(5):792-814, 1970.

9271 LESIONS CAUSED BY EGGS OF THE CHANGHUA STRAIN OF *SCHISTOSOMA JAPONICUM* IN THE LIVER OF FORMOSAN MONKEYS. *(E.)* Hsu, S. Y. L (Coll. Med. U. Iowa, Iowa City), J. R. Davis, H. F. Hsu,

W. Mergner and G. L. Lust. *Amer J Trop Med Hyg* 19(5):785-791, 1970.

9272 AMEBIC LIVER ABSCESS: A REVIEW OF 113 CASES. *(E.)* Lewis, E. A. (U. Coll. Hosp., Ibadan, Nigeria) and A. U. Antia. *W Afr Med J* 19(4): 111-114, 1970.

9273 A CLINICAL STUDY OF 158 CASES OF AMEBIC LIVER ABSCESS. *(E.)* Mehta, A. (J. J. Hosp., Bombay, India) and B. J. Vakil. *Indian J Med Sci* 24(8):478-483, 1970.

9274 A FOCUS OF SCHISTOSOMIASIS IN CAMBODIA: I. CLINICAL STUDY OF 3 CASES. *(Fr.)* Tournier-Lasserve, C. (no affil), G. Audebaud, V. Brumpt, M. Jolly, F. Calvez, R. Mazaud, X. Imbert and R. Bazillio. *Med Trop* 30(4):451-461, 1970.

9275 A FOCUS OF SCHISTOSOMIASIS IN CAMBODIA: II. EPIDEMIOLOGICAL INVESTIGATION, PRELIMINARY RESULTS. *(Fr.)* Jolly, M. (no affil), R. Bazillio, G. Audebaud, V. Brumpt and B. Sophinn. *Med Trop* 30(4):462-471, 1970.

9276 PATHOGENESIS AND SYMPTOMATOLOGY OF OBSTRUCTIVE JAUNDICE IN HYDATID DISEASE. *(It.)* Ardito, G. (Surg. Dept. Catholic U. Sacred Hearth, Rome, Italy), L. Perrelli and V. Pugno. *Gass Int Med Chir* 75(2):93-103, 1970.

9277 AMEBIC ABSCESS OF THE LIVER. *(Fr.)* Cornet, A. (Hosp. Laennec, Paris, France), L. Brumpt, J. Dubrisay and P. Carayon. *Ann Med Intern* 121(6-7):629-634, 1970.

9278 BILHARZIASIS IN WOODY REGIONS: EPIDEMIOLOGY. *(Fr.)* Carrie, J. (no affil). *Med Afr Noire* 17(7):531-540, 1970.

9279 DETECTION AND TREATMENT OF BILHARZIASIS IN CHILDREN. *(Fr.)* De Paillerets, F. (no affil), J. Carrie, A. L. Carrie and R. Plumeau. *Med Afr Noire* 17(7):541-545, 1970.

9280 ANTHELMINTIC ACTION OF CUCURBITACINES: AN EXPERIMENTAL STUDY. *(Fr.)* Albert, O. (Fac. Med. Pharm., Reims, France), T. Djetcha, E. Lagrange, M. Aurousseau, P. Forgacs, J. Provost and R. Tiberghien. *Chim Ther* 5(3):205-210, 1970.

9281 INTRAVENOUS HEPATIC OPOTHERAPY IN TROPICAL LIVER DISEASES. *(Fr.)* Pene, P. (no affil) and B. Dipp. *Gazz Med France* 77(22):4798-4806, 1970.

9282 SURGERY FOR HYDATID CYSTS OF THE LIVER: CONTRIBUTION OF SCINTOGRAPHY IN THE STUDY OF DELAYED RESULTS. *(Fr.)* Kourias, B. (Ther. Clin. U. Athens, Greece), H. Gyftaki and P. Peveretos. *J Chir* 99(5-6):493-502, 1970.

9283 THE INFLUENCE OF COCCIDIA-INFECTION ON CARBOHYDRATES AND RIBONUCLEOTIDES IN THE LIVER OF CHICKENS. *(Ger.)* Stoll, U. (Med. Coll. Hannover, Germany), K. Enigk and A, Dey-Hazra. *Z Parasit* 34(4):356-361, 1970.

9284 INTESTINAL PARASITES AND NUTRITIONAL STATUS: III. REINFECTION OF CHILDREN BY ASCARIS AFTER DRUG TREATMENT—A PRELIMINARY REPORT. *(E.)* Lease, E. J. (Sch. Pharm., U. South Carolina, Charleston). *J South Carolina Med Ass* 66(10):359-3 1970.

9285 INTESTINAL PARASITES IN SOUTH CAROLINA. *(E.)* DiSalvo, A. F. (South Carolina St. Board Hlth., Columbia) and J. Melonas. *J South Carolina Med Ass* 66(10):355-358, 1970.

9286 THE CLINICAL FEATURES OF *E. HISTOLYTICA* INFECTION IN EUROPEANS AND AFRICANS IN RHODESIA. *(E.)* Gelfand, M. (Dept. Med., U. Coll. Rhodesia). *Cent Afr J Med* 16(8):180-184, 1970.

9287 SPURIOUS PARASITES RECOVERED FROM STOOLS AND URINES IN RHODESIA. *(E.)* Goldsmid, J. M. (Dept. Med. Microbiol., U. Coll. Rhodesia). *Cent Afr J Med* 16(8):173-178, 1970.

9288 EXPERIMENTS ON THE REPRODUCTION OF *NIPPOSTRONGYLUS BRASILIENSIS* IN THE RAT INTESTINE. *(E.)* Phillipson, R. F. (May Baker Res. La Essex, England). *Parasitology* 61(2):317-322, 1970.

9289 CHANGES IN THE CHEMICAL COMPOSITION OF *HYMENOLEPIS DIMINUTA* (CESTODA: CYCLOPHYLLIDEA) DURING PREPATENT DEVELOPMENT WITHIN THE RAT INTESTINE. *(E.)* Mettrick, D. F. (Dept. Zool., U. Toronto, Ontario, Canada) and C. E. Cannon. *Parasitology* 61(2):229-243, 1970.

9290 VALUE OF THE INDIRECT IMMUNOFLUORESCENCE REACTION IN THE DIAGNOSIS AND SURVEILLAN OF AMEBIC HEPATITIS: ONE CASE. *(Fr.)* Vernes, A. (C.H.U. Lille, France), J. C. Paris, J. Becqwort, A. Capron and J. Paris. *Arch Franc Mal Appar Dig* 59(7-8):475-480, 1970.

9291 A CASE OF CHYLURIA OCCURRING AS A RESULT OF FILARIASIS: THE VALUE OF LYMPHOGRAPH *(Fr.)* Rousseau, J. (C.H.U. Limoges, France), G.

Viollet, J. P. Dupuy, A. Picot, B. Comte and J. P. Olivier. *Ann Radiol* 13(5-6):427-434, 1970.

- o P:Morph (8539)
- o Diagproc (8758)
- o D:Stomduo (8840)(8845)

9292 EPIDEMIOLOGY OF *TAENIARHYNCHUS SAGINATUS* IN KARL MARX CITY. *(Ger.)* Muller, K. H. (Martin Luther U., Halle, Germany). *Deutsch Gesundh* 25(33):1563-1569, 1970.

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE

Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON

Cancer, Polyps, Radiological Detection (0188)*

RECTUM

Cancer, Polyps, Precancerous (0188)*

CANCER

Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS

Radiology, Cancer, Large Intestine (0188)*

umbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

ARON, C.
8733
BABEI, L.
8676
BDRACHMANOV, Z.N.
8791*
BRAMS, G.D.
8702
BRIC, J.
9090
CAMPA, A.
8749
CKERMANN, F.
8614*
DAMO, F.
9267
DAMSON, R.H.
8546
DEZATI, L.
9046
DLE, F.
8918
FFOLTER, M.
8817
GARWAL, B.L.
8744
GHEMO, G.
8535
GRESTI, A.
8773
HMED, Y.
9077
ISSAOUI, A.
8893
IUTI, F.
9139
KAMA, K.
8695*
KESON, A.
8541
LAGILLE, D.
9038*
LARY, R.
8770
LBERT, H.
8859
LBERT, O.
9280
LCINDOR, L.G.
8615*
LEXANDRE, G.P.J.
9073
LLEN, W.D.
8545, 8687*
MORUP, E.
8880*, 8944

NDERS, A.
8849
NDREADIS, P.
9255
NONYMOUS
9122
NTANI, J.
9260*
NTIA, A.U.
9272
NTOINE, J.
9249

AOKI, K.
8910
APOSTOLOFF, E.
8844
ARCHAMBAULT, A.
8713
ARDITO, G.
9276
AREND, P.
8991, 8995
ARENDT, R.
9099, 9136
ARIYOSHI, J.
8711*
ARMSTRONG, C.D.
8834
ARMSTRONG, W.MCD.
8553*
ARNOUS, J.
8952
ARONSEN, K.F.
8676*
ARPIN, M.
8651
ARTIGNAN, J.
8792
ARULLANI, P.
8772
ARZUL, C.
9211
ASADA, S.
9217
ASBURY, G.F.
9209
ASTALDI, G.
8572
AUDEBAUD, G.
9274, 9275
AUGUSTI, A.
8875
AUROUSSEAU, M.
9280
AXELRAD, A.D.
8559*

AYAD, S.R.
8643
AYHULM, K.
8944
AZNAR-RAMOS, R.
8514*, 8515*
BACCI, G.
9080
BACCINO, F.M.
8518
BACOLLA, D.
8755
BADEA, G.
9071
BAHR, G.F.
8505*
BALASEGARAM, M.
9079
BALAIRE, J.
9246
BALAZS, T.
8908
BALCAR, V.
8992

BALDET, P.
9088
BALI, J.P.
9086
BALMES, M.
9086
BALMUCHANOV, S.B.
8791*
BALSLEV, I.
8971
BANBA, M.
8881
BANDELIER, M.
9263
BANI, G.
9054
BANWELL, J.G.
8928*, 9201*
BARBASON, H.R.
8652
BARBIER, J.P.
9061
BARBOSO, G.
9007
BARON, P.
8668
BARREDO, C.
9092
BARROWMAN, J.A.
8605
BARRY, E.J.
8671

BARSCHNEIDER, M.
8863
BASKERVILLE, L.
9077
BASSETTI, D.
9127
BAUER, U.
8847
BAUGH, C.M.
8540
BAUJAT, J.P.
9169
BAULIEUX, J.
9071, 9072
BAUM, S.
8883
BAUMGARTNER, R.
8959
BAUTISTA-O'FARRILL, J.
8515*
BAYINDIR, S.
8746, 9076
BAZILLIO, R.
9274, 9275
BEAU, A.
8954
BEAUJEAN, M.
9013
BEASLEY, J.
9140
BEAZLEY, J.M.
8708*
BECAUD, J.P.
9245
BECK, C.
8751

BECK, G.
8849

BECKER, J.
8748

BECKER, V.
9025, 9036

BECQWORT, J.
9290

BEDUHN, D.
8850

BEHER, M.E.
8610*

BEHER, W.I.
8610*

BELL, T.
9259*

BELLIER, M.
9220

BENACCHIO, I.
8590

BENEVENTANO, T.C.
8828*

BENNET, J.
8907

BERARD, P.
9071, 9072

BERAUD, C.
8806

BERG, G.
8691

BERG, N.O.
8929*

BERGMANN, H.
9125

BERGEMANN, W.
8861

BERGOZ, R.
8930

BERKOVITS, L.
9186

BERLINSKI, M.
9014, 9177

BERNACKI, R.J.
8662

BERNDT, W.
8557*

BERNIER, G.M.
8688*

BERNSTEIN, L.H.
8938

BERRETI, C.R.
8729

BERTASIUS, J.
8610*

BERTILINI, A.
8812

BERTONI, F.
8854, 9056, 9197

BERTRAND, J.
8957

BESANCON, F.
9192

BESANCON, P.
8571

BESSONE, A.
8922

BESUCH, M.
8724

BEZON, A.
9263

BHAI, I.
8664

BHALLA, K.P.
8744

BIANCHI, F.B.
9080

BIANCHI, L.
9057

BIERZWINSKY, G.
8514*

BILLIERES, M.
8893

BINKELMANN, L.
9098

BIRCHER, J.
9164

BISMUTH, V.
8949

BLAKE, D.E.
8612*

BLAKEMORE, W.S.
8883

BLANKART, R.
9164

BLANQUET, P.
8751

BLATZAS, G.
9255

BLERY, M.
8949

BLIDARU, P.
9033

BOBBIO, P.
9007

BOCK, K.W.
8661

BODART, N.
8954

BODE, C.
8602, 8633*, 9113

BOELCKE, G.
9108

BOGGIANO, C.A.
9105

BOHLER, I.
9247

BOHLMANN, H.G.
9205

BOHM, R.
8536

BOITNOFF, J.K.
8523

BOIVIN, P.
8650

BOIX-OCHOA, J.
8978

BOKELMANN, D.
9035

BONDONNY, J.M.
8950

BONNET, J.L.
9032

BONNEVILLE, J.F.
8735

BORDALO, O.
8768

BORDE, J.
8793, 8810

BORDI, C.
9007

BOREL, G.A.
8562, 9160

BORGER, G.
9199

BOSCHET, P.
8996

BOSELLI, G.
9083

BOSMANN, H.R.
8662

BOTELLA, R.
8996

BOULARD, M.
8675

BOUCHEROT, J.
8650

BOUDRY, J.F.
8697

BOULAY, J.
8996

BOUREL, M.
8519

BOURREILLE, J.
8876, 9089

BOUSQUET, W.F.
8612*

BOUTELIER, P.
9014, 9222

BOWAN, I.D.
8542

BOYES, D.A.
9200*

BRAIZEWA, N.N.
8736

BRAUNS, M.T.
8724

BRESNICK, E.
8658

BREUER, H.
8532

BRICAIRE, H.
9075

BRIGHAM, K.L.
8928*, 9201

BRIGHENTI, L.
8666

BRITTINGER, G.
9050

BRKIC, B.
8641

BROCKERHOFF, H.
8504*

BROOKS, P.I.
8865

BRUCE, J.
8987*, 8988

BRUCKE, P.
8705*

BRUERA, F.
9006

RUHL, W.
9144
RUMPT, L.
9277
RUMPT, V.
9274, 9275
RUNNER, H.
8827*
RUNO, F.
9141
RUNO, S.
8710*
RYAN, G.T.
8829*
RYON, F.A.
9131
UCHER, H.
9164
UCHER, N.L.R.
8620*
UCHIN, R.
8926
UCHS, S.
8529
UCHTELA, K.
8566
UMBIC, S.
8802
UREAU, O.
9130
URGMANN, W.
9102
URREL, N.
8983
URNS, L.C.
8627*
USSMAN, J.F.
8945
USUIOC, A.
8676
UTTNER, W.
8839
UTTURINI, U.
9007
AGINI, P.
8961
AIRELLA, M.
9163
ALDARELLI, G.F.
9027
ALDERA, R.
8939
ALL, J.B.
8546
ALLAHAN, J.W.
9043*
ALO, S.
8775
ALVEZ, F.
9274
AMENITTA, M.
9183
AMERON, A.J.
8573*
ANEPA, M.
8937
ANIATO, A.
8665
CANIGIANI, G.
8909, 8948
CANNON, C.E.
9289
CAPDEVILLE, R.
8907
CAPELLI, A.
8854, 9056
CAPITAINE, Y.
9020, 9167, 9214
CAPRON, A.
9290
CARAYON, A.
9266
CARAYON, P.
9277
CARBONNELLE, B.
9245
CARD, W.I.
8987*, 8988*
CARDINES, R.
9259*
CAREY, E.M.
8609*
CARLES, J.F.
8996
CAROLI, J.
8615*, 8924, 9010
CARR, M.L.
8623*
CARRIE, A.L.
9279
CARRIE, J.
9278, 9279
CARTER, E.A.
9095
CASALI, A.M.
9080
CASANOVA, S.
8771
CASASA, J.M.
8978
CASAZZA, K.K.
8610*
CASCIO, G.
9141
CASIDA, J.E.
8647
CASTEL, Y.
9213
CASTELFRANCHI, P.L.
8870
CASTELLANI, A.
9044
CATSARAS, M.
9229
CATTANOE GODIO, R.
8790
CAVELLI, G.
9080
CELLE, G.
8937, 8994
CELLINI, N.
8757
CEMLING, L.
8581*
CENEVIDA, R.
8870
CERF, M.
8933
CETRULLO, C.
8801, 8813
CEULEMANS, G.
8951, 8955
CHAN, A.P.
9193
CHANG, J.P.
8684
CHAN YIP, B.S.S.
8717
CHAPUIS, Y.
8733, 9087
CHAPUT, M.C.
8563
CHARLES, J.
8737
CHAVY, A.
9011
CHERNOZEMSKI, I.N.
8637*
CHEVREL, B.
9070, 9074
CHMELIK, V.
8931
CHOUBRAC, P.
9228
CHRISTENSEN, K.M.
8969
CHRISTIANSEN, J.
9215
CHRISTOFFERSEN, P.
9042*
CHRISTOFOROV, B.
8679
CHVOJKA, J.
8765
CIARLA, O.
9065, 9116, 9118,
9119
CICCONE, G.
9174
CIECIURA, L.
8851
CINQUE, G.
8773
CIRAVEGNA, G.
8985
CIVARDI, F.
8786
CIXOUS, P.
9091
CLARE, D.E.
9140
CLARKE, A.
8879*
CLASSEN, M.
8581*, 8990
CLAUBERG, G.
9111, 9112
CLEMENCON, G.
8891
CLEMENT, D.
8956
CLEROU, R.P.
9261*
CLIFTON, J.A.
9129

CLOT, J.P.
9086, 9177
COHEN, S.M.
8829*
COHEN, W.N.
8941*
COHN, I., JR.
8837
COHN, P.
8977
COLCOCK, B.P.
8975
COLES, J.C.G.
9184
COLIN, A.
9062
COLLIN, F.P.
9233
COLVER, H.D.
9107
COMTE, B.
9291
CONDORSO, R.
8912
CONN, H.O.
9153*
CONRAD, M.E.
8688*
CONSTANTINESCU, M.
9183
COPPI, R.
9163
CORDEL, J.C.
9131
CORINALDESI, A.
8789
CORINALDESI, R.
8771
CORNET, A.
9277
CORNU, P.
9228
CORREARD, R.P.
9246
COSCELLI, C.
9007
COSTA, M.
9139
COUTURIER, D.
8578
CRAIG, J.M.
9216
CRESPI, C.
8856, 8889
CRESPIN, B.
9075
CRET, R.
9071, 9072
CREUTZFELDT, W.
9015*
CRISLER, C.
8898
CRISTOFOLINI, M.P.
9046
CROCELLA, A.
8710*
CROIZAT, P.
9131
CRUS, R.C.
8750
CROSSLEY, G.
8704*
CUNSOLO, A.
8878
CURCHOD, B.
9021
CURRAN, P.F.
8549*
CURRELI, A.
9267
CURTIUS, F.
8997
CZECH, W.
8909
DAHLQVIST, A.
8929*
DAINKO, E.A.
8974
DAKSHIMAMURTI, K.
8663
DALL'ORSO, F.
8794
DALMONTE, P.R.
8878, 9145
DALMONTE, R.
9056
D'AMOURS, C.
8815
D'ANGELO, G.
9066
DANIELI, G.
9145
DANNACKER, D.
8685*
DANSE, E.
9090
D'ANTONIO, G.
9142
DARBARI, D.M.
8713
D'ARCANGELO, E.
9163
DARDANONI, L.
9138, 9141
DARLE, N.
8745
DARNIS, F.
9049
DASGUPTA, M.
9128
DAUGHADAY, W.H.
9153*
DAUM, R.
8821, 8972
DAVENPORT, H.W.
8556*
DAVID, H.
8844
DAVID, J.S.R.
8503*
DAVIDSON, A.J.
8748
DAVIES, J.A.
8835
DAVIS, E.
8699
DAVIS, J.R.
9271
DAWSON, J.M.
8902
DEBERTRAND, PH.
9069
DEBEUGNY, P.
8979
DEBOT, P.
8715
DEBRAY, C.
8578, 8933
DEBRECZENI, S.
8785
DE CASSAN, R.
9108
DEFFRENNE, P.
8806
DE GROOTE, J.
9157
DEICHER, H.
9101
DE KRUYFF, R.
8646
DE LADONCHAMPS, M.
8919
DE LAGAUSIE, P.
8894
DELAHUNTY, T.J.
8606*
DE LAJARTE, A.Y.
8792
DEL FAVERO, E.
8838
DEL NINNO, E.
8611*
DELPORTE, J.P.
8567
DELZANI, M.U.
8984
DE MARZO, V.
8892
DEMLING, L.
8990
DENEGRI, V.
8775
DENK, H.
9152*
DENTAN, T.
8733, 9062, 906
9176
DE PAILLERETS, F.
9279
DE PIJPER, A.M.
8513*
DERAEDT, R.
8679
DE RAEYMAEKER, L.
8925
DE ROSA, M.
8773
DE ROSSI, G.
8757
DE RYCKE, P.H.
9268

DESCHAMPS, P.
8926

DESCHENES, J.
8592
DESOWITZ, R.S.
9259*
DESPLACE, A.
9062
DEUTSCH, E.
9152*
DEY-HAZRA, A.
9283
DEYHLE, P.
8581*, 8595
DE ZALENSKI, C.
8541
DHEDIN, G.
8579
DIETER, G.
8604
DIETSCH, M.R.
8776
DI GENOVA, L.
9188
DILS, R.
8609*
DIMMLING, T.
9236
DINKEL, L.
9189, 9190
DINIER, H.
9253
DIOGUARDI, N.
8611*, 9146
DIPP, R.
9281
DI SALVO, A.F.
9285
DISERTORI, M.
9144
DITTRICH, H.
9126
DITTRICH, J.K.
8728
DJETCHA, T.
9280
DLOUHY, W.
8547
DOBBINS, W.O.
8508*
DODERO, M.
8937, 8994
DODERO, P.
8803, 8814
DOHNALEK, J.
8784, 9040*
DOI, Y.
8727
DOLDI, S.B.
8892
DOLETSKY, S.Y.
8890
OLLE, W.
8886
OMART-OUDEA, M.C.
9039*
OMINI, R.
9055
ONAHUE, J.M.
8624*
DOST, K.
8848
DOUTRE, L.P.
8751
DREXLER, K.
8566
DREZE, C.
9223
DRUBE, H.C.
8940*
DUBOIS, F.
8907, 9032
DUBOULOZ, F.
8868
DUBOUSSET, J.
8826
DUBRISAY, J.
9061, 9277
DUCASSOU, D.
8751
DUCHARME, J.C.
9233
DUCIER, J.
8933
DUCLOUX, M.
9266
DUCLUZEAU, R.
9220
DUHAMEL, R.C.
8548*
DUPAS, J.L.
9090
DUPUY, J.P.
9291
DURET, P.
9264
DUTERTE, P.
8895
EBEL, K.D.
8825
EDELMANN, G.
9014
EDER, H.
9182
EDLUND, Y.
9018
EFRON, G.
8938
EGGER, G.
8855
EHLERT, C.P.
8827*
EHRENGRUBER, H.
8738
EICHELTER, F.
9026
ELBERS, C.
8927
ELBERS, P.F.
8511*
ELFORD, H.L.
8636*
ELKE, M.
8706*
ELLENRIEDER, M.
9253
ELLIOTT, G.B.
8969
ELLIOTT, K.A.
8969
ELLISON, E.H.
9219
ELSTER, K.
9002*
ENGELHOLM, L.
8734, 8926
ENGLER, W.
8505*
ENGLERT, E., JR.
8554*
ENGLHARDT, A.
8724
ENIGK, K.
9283
ERLE, G.
9044
ERTURK, E.
8829*
ESCAT, J.
9008
ESCOLAN, J.
9212
ESPOSITO, G.
9204
EUGSTER, A.K.
9208
EVANS, A.S.
9093*
EVANS, W.E.
9219
EVERSOLE, S.L.
8834
EWERS, H.R.
9050
EYSSELT, M.
8784, 9040*
FABERI, M.
9165
FABIANI, F.
9123
FACCINI, M.
8804
FAENZA, A.
8878
FAGGIOLI, F.
8789, 8843
FAGIOLO, U.
9044, 9117, 9133
FAHRLANDER, H.
8934
FALCONER, C.W.A.
8987*
FALCONER, M.B.
8988*
FARAH, A.
8752
FARINI, R.
9044, 9117, 9133
FARRIAUX, J.P.
9202
FASEL, J.
8693, 8797
FAVRE, M.
8996
FEDERICO, G.
9116, 9118, 9119

FEDSON, D.S.
8928*, 9201*
FEHR, H.
9015*
FEHRINGER, A.
8566
FEISE, G.
9108
FEKETE, F.
9186
FELBER, J.P.
8693
FELDMANN, G.
8650, 9039*
FELEKI, V.
9078
FENGER, C.
8944
FENTON, J.
9069
FENYOHAZI, I.
8537
FERAUDI, M.
8533
FERGUSON, C.C.
8809
FERRI, S.
8544
FIASCHI, E.
9117, 9133
FIASSE, R.
8925
FICHERA, G.
8875
FIGARELLA, C.
8750
FIGARELLA, J.
8868
FILIPPAZZO, G.
9138, 9141
FILKINS, J.P.
8629*
FILUS, A.M.
8610*
FINEAN, J.B.
8502*
FIORDIGIGLIO, G.
9037
FIORE, E.
8878
FISCHER, R.
8782, 9053
FLAKS, B.
8639*
FOLIOT, A.
8679
FONDIMARE, A.
8876
FONTAINE, G.
9202
FORCAIN, M.
9263
FOREST, M.
9075
FORGACS, P.
9280
FORMICA, E.
9064
FORSANDER, O.A.
8660
FORSTNER, G.G.
8686*
FOUDARD, C.
8996
FRANCIOSI, A.
8749
FRANK, P.
9035
FRANKEN, F.H.
8673, 8724
FREESE, M.
8636*
FREI, J.
8631*
FREYER, R.
8702
FREYRIA, J.
8895
FRIC, P.
8931
FRIEBE, U.
8604
FRIEDMAN, M.A.
8626*
FRIGERIO, G.
9127
FRITZLAR, G.
8886
FRIZZELL, R.A.
8550*
FROHLICH, J.
8509*
FROMMHOLD, W.
8725
FROTZ, H.
8594
FUCHS, W.A.
9164
FUCIK, M.
8593
FUJIKAKE, M.
8932
FUKAZAWA, T.
8618*
FUMAGALLI, L.
8677
FURMAN, V.N.
8787
FURUKAWA, H.
8711*
FUSCO, A.
9005
GAILLARD, J.
8805
GAJDOS, A.
8628*
GAJDOS-TOROK, M.
8628*
GALEONE, M.
8875, 9083
GALIBERT, A.M.
9086
GALLINA, S.
8811
GALLOT, D.
9092
GAMBARI, P.P.
9044
GANDER, M.
8709*
GANDINI, S.
8804
GANEVAL, D.
9168
GARBAY, M.
8919
GARBUTT, J.T.
8896*
GARNIER, J.
9265
GASBARRINI, G.
8771, 8843
GATEAU, P.
8924
GAUDICHE, O.
8826
GAUTIER, M.
9038*
GAUTIER-BENOIT, C.
9227
GAUX, J.C.
8949
GAVA, L.
8838
GAYLOR, J.L.
8525, 8649, 8654
GEHRMANN, G.
8927
GEISLER, P.
9240
GEISSLER, H.
8769
GELFAND, M.
9286
GELFAND, M.D.
8730
GEMSENJAGER, E.
8943, 8965
GEORGI, M.
8707*
GEORGI, T.
8785
GEORGIEVA, R.
8528
GERARDI, R.
8680
GERLACH, K.
8921*
GERMENA, C.
8922
GEYER, G.
8517, 8521
GHADIRIAN, E.
9262
GHEORGHIU, T.
8594
GHOSE, M.K.
8977
GHOSH, B.
8899
GIANNOTTI, P.
9006, 9027
GILLET, B.
9084

ILLET, M.
8906, 8914, 9028
ILLOT, F.
9130
IRARD, M.
8874
IRARD, M.M.
9173
IROULLE, M.
9090
IROUX, J.J.
8675
IRTANNER, R.E.
8934
ISSELBRECHT, H.
8735, 8956
ITLIN, N.
9158
LEICHMANN, E.
9101
MUNDER, U.
8739
NUDI, A.
9007
OEBELL, H.
8602, 8633*, 8886,
9113
OETZE, T.
8601
OFFRINI, P.
9007
OIFFON, B.
8983
OLDBLATT, P.J.
8626*
OLDNER, A.M.
8549*
OLDSMID, J.M.
9287
OMES DA COSTA, J.A.
9109
OMES DA COSTA, S.F.
9109
OMEZ IGLESIAS, S.
8901
ONGORA, R.
9069
ONZALEZ-ANGULO, A.
8514*, 8515*
ORDON, B.A.
9078
ORIN, J.P.
9085
OTTSCHALK, A.
8747
OUIN, B.
8933
OUIN, F.
8868
OULON, M.
9230
OURILLON, M.
9265
OUZI, J.L.
9008
RADY, G.F.
8548*
GRAM, T.E.
8546
GRANDMOTTET, P.
8735
GRANGE, G.
9265
GRANGER, R.
8675
GRASSI, G.
8818, 8833, 8958
GRENIER, J.F.
8906, 8914, 9028
GRETILLAT, P.A.
8709*
GRIFFATON, G.
8668
GRIFFITH, C.A.
8976
GRILLO, G.
8577
GRIMOUD, M.
8867, 9008
GRINBERG, L.N.
8674
GRISK, A.
8634*
GRIVEL, M.L.
9071
GROENEWOUD, E.T.
8622*
GROSBUIS, S.
9230
GROSSMAN, M.I.
8597*, 8599*, 8619*
GROUSSARD, O.
9039*
GROZINGER, K.H.
9035
GRUNFELD, J.P.
9168
GUARINO, A.M.
8546
GUBLER, J.P.
8810, 8826
GUDER, W.
8509*
GUEGUEN, L.
8571
GUENEAU, G.
8694
GUENET, J.L.
8694
GUGLER, R.
8532
GUILLARD, J.M.
9091
GUILLEMOT, R.
9085
GUILLOUZO, A.
8519
GUMRICH, H.
8862
GURRERI, G.
8985
GUSTAFSSON, J.A.
8613*
GUTSTEIN, S.
8938
GUTMANN, M.R.
8671
GUTTMAN, F.M.
9233
GYFTAKI, H.
9282
HAAS, P.
9100
HABERER, J.P.
9084
HACKL, H.
8566
HADJIKHANI, H.
8693
HAERTWIG, B.
8724
HAGELSKAMP, W.
8673
HAGUENAUER, J.P.
8805
HAJIRO, K.
8711*
HAKIM, J.
8650
HALBHUBER, K.J.
8521
HALPERN, A.
9164
HALTER, F.
8709*, 8855, 9252
HAMMOU, S.
8893
HANNONEN, P.
8655
HANSEN, H.J.M.
8609*
HARA, M.
9217
HARADA, T.
8589
HARDY, J.D.
8903
HARMEAU, H.
9001
HARPER, P.V.
8747
HARTROFT, W.S.
9110
HASSE, W.
8847
HASUMURA, Y.
8638*
HATHAWAY, J.A.
8729
HAUSER, J.
9179
HAUTEFEUILLE, P.
8953
HAUZEUR, F.
9136
HAWK, W.A.
8999
HAXHE, J.J.
9073
HAZLEWOOD, R.L.
8559*
HECHT, Y.
8924, 8953

HECKER, W.C.
8821, 8972
HEGER, N.
8746, 9076
HEIM, W.
9242
HEISS, W.
8821
HEILMANN, P.
8714
HELENON, C.
8996
HELMBOLD, A.F.W.
8864
HEMSENDORF, K.
9206
HENIGES, D.J.
8701
HENISCHEL, E.
9126
HERCZEG, B.
8561
HERMANEK, P.
8947
HERNADEZ, C.
8953
HERUFEK, B.
9040*
HERZOG, B.
9254
HESCHL, R.
8766, 8767
HINSSEN, K.
8724
HIRT, O.
8557*
HISSEN, W.
8972
HITOS NATERA, E.
8869
HIVET, M.
9001, 9275
HOFFBRAND, A.V.
8551*
HOGAN, K.
8657
HOHENFELLNER, R.
8942
HOHLFELD, R.
8682
HOLDER, E.
8830*
HOLLDORF, A.W.
8604
HOLLENDER, L.F.
8915, 8917, 9028
HOLT, J.M.
8835
HOLTTA, E.
8655
HOLTZMAN, J.L.
8623*
HONDA, G.
8530, 8531
HONG, H.C.
8663
HORVATH, J.
8908
HOUCKE, M.
9227
HO YUEN, B.
9200*
HSU, H.F.
9271
HSU, S.Y.L.
9271
HUAUX, J.P.
8925
HUBIN, C.
9013
HUBNER, L.
8640
HUGUET, C.
9092
HUGUIER, M.
8894
HULSMANN, W.C.
8513*
HULTIN, I.
8512*
HUNTER, D.T.
8729
HUPE, K.
8602
HUREAU, J.
8799
HUSQUINET, W.
9013
HYNIE, I.
8692
IASONNI, V.
9197
IDEO, G.
8611*
IEMHOFF, W.G.J.
8513*
IGARASHI, M.
8526
IGNATIUS, J.A.
8834
IIDA, H.
9216, 9218
IKEGAMI, F.
8638*
IMBERT, X.
9274
INAGAKI, H.
8932
INFANTE, R.
8615*
INGELRANS, P.
8979
INOUE, K.
9216
IONESCU, D.
8871
IRVING, C.C.
8681
ISHIHARA, Y.
8575
ISSELBACHER, K.J.
9095
ITURRIAGA, H.
9154
IVEY, K.J.
9129
JABLONSKA, J.
8648
JACKSON, C.D.
8681
JACKSON, P.P.
8973
JACQUET, N.
9013
JAFFE, B.M.
8506*, 8582*
JALAN, K.N.
8987*, 8988*
JANNE, J.
8655
JANNUZZI, C.
9127
JAQUES, W.A.
8798
JASONNI, V.
9055
JEFCOATE, C.R.E.
8525
JEFFERSON, L.S.
8672
JENSEN, H.E.
8880*, 8971
JOCELYN, P.C.
8670
JODL, J.
8931
JOHN, H.D.
9052
JOHNSTON, J.M.
8503*
JOLLY, M.
9274, 9275
JONDORF, W.R.
8624*
JONES, R.S.
8619*
JORDAN, P.H.
8717
JOSKE, R.A.
9150*
JOST, A.
9032
JOYCE, B.K.
9208
JULIEN, C.
9010
JUNGERS, P.
9168
JUSKIEWENSKI, S.
8795
KADLECOVA, O.
9040*
KADOWAKI, M.
8632*
KADYROV, U.Z.
8603
KAMI, F.
8842
KALCHENKO, I.I.
8885
KALOUD, H.
9067
KAMIETH, H.
8760

KANAYAMA, R.
8638*
KANEKO, K.
8910
KANTER, I.E.
8986
KANTOR, E.
8576
KAPRAL, W.
9250
KARASAWA, N.
8726
KARASAWA, T.
9217
KARASHIMADA, T.
9218
KARPENKO, V.S.
9232
KASPER, M.
8564
KATO, R.
8630*
KATO, T.
8932
KATUNUMA, N.
8527
KATZ, R.
9120
KAWADA, T.
8910
KAZAKOV, V.N.
8787
KAZDALI, A.
8893
KEEL, H.J.
8774
KELL, H.M.
9251
KELLER, R.J.
8836
KELLERHALS, B.
8816
KELLETER, H.
8845
KELTNER, R.M.
8832
KERKHOVEN, P.
8855, 9252
KERNBAUM, S.
8568, 9230
KESAVA RAO, K.V.
8659
KESSLER, J.I.
8685*
KESSLER, M.
8596
KESTENS, P.J.
8925, 9073
KEYSER, E.
9108
KHILNANI, M.I.
8836
KIHARA, T.
8575
KINDLER, U.
8779
KINOHIRA, K.
8910
KIRIAKOU, K.
9255
KIRSNER, J.B.
8921*
KISSEL, F.
8712
KLEIN, H.J.
8594
KLEIN, U.
9053
KLEIN, U.E.
8940*
KLEINEKE, J.
8608*
KLEINKNECHT, D.
9168
KLIMKOVICH, I.G.
8890
KLINGE, O.
9103
KLUCK, H.
9151*
KLUG, W.
8981
KNETSCH, A.
8759
KNICK, B.
9068
KNOCHELMANN, R.
8861
KOCH, D.
8779
KOCH, G.
8946
KOCH, H.
8581*
KOEBERLE, J.
8675
KOENIG, H.
8756
KOEPPE, R.E.
8627*
KOLOMIYCHENKO, M.I.
9181
KOMARKOVA, O.
8935
KOMATSU, T.
9217
KOMIYAMA, S.
9217
KONIGSTEIN, M.
8566
KONO, H.
8633*, 9113
KORB, G.
9096
KOSTERS, J.
8769
KOTHE, R.
8859
KOURIAS, B.
9282
KOUTSOUKOS, A.
9169
KOZLOWSKA, R.
8585*
KRAFT, M.
8860
KRAMME, U.
9156
KRANZLER, J.K.
8747
KRASZNAI, A.
8576
KRATZSCH, K.H.
8839
KRAUS, M.
8741
KRENN, R.
8840
KRUMDIECK, C.L.
8540
KUGLER, S.
8783
KUHLMANN, N.
8893
KULLMAN, R.
8698
KUNIN, A.S.
8555*
KUPFER, K.
8855
KUSHCH, N.L.
8966
KUWERT, E.
9205
KYRIELEIS, C.
8860
LABBE, J.P.
9169
LABO, G.
8771
LACHERETZ, M.
8979
LACK, L.
8896*
LACROIX, L.
8790
LACZAY, A.
8718
LAGADEC, B.
9225
LAGEMANN, K.
9191
LAGHI, V.
9065
LAGRANGE, E.
9280
LAMMANN, H.
8598*
LAIGLE, J.L.
9091
LALOQUE, P.
9266
LAMASTRA, Z.
8775
LAMBERT-LE CLER, G.
9223
LAMBOTTE, L.
9073
LA MURA, L.
8577
LANDIN, R.M.
8534
LANDOIS, J.
8857

LAROCHE, C.
9075
LARRIEU, M.
8918
LASSERRE, J.
8950
LAURENCE, R.M.
9150*
LAWRENCE, A.L.
8559*
LAZORTHES, F.
9008
LEASE, E.J.
9284
LE CANUET, R.
8752
LECHNER, G.
8705*
LEEUWIN, R.S.
8622*
LE FUR, J.M.
9213
LEGER, L.
8732, 9031, 9062,
9063, 9085, 9176
LE GUILLY, Y.
8519
LE MAO-DONG
8675
LEINWEBER, R.
9104
LEITHAUSER, W.
9248
LELONG, M.
9038*
LEMAIGRE, G.
9062, 9063, 9085,
9176
LENOIR, P.
8519
LENRIOT, J.P.
8732, 9024, 9031
9085
LEO, F.
8853, 8962
LEONARD, P.
8879*
LESBROS, M.F.
9106
LESCUT, J.
8737
LETAC, R.
8950
LEVINSON, R.A.
8554*
LEVI-VALENSI, P.
9090
LEWICKI, I.
8839
LEWIS, E.A.
9272
LEY, H.
9187
LHERMINE, C.
9227
LIEBER, C.S.
9094
LIEBERMANN-HEFFERT, D.
8516
LIECHTY, R.D.
8941*
LIEDEL, K.
8536
LIEM, C.F.
9016
LIGHTNER, D.A.
8699
LILLEMEIER, F.
9050
LIMBRICK, A.R.
8502*
LINCHENKO, I.F.
9004
LINDBERG, T.
8929*
LINDER, M.M.
8877
LINKE, P.G.
8561
LINNEWEH, F.
8754
LINSS, W.
8517
LINTHE, H.
8596
LISBOA, B.P.
8613*
LISEWSKI, G.
8844
LISZKA-KOPEC, B.
8541
LIU, I.K.M.
9261*
LOCHER, J.T.
8706*
LOIZEAU, E.
9000
LOJDA, Z.
8931
LOMBARD, R.
9223
LOMBARDI, C.
9204
LONGHI, L.
8544
LONGMIRE, W.P., JR.
9185
LOPEZ-RODRIGUEZ, F.
8893
LORENTZ, K.
8777
LORIAT-JACOB, J.L.
8894
LO SARDO, S.
9139
LOTH, P.
8939
LOUBEAU, J.M.
9073
LOWY, R.
8668
LUDCKE, J.B.P.
8596
LUECK, J.D.
8616*
LUEZ, J.
9227
LUI, S.
9095
LUPIEN, P.J.
8644
LUST, G.L.
9271
LUTTICHAU, F.
9175
LYNEDJIAN, P.B.
8697
LYNEN, F.K.
8764
MAC KENZIE, D.A.
8970
MAGDALENA CASTINEIRA, C
8866
MAGNENAT, P.
8631*, 9160, 9167,
9214
MAIDA, H.
8910
MAIER, B.R.
8701
MAIER, J.
9002*
MAIER, K.P.
9132
MAINGUET, P.
8734, 8873; 8924
MAITROT, B.
9010
MALAGUTI, P.
8998
MALDAGUE, P.
9073
MANCINI, A.P.
9134
MANDIOLA, S.
9185
MANELLI, J.C.
8868
MANFREDI, D.
8852
MANNEL, G.
8601
MARCHAL, G.
9086
MARCHE, C.
8933, 9192
MARCHETTI, M.
8635*
MARES, P.
8593
MARGOLIS, S.
8523
MARQUEZ-MONTER, H.
8514*
MARTIN, E.
9032
MARTIN, G.B.
8644
MARTIN, J.M.
8555*
MARTINEK, K.
9040*

RTINELLI, G.
8801, 9197
RTINELLI, M.
9144
RTINEZ-MANAUTOU, J.
8514*, 8515*
RTINI, G.A.
8991, 9113
RTY, C.
9088
RZOTKO, D.
8536
SARONE, M.
8936
SSARI, N.
8786
SSE, R.
9213
SSIDDA, B.
9267
STRANGELO, U.
9194
THEWS, H.R.
8647
THIEU, G.
9069
TRAY, F.
8876, 9089
TSUMOTO, T.
8584*
TTEI, M.
8789
TTHEWS, J.L.
8555*
TSUBARA, T.
9244
TSUMURA, C.
9256, 9257, 9258
UERHOFER, K.F.
8820
URI, M.M.
8755
XWELL, N.G.
9115*
YSTON, P.D.
8605
ZAUD, R.
9274
ZZACUVA, D.
9055
CORMICK, W.F.
9059
GUIGAN, J.E.
8506*, 8582*
KAY, D.G.
8877
KENZIE, A.D.
9193
LACHLIN, A.D.
8970, 9184
MANUS, J.P.A.
8987*, 8988*
VAY, C.B.
8819
DDA, A.
9267
DEIROS, L.D.
8544

MEDGYES, A.
8537
MEGHAL, S.K.
8627*
MEHIA, A.
9273
MEITUS, M.L.
9210
MELCHIONDA, N.
8843
MELONAS, J.
9285
MENAGER, A.
9178
MENAGER, C.
9178
MERGNER, W.
9271
MERILLON, M.
9075
MERTENS, E.
8756
MERTZ, D.P.
8591
MESLIN, J.C.
8694
MESSMER, E.
8830*
METAYER, P.
8876, 9089
METTRICK, D.F.
9289
METZGER, L.E.
8672
MEYER, H.A.
9237
MEYER, J.H.
8597*, 8599*
MEYER ZUM BUSCHENFELDE, K.H.
9148
MEZZANO, A.
8803
MIALHE, C.
8656
MICARELLI, A.
9165
MICHAILOV, V.
8716
MICHETTI, P.
8937, 8994
MIEDERER, S.E.
8595
MIGLIO, F.
8771, 8843
MIGLIORINI, R.H.
9003*
MIGUEL DE VELASCO, J.E.
8869
MIKAT, B.
8861
MIKEL, U.
8505*
MIKHALCHUK, R.N.
8966
MIKI, Y.
9217
MILLER, G.
8709*

MILLER, L.L.
8616*
MILLER, R.F.
8941*
MILLER, W.L.
8649, 8654
MILLONIG, G.
9138
MIR PALLARDO, J.
8901
MISSEN, A.J.B.
8968

MISSMAHL, H.P.
9166
MITRA, R.C.
8928*, 9201*
MITROFANOFF, P.
8793
MITTMANN, W.
9124
MIYAKE, T.
8632*, 8711*, 8887
MIYATA, K.
8632*
MIYOSHI, A.
8727, 8887, 8888
MIZOULE, J.
8675
MIZUTANI, H.
9217
MOCHMANN, H.
8720, 8721, 8722,
8723
MODENA, J.L.P.
8870
MOGOS, M.
9183
MOHR, P.
8993
MOINE, D.
9266
MOIR, N.J.
8525
MOLAS, G.
9039*
MOLES, J.B.
8899
MOLLER, N.
8714
MONACO, M.
8912
MONANGE, C.
8956
MONCH, E.
8741
MONDAL, A.
8928*, 9201*
MONTERO, C.
9144
MONTI, M.
8797
MONTRONI, M.
9145
MOULTEN, F.L.
8620*
MOORE, E.W.
8548*

MORELLE, J.
9073
MORERE, P.
9089
MORIGA, M.
8887, 8888
MORIOKA, W.
8832
MORISAWA, T.
9203
MORISOT, P.
9092
MORITSUGU, T.
9217
MORITZ, K.U.
8634*
MOROSINI, S.
9007
MOROWITZ, D.A.
8921*
MORRIS, H.P.
8636*
MORRISEY, W.J.
8900
MORUZZI, G.
8635*
MOSCOWITZ, A.
8699
MOULE, Y.
8534
MOULLE, P.
8733
MOUNIER-KUHN, P.
8805
MOYSON, F.
8796
MUHE, E.
9155
MUKERJEE, A.B.
9128
MUKHERJEE, S.P.
8565
MULLER, K.H.
9292
MULLER, U.
8596
MULLER-WIEFEL, H.
9235
MULLER-WIELAND, K.
8557*
MUNOZ IBANEZ, M.
8901
MUNIENER, M.
8846
MURET, G.
8857
MUSABAEVA, L.I.
8791*
MUSSA, G.C.
8755
MUSSELMAN, D.L.
8553*
MUTING, D.
9053
MUTO, T.
8881
MYANI, N.B.
8570
NACCARATO, R.
9044, 9117, 9133
NADAL, C.
8520
NAEF, A.P.
8798
NAGAKUBO, I.
8507*
NAGANT DE DEUZCHAISNES, C.
8925
NAKAJIMA, H.
9060
NAKAO, C.
9217
NANCE, F.C.
8837
NANDA KUMAR, N.V.
8659
NANNELLI, U.
8710*
NADE, S.
8910
NAPOLITANO, D.
9204
NARCESSIAN, P.
8685*
NARDI, G.L.
9172
NATH, M.C.
8664
NATZSCHKA, K.
8782
NAVRATIL, H.
9086
NEGRET, J.P.
9221
NEGRI, L.
9195
NEGRI, S.
8786
NEGRONE, G.
9204
NEIMANN, N.
8954
NEMESCH, W.W.
8736
NEUHAUS, G.A.
9238
NEUMAIER, F.
8994
NEVALAINEN, T.J.
8543
NEWTON, W.T.
8506*, 8582*
NICOLAS, F.
8792
NIEDNER, R.
8995
NIELSEN, J.
8971
NISHIMURA, H.
8589
NISHIMURA, Y.
8910
NKWO, A.
8777
NOAKES, D.E.
8687*
NOMBALLAIS, G.
9130
NOMURA, K.
8910
NOMURA, Y.
8632*
NORDEN, A.
8929*
NORDEN, J.G.
8696*
NOWOTNY, K.
8859
NOWOTNY, P.
9099
NUSBAUM, M.
8883
NYLANDER, G.
8696*
OAKMAN, N.J.
8620*
OCKLITZ, H.W.
8720, 8721, 872
8723
O'CONNOR, P.J.
8643
ODIEVRE, M.
9038*
OESTREICH, R.
8517
OGATA, K.
8642
OGER, A.
9012
OHLNE, J.
9187
OHLSSON, E.G.
8696*
OHTA, A.
8575
OKOLICSANYI, L.
8631*
OKUDA, Y.
8589, 8727
OKUMURA, Y.
8638*
OLBERT, F.
8824
OLIVER, G.
9086
OLIVER, R.I.
8903
OLIVIER, J.P.
9291
OLSSON, R.
9161
OLTEANU, C.
9183
ONISHI, S.
8932
ONO, T.
9218
OOMEN, H.A.P.C.
9151*
OPOLON, P.
9092
ORAVEC, M.
8645

RBAN, F.
9013
RBAN, J.C.
9073
RSINI, L.
9139
RTONA, L.
9065, 9116, 9118,
9119
SHIMA, H.
8861
ANI, S.
8695*
TE, J.B.
9073
TENJANN, R.
8595
IO, P.
9101
IOLENGHI, C.
8665
NATANIAN, K.T.
9232
KARAGOZ, R.
8574
GES, A.
9088
GLIANI, G.
8801
GLIANO, F.
8758
GLIARO, L.
9138, 9141
GNIEZ, G.
9031
LMA, F.
8980
LMARI, V.
9007
LVOLGYI, L.
8718
NCALDI, G.
8666
NSU, D.
8563
OLAGGI, J.A.
8578
OLUCCI, G.
9134
OLUZI, P.
8772
PA, B.
9174
RAP, A.
9009, 9178
RC, R.
9062
RENTI, C.
8964
RIS, J.
8905, 9290
RIS, J.C.
9290
RROT, J.
9192
RVERY, F.
9245
SQUIE, M.
8795
PASSAMANI, E.
8636*
PATEL, J.C.
8807
PATZELT, C.
8509*
PAULINO, F.
8831
PAULUZZI, S.
9123
PEETERS, J.P.
8926
PENE, P.
9281
PENNISI, V.
8853, 8962
PENNOIT-DE COOMAN, E.
9268
PEQUIGNOT, E.
8920
PERACCHIA, A.
9007
PEREDA, T.
9154
PERRELLI, L.
9276
PERRENOUD, J.P.
8731
PERRIN, J.E.
8733
PETEL, B.
8795
PETER, M.Y.
9179
PETERS, G.
8697
PETERS, T.J.
8551*
PETERSON, H.C.
8900
PETERSON, S.C.
8549*
PETHER, J.V.S.
9140
PETIT, P.
8793, 8810
PETITE, J.P.
8679
PETRESCO, C.
9033
PETROVIC, S.
8641
PETRYKA, Z.J.
8699
PETZOLD, H.
8682
PEVERETOS, P.
9282
PFRIENDER, H.
9035
PHILLIPS, S.F.
8573*
PHILLIPSON, R.P.
9288
PIANCASTELLI, A.
9007
PICOT, A.
9291
PIERANGELI, A.
9080
PIERART, A.
9011
PIERCE, N.F.
8928*, 9201*
PIERON, R.
9032
PIET, R.
9011
PIHL, B.
8696*
PIHL, E.
8505*
PILLOT, J.
9245
PINELLO, V.
9138
PINO, M.E.
9154
PIPER, D.W.
8879*
PIPER, W.N.
8612*
PIPPI, L.
9105
PITRE, D.
8677
PIZZIGALLO, E.
9065, 9116, 9118,
9119
PLANCQ, J.M.
9013
PLAQUET, R.
9090
PLATT, D.
9104
PLESSIER, J.
9010
PLEWE, D.
8596
PLUCH, D.R.
8748
PLUCHL, E.
9047
PLUMEAU, R.
9279
PODDA, M.
8611*
POGGI, F.
9137
POIROT, J.P.
8895
POKIESER, H.
8705*
POLCYN, R.E.
8747
POLONOVSKI, J.
8615*
PONCELET, T.K.
9115*
POPANDOPULO, G.D.
9232
POPE, C.E., II
8808
PORTER, P.
8545, 8687*
POSSENTI, R.
8812, 8814

POTET, F.
9178
POTOCKY, V.
8992
POTVLIEGE, P.
8926
POUPON, R.
8519
POUYET, M.
9071, 9072
PRANDI, D.
8894
PRANDO, R.
9046
PRAUER, M.
8963
PRAZAK, J.
8593
PREISIG, R.
9164
PRELLWITZ, W.
8780
PRESCOTT, R.J.
8987*, 8988*
PREVOST, A.G.
9030
PREVOST, Y.
9091
PREVOT, J.
8954
PREVOTAT, N.
8735
PRIEBUS, I.
9135
PRINCE, A.M.
9114*
PRINGOT, J.
8734
PRIVETT, O.S.
8618*
PROCACCIA, S.
8786
PROVOST, J.
9280
PROYE, C.
8916
PUGH, D.
8690*
PUGNO, V.
9276
PUSCH, G.
8948
QADRI, M.U.N.
8558*
RADLOFF, H.
8913
RAIBAUD, P.
9220
RAILEANU, L.
8676
RAINA, A.
8655
RAISONNIER, A.
8615*
RAITHEL, D.
9155
RAJVANSHI, V.S.
8744

RAMCHAND, S.
9077
RANDRIAMANANA, C.
8920
RANKE, E.
8849
RAO, G.S.
8532
RAPIN, M.
9230
RAUBER, G.
8712
RAUTUREAU, J.
9009, 9178
REBEYROTTE, P.
9169
REBOUD, A.M.
8651
REBOUD, J.P.
8651
REDDEMANN, H.
9135
REDLICH, F.H.
8719
REDMAN, H.C.
8703*, 8986
REHNER, M.
8785
REIHER, P.
9048
REIKOWSKI, H.
9053
REINSTEIN, H.
9207
REITZIG, P.
8844
REITZUG, H.C.
8553*
RENAUD, F.
8893
RENE, A.A.
9093*
RENAT, A.
8571
RETTORI, R.
9029
REUTER, S.B.
8986
REUTER, S.R.
8703*
REVOL, L.
9131
REZZONICO, A.
9082
RHEAULT, M.J.
8592
RI, K.
8910
RICATTE, J.P.
8735
RICCI, G.
8800
RICHARDSON, B.D.
9270
RIGHETTI, A.
8930
RIGHINI, A.
9195

RIMONDINI, C.
8813
RITA, G.A.
8518
RIZZO, A.
8803, 9044
RIZZO, F.
8788
RIZZO, V.
8794, 8803, 8812
RIZZONI, G.
8572
ROBERT, L.
8788
ROBERTS, K.B.
8657
ROBERTSON, R.D.
9180
ROBINSON, J.O.
8882
ROCHE, J.
9213
ROCH-RAMEL, F.
8697
ROGGENBACH, H.J.
9050
ROHNER, A.
9022
ROLLINS, E.L.
8508*
RONZONI, P.
8535
ROSA, H.
9159
ROSANELLI, K.
9067
ROSCH, W.
8742, 8947
ROSEAU, E.
9176
ROSELLI, A.
8831
ROSENBERG, E.
9124
ROSENFELD, J.
8871
ROSITO, P.
9134
ROSKY, L.P.
8989
ROSLER, H.
9164
ROSSETTI, M.
8817, 8822
ROSSIER, A.
8939
ROSZKOWSKA-GIRYN, I.
8851
ROTH, H.
8858
ROTHFIELD, N.
8748
ROTONDI, M.
8960
ROUCAYROL, J.C.
8732
ROUSSEAU, J.
9069, 9291

ROUX, M.
8752, 8799
ROWINSKI, J.
8510*, 8547
ROZA, O.
8977
ROZE, C.
8578
ROZSIVALOVA, V.
8935
RUBIN, E.
8653
RUBINSTEIN, D.
8606*
RUCKEBUSCH, Y.
9071
RUEDI, B.
9160
RUIGROK, T.J.
8511*
RUIZ, G.
9194
RUPIEREZ POLO, S.
8869
RUSSO, G.
9138
RYNICKI, P.V.
9021
SACQUET, E.
8694
SAILER, S.
8767
SAINT-DIZIER
8806
SAINT-SUPERY, G.
8950
SAKAI, T.
8881
SALATI, R.
8607*, 9081
SALATINO, A.
9066
SALEM, E.
8750
SALTIEL, H.
9075
SALVIOLI, G.F.
8607*, 9081
SAMBIN, M.S.
9226
SAMPLINER, J.E.
8977
SAMPSON, H.W.
8555*
SANADA, Y.
8527
SANATI, A.
9262
SANDLER, E.
8823
SANTAMARIA GARCIA, J.L.
8869
SANTAMBROGIO, C.
8786
SAPUTO, V.
8778
SARLES, H.
8750, 9020, 9023
SARNITSKY, I.P.
8885
SASAKI, T.
8522
SASAYAMA, T.
8589
SAUGER, F.
8876
SAURY, R.
9008
SAUTIER, C.
8920
SAVA, G.
8906, 8914, 8915, 9028
SAVARY, M.
8797, 8798
SAVOYE, B.
8770
SAWICKI, W.
8510*, 8547
SBRICCOLI, A.
8923, 9175
SCALISE, G.
9105
SCHADE, S.G.
8688*
SCHAFER, P.K.
8861
SCHANTZ, P.M.
9261*
SCHARF, J.M.
8536
SCHAUB, J.
8753
SCHEDL, H.P.
8560*
SCHEIFFARTH, F.
9097
SCHEIG, R.
8669, 9041*
SCHEIN, C.J.
8828*
SCHEPENS, G.
9249
SCHILLER, C.M.
8503*
SCHIMMELPFENNIG, W.
9162
SCHIRARDIN, H.
9084
SCHIRMER, H.F.
8746
SCHLAGER, J.
8566
SCHLESINGER, F.L.
8720, 8721, 8722, 8723
SCHLOSSARCZYK, K.
9048
SCHMIDT, E.F.
8720, 8721, 8722, 8723
SCHMIDT, H.
9015*
SCHMIDT, H.A.
8886
SCHMITT, G.
8656
SCHMITT-KOPPLER, A.
8827*
SCHNACK, H.
9152*
SCHOCHET, S.S.
9059
SCHOFIELD, P.
8999
SCHOLZ, R.W.
8625*
SCHONBUCH, C.
9222
SCHONUNG, W.
8698
SCHROEDER, D.H.
8546
SCHROEDER, E.
9136
SCHUBERT, G.E.
8848
SCHULTZ, S.G.
8550*
SCHULZ, M.R.
8967
SCHULZE, H.J.
8536
SCHUMANN, Z.
8576
SCHUPPEL, R.
8667
SCHUTZ, W.
9239
SCHWABE, C.W.
9261*
SCHWILDEN, E.D.
8764
SCONDOTTO, G.
8789
SEELIG, H.P.
8596
SEIDL, P.
8841
SEIFRED, H.F.
8525
SEIJFFERS, M.J.
8583*
SELGRAD, P.
8927
SELLS, B.H.
8681
SELMAIR, H.
9052
SEMMLER, H.
9124
SENDRA LEON, P.
8901
SENSCH, K.H.
9253
SERKA, J.
8992
SERY, C.
9229
SEYNAVE, R.
9229
SHEPPARD, E.P.
8657

SHIGETA, K.
8727
SHIMADA, M.
8589, 8727
SHIMIZU, K.
8932
SHORTER, R.
9115*
SHULL, K.H.
8626*
SIADATE, M.
9262
SICILIANI, M.
8773, 9194
SICKINGER, K.
8604
SIEBNER, H.
9166
SIEKEVITZ, P.
8661
SIEVERS, P.
9248
SIEWERT, R.
9206, 9241
SIGOT-LUIZARD, M.F.
8683
SIMON, E.
8698
SIMON, J.B.
9041*
SIMONYI, I.
8908, 9186
SINICCO, A.
9105
SIRCUS, W.
8987*, 8988*
SITZMANN, F.C.
9067
SJOBERG, H.E.
8552*
SKOPETS, M.D.
8884
SKOREPA, J.
8543
SKRINJARIC-SPOLJAR, M.
8647
SMAGULOV, A.S.
8791*
SMALL, W.P.
8987*, 8988*
SMITH, A.N.
8987*, 8988*
SMITH, D.F.
8684
SOAVE, F.
8794, 8812, 8814
SODA, K.
9217
SOKOLOW, J.N.
8736
SOLER-ARGILAGA, C.
8615*
SOLETO SAEZ, E.
8869
SOLING, H.D.
8608*
SOPMINN, B.
9275
SOULLARD, J.
8983
SOURKES, T.L.
8645
SOUTHGATE, V.R.
8700
SPALKE, B.
9096
SPANO, C.
9138, 9141
SPENA, A.R.
8749
SPERONI, M.
9037
SPILIOPOULOS, A.
9022
SPITZ, H.B.
8897*
SPITZER, G.
9234
SPUGLER, W.
8607*
SRINIVAS, H.V.
9260*
STAFFEN, A.
9198
STAFFORD, E.S.
8898
STAHLER, E.
8633*
STAIN, J.P.
9089
STAMPINO, C.G.
9196
STANCIU, G.
8872
STANLEY, M.M.
8689*
STAUDACHER, M.
9198
STECKENMESSER, R.
8746
STEFFEN, C.
8602, 9050
STEIN, J.
8685*
STERKER, R.
8561
STENRAM, U.
8621*
STERIN, D.
9009
STEVENS, J.
8540
STEVENS, J.F.
9170*
STIBENZ, J.
8521
STIRNEMANN, H.
8738
STUCKHAUS, R.
8587, 8588
STOJANOVIC, L.
8802
STOLL, U.
9283
STORCH, M.
8682
STORZ, J.
9208
STRANGEWAYS, J.E.M.
8835
STRASSBURGER, I.
8517
STRAUB, P.W.
8993
STRAUS, F.H.
8747
STREBEL, H.M.
8738
STREICHER, H.J.
9231
STROHMEYER, B.
8724
STUCKI, R.
9167
STUTINSKY, F.
8656
SUEMORI, I.
8527
SULLIVAN, R.J.
8626*
SUMMERSKILL, W.H.J.
8573*
SUZAKI, T.
8711*, 8887
SUZUKI, T.
8507*
SWAMI, K.S.
8659
SYED, S.A.
8702
SYMEONIDIS, A.
8678
SZETTEEV, K.Z.
8791*
TAGAYA, I.
9217
TAILLIEZ, R.
8539
TAKADA, A.
8638*
TAKAGI, M.
8642
TAKAHASHI, A.
8630*
TAKAHASHI, H.
8526
TAKAHASHI, R.
9243
TAKAHASHI, Y.
8618*
TAKANO, K.
8507*, 8522
TAKAO, Y.
8727
TAKEGUCHI, J.
8638*
TAMARUA, M.
9259*
TANAKA, I.
8642
TAPISSIER, J.R.
9071
TARDINI, A.
9007

TASHIRO, S.
8842
TASWELL, H.P.
9115*
TAUBER, J.
9164
TAUBERT, W.
8762
TAVERNA, P.L.
8572
TEICHMANN, W.
9099
TENCONI, L.
8758
TERRIER, P.
9214
TERROSI, F.
9006, 9027
TETREAULT, L.
8592
THEORELL, H.
8541
THIBERT, F.
8713
THIVOLET, J.
9121
THOMAS, M.
9010
THYS, O.
8734
TIBERGHIEN, R.
9280
TILZ, G.P.
8766, 8767
TIRELLI, G.
8985
TKATCH, R.
8583*
TOKIN, I.B.
8569
TOLBERT, N.E.
8617*
TOLMAN, E.L.
8672
TOMATIS, H.P.
8862
TONIC, L.
8802
TOULET, J.
8907
TOURAINE, P.
8810
TOURNIER-LASSERVE, C.
9274
TOUSSIS, D.
9255
TREMBLAY, M.
8815
TREMOLIERES, J.
8920
TREPO, C.
9121
TRESTARD, A.
8957
TROLL, U.
8691
TRONCONE, L.
8757
TROUBE, M.
8650
TRUCHAUD, M.
9224
TSAI, H.
8524
TSAI, J.M.J.
8524
TSUCHIYA, K.
9217
TSUYAMA, N.
8526
TSYGANENKO, I.T.
9181
TURGANBAEV, A.T.
8791*
TURNBULL, R.B.
8999
TUTTLE, R.J.
9269
TYOR, M.P.
8896*
UCHIDA, K.
8632*
UEMURA, J.
8842
UENO, K.
8842
UGARTE, G.
9154
UNGER, G.
8748
URBAN, E.
8560*
USHER, F.C.
8904
VACHER, D.
9092
VAKIL, B.J.
9273
VALAYER, J.
8793
VALENTINI, S.B.
8818, 8758
VAN DE BERG, L.
9223
VAN DEENEN, L.L.M.
8646
VAN DEN BERG, J.W.O.
8513*
VANDENBROUCKE, J.
9157
VAN DER MEERSCH, C.
9249
VANDOR, S.L.
8617*
VAN GOLDE, L.M.G.
8646
VANKEMMEL, M.
8916
VANLERENBERGHE, J.
8579
VAN MIEGHEM, W.
9157
VAYRE, P.
8752, 8799
VECCHI, G.P.
8607*
VEDEL, J.
9228
VELASCO, M.
9120
VENZIONI, M.
8811
VERGER, P.
9091
VERMEULEN, H.J.
9058
VERNES, A.
9290
VETRO, A.
8964
VIALA, J.J.
9131
VICARI, F.
8712
VILOTTE, M.J.
8982
VINH, LE T.
9038*
VIO, A.
8801, 8813
VIOLLET, G.
9291
VITA, G.
8710*
VITALE, V.
8800
VOERMANS, L.A.G.A.
9051
VOIGT, G.
8911
VOLLERT, J.M.
8747
VOLLMAR, J.
8850
VONACHEN, P.
9090
VON ACKEREN, H.
8785
VON EHRENSTEIN, G.
8524
VOS, A.
9171
VOSSCHULTE, K.
9019
VUILLEMIN, M.
9263
WACHTL, I.
8576
WADA, H.
8842
WAGNER, E.
9019
WAGNER, H.
9097
WAGNER, K.
9162
WALACHER, L.
8537
WALBORG, E.F., JR.
8684
WALDRON-EDWARD, D.
8586
WALDSCHMIDT, J.
8847

WALKER, A.R.P.
9270
WALKER, B.F.
9270
WALL, I.R.
9219
WAMGERMEZ, J.
8715
WANGERMEZ, A.
8715
WANKE, M.
8598*, 9017, 9034,
9035
WARNATZ, H.
9097
WARTER, J.
9084
WARWICK, G.P.
8637*
WAICHI, J.M.
9168
WATSON, C.J.
8699
WAY, L.W.
8580*, 8597*, 8599*
WEAKLEY, P.L.
8999
WEGENER, K.
8598*
WEIDENMILLER, S.
8581*
WEIGEL, W.
8740
WEILL, F.
8735
WEIMANN, D.
8895
WEIMER, M.
8699
WEINER, S.
8938
WEINREICH, J.
9156
WELTE, W.
8825
WENDENBURG, H.M.
8845
WENZ, W.
8830*
WENZEL, K.P.
8823
WEPLER, W.
9101
WESER, U.
8640
WETTENDORFF, P.
8600
WETZIG, H.
8536
WHITECROSS, D.
8879*
WICK, H.
8587, 8588
WIELAND, U.
8509*
WILD, W.
8601
WILDBERGER, H.
9045
WILDHIRT, E.
9147
WILKINS, R.M.
8896*
WILLEN, R.
8621*
WILLIAMS, J.
9259*
WILLITAL, G.H.
8761
WILLMS, B.
8608*
WIONTZEK, H.
9143
WIOT, J.F.
8897*
WIRBATZ, W.
9162
WIRTH, W.
8739
WIRTS, C.W.
8989
WISNIEWSKI-KNYPL, J.M.
8648
WITSCHI, H.
8626*
WITT, H.
8743, 8763
WITTHAUT, H.
9199
WITTMANN, C.
8651
WOLF, B.S.
8836
WOLFE, L.S.
9043*
WOLFF, G.
8538
WORSMANN, I.U.
8544
WULFF, H.D.
8942
WURTZ, A.
9227
WUSTLING, H.U.
8596
YAMAKAWA, I.
8932
YAMAMOTO, Y.
8711*, 8887
YAMAZAKI, Y.
9217
YASUDA, K.
8507*, 8522
YAVORDIOS, D.
8675
YSUCHIYA, Y.
9217
ZAIN, B.K.
8558*
ZAIN-UL-ABEDIN, M.
8558*
ZANETTI, A.
8843
ZANOLI, P.G.
8892
ZAUNBAUER, W.
8705*
ZBARSKY, S.M.
8692
ZEILLER, P.
9253
ZELLWEGER, H.
9059
ZHEREBTSOVA, R.V.
8890
ZIMMERMANN, H.B.
9162
ZIMMERMANN, H.D.
8781
ZIMMERMANN, K.
9234
ZIMMERMANN, S.
8839
ZOLKIVER, K.I.
8791*
ZUIDEMA, G.D.
8898

Numbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- ABDOMEN
  - ACUTE, GASTROINTESTINAL TRACT PERFORATIONS, MORTALITY RATE, ANATOMOPATHOLOGY (9241)
  - ACUTE, LEUCOCYTOSIS, ACUTE HEMORRHAGE, METABOLIC DISORDERS (9239)
  - ACUTE, RADIOLOGY, ABDOMINAL VASCULATORY DISORDERS, ANGIOGRAPHY (8763)
  - ACUTE, SYMPTOMATOLOGY, ETIOLOGY, PAIN (9238)
  - ACUTE, TRAUMA, IATROGENIC LESIONS, EMERGENCY MEASURES (9242)
  - EMBRYONIC DEVELOPMENT, OMPHALOCELE, GASTROSCHISIS (8846)
  - FRONT WALL, PROJECTION OF SMALL INTESTINE, JAPAN (8530)
  - SURGERY, PREMATURE CORRECTIVE INTERVENTION (9246)
- ABSORPTION
  - CALCIUM, VITAMIN D, RICKETS, RAT (8555)*
  - CARBOHYDRATES, BLOOD CALCIUM LEVELS, MAN (8563)
  - COLON, VITAMIN B, FLORA (8564)
  - GASTROINTESTINAL TRACT, CEPHALEXIN, ULCER (8835)
  - INTESTINAL, SUGAR, SODIUM, DIABETIC RATS (8554)*
  - INTESTINE, CALCIUM AND PHOSPHORUS, SIMULTANEOUS INTRAVENOUS INFUSION, PIG (8571)
  - INTRAABDOMINAL, EVANS BLUE LABELED PROTEIN, DOG (8561)
  - IRON, ACCUMULATION IN DUODENAL MUCOSA, THALASSEMIA, CHILDREN (8752)
  - LIPIDS, DUODENAL EPITHELIUM, EXPOSURE TO CE144, RAT (8569)
  - SMALL INTESTINE, DRUG COATING, PROTECTION AGAINST GASTRIC JUICE (8567)
- ACETYLCHOLINE
  - CONTROL, GLUCONEOGENESIS, PERFUSED LIVER, RAT (8665)
- ADRENALECTOMY
  - HISTOLOGY, ENZYME, AUTORADIOGRAPHY (8598)*
- ALCOHOL
  - LIVER INJURY, GLUTATHIONE, LIPID PEROXIDATION (8638)*
  - LIVER METABOLISM, GLUCOSE, NADH, AMINOLEVULINATE SYNTHETASE (8628)*
- ALCOHOLISM
  - CHRONIC, ALCOHOL, METABOLISM, LIVER STEATOSIS, CIRRHOSIS (9154)
  - LIVER DAMAGE, ELECTRON MICROSCOPY, LIVER FUNCTION (8653)
  - LIVER STEATOSIS, DIET, PATHOGENESIS (9110)
  - LIVER STEATOSIS, PATHOGENESIS, LIPID METABOLISM (9094)
  - PANCREATITIS, PARASITES, PANCREATIC CARCINOMA (9036)
- ALLOGRAFT
  - PANCREAS, NATURAL DEVELOPMENT, FUNCTIONAL AND MORPHOLOGICAL ALTERATIONS (9007)
- AMEBIASIS
  - LIVER, DIAGNOSIS, SAIGON (9263)
  - LIVER, METRONIDAZOLE (9260)*
- AMINO ACID
  - LIVER POOLS, HYPERGLYCEMIA, GLUCAGON, HYDROCORTISONE (8627)*
- AMMONIA
  - BLOOD, LIVER CIRRHOSIS, ANTIBIOTIC TREATMENT (9165)
  - BLOOD, LIVER PATHOLOGY, DIAGNOSIS (8724)
- AMYLASE
  - ALPHA, METABOLISM, URINE CONTENT, PANCREATIC SECRETION (8600)
- ANASTOMOSIS
  - GASTRODUODENAL, GASTRECTOMY, PEPTIC ULCER (8893)
- ANATOMOPATHOLOGY
  - CHRONIC PANCREATITIS, TRYPTIC NECROSIS PATHOGENESIS (9025)
  - CONGENITAL ESOPHAGEAL STENOSES, SURGERY (8810)
  - GASTRIC TERATOMA, SYMPTOMATOLOGY, NEWBORN (8847)
  - POSTHEPATITIC SYNDROMES, CLASSIFICATION, AGGRESSIVE AND PERSISTENT CHRONIC HEPATITIS (9146)
  - VESICOINTESTINAL FISSURE, SURGERY, CLINICAL VARIETIES (8978)
- ANEMIA
  - CROHN'S DISEASE, REGIONAL ILEOCOLITIS, SURGICAL TREATMENT (8927)
- ANESTHESIA
  - HALOTHANE, LIVER FUNCTION, SURGERY (9113)
- ANGIOGRAPHY
  - PANCREATIC CARCINOMA, RETROSPECTIVE, PREOPERATIVE, DIAGNOSIS (8705)*
- ANTHELMINTIC
  - PYRANTEL PAMOATE, ASCARIASIS, CHILDREN (9259)*
- ANTIBIOTIC
  - ACTINOMYCIN D, INTESTINAL EPITHELIUM, RAT (8690)*
  - E.COLI RESISTENCE, ENTERITIS, CHARACTERISTIC H-ANTIGEN (8721)
  - INTESTINAL MICROFLORA, COLON, ILEUM (9224)
  - NEOMYCIN, INFECTIOUS DIARRHEA, CHILDREN (9202)
- ANTIBODY
  - ABO(H)-BLOOD GROUP, GASTROINTESTINAL ANTIGENS, ULCERATIVE COLITIS (8995)
  - ACID CELL, GASTRIC MUCOSA, CHRONIC GASTRITIS (8844)
  - GASTRIN TETRAPEPTIDE, SERUM PROTEIN CARRIERS (8506)*
- ANTIGEN
  - AUSTRALIA, BLOOD DONORS, VIRAL HEPATITIS (9116)
  - AUSTRALIA, CHILE, INCIDENCE, VIRAL HEPATITIS (9119)
  - AUSTRALIA, HEMODIALYSIS CENTER, VIRAL HEPATITIS (9118)
  - AUSTRALIA, INCIDENCE, LIVER DISEASES, VIRAL HEPATITIS (9141)
  - AUSTRALIA, VIRAL HEPATITIS, BLOOD TRANSFUSION, PROPHYLAXIS (9125)
  - AUSTRALIA, VIRAL HEPATITIS, INCIDENCE, SICILY (9138)
  - AUSTRALIA, VIRAL HEPATITIS, LIVER

DISEASES, SYSTEMIC DISEASES (9139)
AUSTRALIA, VIRAL HEPATITIS, LIVER DISEASES, TRANSFUSION PATIENTS (9119)
AUSTRALIA, VIRAL HEPATITIS, PERIARTERITIS NODOSA, LIVER HISTOPATHOLOGY (9121)
E.COLI, CULTIVATION, IMMUNOFLUORESCENCE (8720)
SH SERUM HEPATITIS, PREVALENCE (9114)*
SPECIFIC FEATURES, FASCIOLA HEPATICA, LIVER ALTERATIONS (8539)
STIMULATION OF LYMPHOCYTES, IN VITRO, LIVER, CIRRHOSIS (9065)

ANTRUM
PYLORUS, HETEROTOPIC PANCREAS, BLEEDING SYNDROME (9005)

ANUS
ANORECTAL VENEREAL DISEASES, PROCTOLOGY, DETECTION (8982)
FISTULA, ANATOMOPATHOLOGY, TREATMENT (8943)
SYPHILIS, PRIMARY AND SECONDARY, DIAGNOSIS (8984)

APPENDECTOMY
URETHRAL RUPTURE, SURGICAL MANAGEMENT (8967)

APPENDICITIS
PERITONITIS CHRONICA FIBROSA ENCAPSULANS, ILEUS, DIAGNOSIS (8764)

ARTERIOGRAPHY
SMALL INTESTINE, TUMORS, HISTOLOGY (8907)
ULCERATIVE RECTOCOLITIS, LOWER MESENTERIC ARTERIO-VENOUS FISTULA SURGERY (8996)

ARTERY
PANCREATICODUODENAL, SPONTANEOUS RUPTURE, DIAGNOSIS, SURGERY (9222)

ASCARIASIS
LUMBRICOIDES, PYRANTEL PAMOATE, CHILDREN (9259)*
THIABENDAZOLE TREATMENT, IRAN (9262)

ATRESIA
ANUS, RECTUM, DIAGNOSIS (8761)
COLON, DIAGNOSIS, TREATMENT (8979)
ESOPHAGEAL, ASSOCIATED MALFORMATIONS, SURGERY, PROGNOSIS (8803)
ESOPHAGEAL, MEMBRANOUS STENOSIS, THERAPY, ANATOMOPATHOLOGY (8801)
ESOPHAGEAL, VARICES, REPLACEMENT, COLON (8809)
ESOPHAGUS, SURGERY, INFANT (8794)
ESOPHAGUS, SURGERY, MORTALITY (8802)
ESOPHAGUS, TRANSVERSE COLON TRANSPLANT, ESOPHAGOSTOMY (8812)

BACTERIA
CLOSTRIDIUM PERFRINGENS, FLORA, NORMAL INTESTINE (8695)*
SALMONELLA THOMPSON, EPIDEMIOLOGY (9245)

BACTERIAL DISEASE
SALMONELLOSIS, BACTRIM THERAPY, TYPHOID FEVER (9237)
SALMONELLOSIS, DIAGNOSIS, CHICKEN (8769)
SALMONELLOSIS, FOOD POISONING, HYGIENE (9236)
SALMONELLOSIS, PARATYPHOID FEVER, CARRIERS, SCHLESWIG-HOLSTEIN (9247)
SHIGELLA SONNEI INFECTION, SULFONAMIDE THERAPY, ADULTS (9248)

BILE
GALLBLADDER, COMMON BILE DUCT, ALKALINE PHOSPHATASE (9187)
HEMOBILIA, FALSE ANEURYSM, RIGHT HEPATIC ARTERY (9184)
VISCOSITY, GALLBLADDER CONTRACTION, FLOATING BILE STONES (9189)

BILE ACID
COMPOSITION, ESTRADIOL, CHOLESTEROL, THYROXINE (8632)*

BILE DUCT
DILATATION, PSEUDOCYST, PATHOGENESIS (9191)
INTRAHEPATIC, PRIMARY STENOSIS, CHOLANGIOGRAPHY, ETIOLOGY (9176)
OBSTRUCTION, HETEROTOPIC PANCREAS, DUODENAL WALL (9178)

BILE PIGMENT
UROBILIN, UROBILINOGEN, STERCOBILIN, CLOSTRIDRIA (8699)

BILE SALT
ENTEROHEPATIC CIRCULATION, INTESTINAL ABSORPTION, BILE ACID, BIOSYNTHESIS (8570)
METABOLISM, INTESTINAL LIPID ABSORPTION, BLIND LOOP SYNDROME (8562)

BILHARZIASIS
INTESTINE, DETECTION, CHILDREN (9279)
WOODY REGIONS, EPIDEMIOLOGY (9278)

BILIARY TRACT
CHOLANGITIS, ACUTE SUPPURATIVE, AMPULLARY FIBROSIS (9172)
COMMON BILE DUCT, REPLACEMENT, SILICONE RUBBER (9171)
COMMON DUCT, NONOBSTRUCTIVE DILATATION, STONES (9185)
DISEASE, CHRONIC PANCREATITIS, ALCOHOLISM (9016)
DISEASE, DIAGNOSIS, CHOLANGIOGRAPHY (8746)
HEMOBILIA, FALSE ANEURYSM, HEPATIC ARTERY (9184)
PRIMARY MALIGNANT TUMOR, OBSTRUCTIVE JAUNDICE, DIAGNOSIS (9179)
SURGERY, MORTALITY RATE, PANCREATIC INVOLVEMENT (9181)
SURGERY, OPERATIVE RADIOMANOMETRICAL FLUX MEASUREMENT, OPERATIVE CHOLANGIOGRAPHY (8752)

BILIRUBIN
GLUCURONYL TRANSFERASE, LIVER, ETHANOL, PARTIAL HEPATECTOMY, RAT (8650)
HYPERBILIRUBINEMIA, PHENOBARBITAL, ENZYME INDUCTION (8679)

BIOPSY
INTESTINE, TUBERCULOSIS, CHILD (9249)
MENGHINI'S, LIVER, TECHNICAL IMPROVEMENTS, CHILDREN, INFANTS (8778)

BLEEDING
GASTRIC AND DUODENAL ULCER, INCIDENCE, CHILDREN (8890)
HEMORRHOID, LIGATURE, NODULAR HEMORRHOIDS (8959)

BLOOD
DONORS, AUSTRALIA ANTIGEN, INCIDENCE (9116)
TRANSFUSION, UPPER INTESTINAL TRACT HEMORRHAGE, TREATMENT (9231)

BLOOD VESSEL
FUNCTIONAL MESENTERIC OCCLUSION, NECROSIS OF COLON, SURGERY (9251)

  - HEPATIC AND SUPERIOR MESENTERIC ARTERIES, OCCLUSION, LIVER, BLOOD FLOW (9255)
  - PANCREATICODUODENAL ARTERY, SPONTANEOUS RUPTURE, DIAGNOSIS (9222)
  - PERIPHERAL ARTERITIS, CHRONIC PANCREATITIS, ETIOLOGY (9037)
  - PORTAL VENOUS SYSTEM, PNEUMATOSIS, PROGNOSIS (9214)
  - VENOUS OCCLUSION, LIVER, CIRRHOSIS, ETIOLOGY (9063)
- BONE MARROW
  - FUNCTION, LEUCOCYTIC RESISTANCE, CHRONIC LIVER DISEASES (9156)
  - PROLIFERATION, VIRAL HEPATITIS, CHILDREN (9130)
- BOWEL
  - DISEASE, INFLAMMATORY ENTERITIS, MAGNESIUM DEFICIENCY, ULCERATIVE COLITIS (8921)*
- CALCIFICATION
  - CARCINOMA, PANCREAS, ALCOHOLISM, ENZYME TESTS (9015)*
- CANCER
  - CERVIX, IRRADIATION, GASTROINTESTINAL LESION (9200)*
  - LIVER DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, CIRRHOSIS (9040)*
  - RECTUM, SURGERY, TECHNIQUE (8970)
- CARBOHYDRATE
  - ABSORPTION, BLOOD CALCIUM LEVEL, MAN (8563)
  - OVERLOAD, LIVER, GLYCOGENOSIS, GALACTOSEMIA, FRUCTOSEMIA (9070)
  - PROTEIN BOUND, HEXOSES, LIVER DAMAGE (9093)*
- CARCINOGEN
  - B-PROPIOLACTONE, HAPATOMA, SUCKLING MICE (8637)*
  - N-HYDROXY-2-FLUORENYLACETAMIDE, ADDUCT, LIVER PROTEIN (8671)
  - O-TOLUIDINE, HEMATEST, FECAL BLOOD TEST, AMIDOPYRINE (8704)*
  - 2-ACETYLAMINOFLUORENE, LIVER ULTRASTRUCTURE (8639)*
- CARCINOGENESIS
  - LIVER, ADRENALECTOMY, MOUSE (8678)
  - LIVER, PRECANCEROUS STAGE, MORPHOLOGY (8683)
- CARCINOMA
  - ADENO-, PRIMARY, JEJUNUM (8900)
  - BILIARY TRACT, WHIPPLE RESECTION (9193)
  - COLON, EXTENSIVE, SURGERY (8971)
  - DIAGNOSIS, LAPAROTOMY, BENIGN LESION, CYTOLOGY (8709)*
  - ESOPHAGUS, HEMATOLOGY, SURVIVAL TIME, THERAPY, RADIATION (8791)*
  - LIVER SARCOMA, THOROTRAST (9076)
  - PRIMARY, LIVER, CIRRHOSIS, SURGERY (9151)*
- CELIAC AXIS
  - STENOSIS, DUODENOPANCREATECTOMY (9227)
  - STENOSIS, LIGAMENT CONSTRICTION, AORTOGRAPHY, ANATOMOPATHOLOGY (9225)
- CELIAC DISEASE
  - DEPEPTIDASE, DISACCHARIDASE, SMALL INTESTINE (8929)*
- CHOLANGIOGRAPHY
  - BILIARY TRACT DISEASE, DIAGNOSIS (8746)
- CHOLANGITIS
  - ACUTE SUPPURATIVE, AMPULLARY FIBROSIS (9172)
  - SCLEROSING, INTRAHEPATIC BILIARY CANALICULI, CHRONIC JAUNDICE, CHOLANGIOGRAPHY (8605)
- CHOLECYSTITIS
  - ACUTE, EMERGENCY CHOLECYSTECTOMY, RADIOLOGY, MORTALITY (9183)
  - NONCALCULOUS, ACUTE, POST-SURGICAL, TRAUMA (9180)
- CHOLEDOCHOLITHIASIS
  - GASTRECTOMY, DUODENAL ULCER, BILLROTH II (9199)
- CHOLEDOCHOTOMY
  - DIAPHRAGM, THORACIC FISTULA, RADIOLOGY (9186)
- CHOLELITHIASIS
  - ACUTE PANCREATITIS, EARLY STAGE, SURGERY (9029)
  - BILE CHOLESTEROL, GALLSTONE FORMATION, LIPID METABOLISM, CIRRHOSIS (8607)*
  - BILIARY PERITONITIS, PANCREATICOBILIARY REFLUX, BILIARY HYPERTENSION (9197)
  - FLOATING BILE STONES, BILE VISCOSITY, GALLBLADDER CONTRACTION (9189)
  - OPERATIVE CHOLANGIOGRAPHY, INTRAHEPATIC, BILE DUCT STENOSIS, CHOLANGITIS (8783)
  - SOLITARY OCCLUSIVE STONE, GALLBLADDER NECK, RADIOGRAPHY (9190)
  - SURGERY, EXTRAHEPATIC BILE DUCT, MORTALITY RATE (9182)
  - SYMPTOMLESS GALLSTONE, OPERATIVE RADIOLOGY, OPERATIVE MANOMETRY (9198)
- CHOLERA
  - ACUTE, CONVALESCENCE, INDICATOR DILUTION STUDY (9201)*
  - SMALL BOWEL, INDICATOR DILUTION STUDY (8928)*
- CHOLERESIS
  - INDAZOLE DERIVATIVES, PHARMACODYNAMICS, RAT (8675)
- CHOLERETIC AGENT
  - CHOLECYSTOKININ, GASTRIN II, CERULEIN (8619)*
- CHOLESTASIS
  - EXTRAHEPATIC, LIPIDS, LIVER, SERUM, JAUNDICE (9081)
- CHOLESTEROL
  - BILE, CHOLIC ACID, METABOLISM (8610)*
  - BIOSYNTHESIS, 4-ALPHA-METHYL STEROL, LIVER MICROSOMAL OXIDATION (8654)
  - BIOSYNTHESIS, INHIBITOR (8644)
  - BIOSYNTHESIS, OXIDATION OF 4, 4-DIMETHYL STEROL, LIVER MICROSOME (8649)
  - METABOLISM, ABSORPTION (8565)
- CIRCULATION
  - HEPATIC ARTERY, RUPTURED ANEURYSM (9209)
  - LIVER, PARTIAL HEPATECTOMY, VASCULAR ANATOMY (8696)*
  - LIVER, XENON 133 (8745)
  - SPINAL CORD, HEATING, COOLING, INTESTINAL (8698)
- CIRRHOSIS
  - ALCOHOLIC, RENAL MEDULLAR NECROSIS, PATHOLOGY (9168)
  - ANICTERIC, LIVER, SULFOBROMOPHTHALEIN,

  - CHOLINESTERASE, TESTS (9159)
  - FAMILIAL, IMMUNOGLOBULIN, AUTOIMMUNE FEATURES (9150)*
  - HEPATECTOMY, PARTIAL, HUMAN (9161)
  - LAENNEC'S, GROWTH HORMONE, DIABETES (9153)*
  - LAENNEC'S LIVER, LIPID METABOLISM, GALLSTONE FORMATION (8607)*
  - LIVER, ASCITES, MANAGEMENT (8647)
  - LIVER, CHRONIC HEPATITIS, SERUM COMPLEMENT (9044)
  - LIVER, FIBRINOLYTIC ACTIVITY, CLOTTING DISORDERS (9152)*
  - LIVER, MALLORY BODIES, FATTY INFILTRATION (9042)*
  - LIVER, PITUITARY AND ADRENAL FUNCTION, PLASMA CORTISOL BREAKDOWN (9160)
  - LIVER, PORTACAVAL SHUNT, NECROSIS (9157)
  - LIVER, PROGNOSIS, THERAPY (9163)
  - LIVER, RIGHT-SIDED HYDROTHORAX, PATHOGENESIS (9167)
  - LIVER SIZE, FUNCTION, BLOOD FLOW (9164)
  - PRIMARY CARCINOMA, SURGERY (9151)*
  - SELENIUM 75-METHIONINE, DIAGNOSIS, LIVER (8706)*

- COLITIS
  - CONSTIPATION, BISMUTH SUBNITRATE, KARAYA GUM (8946)
  - GASTROENTERITIS, DIROMO, BACTERICIDE EFFECT (9203)
  - ULCERATIVE, AZULFIDINE, METABOLISM, EXCRETION (8557)*
- COLON
  - ABSORPTION, VITAMIN B, FLORA (8564)
  - ATRESIA, DIAGNOSIS, TREATMENT (8979)
  - BILE DUCT, FISTULA, ANATOMOPATHOLOGY, PATHOGENESIS (9175)
  - CARCINOMA, SURGERY, EXTENSIVE (8971)
  - CROHN'S DISEASE, ANAL LESIONS, RADIOLOGY (9001)
  - CROHN'S DISEASE, DIAGNOSIS, SYMPTOMATOLOGY (9000)
  - DIVERTICULITIS, PELVIC SEPSIS, SURGERY (8975)
  - DIVERTICULITIS, SIGMOID MYOTOMY, LAPAROTOMY (8973)
  - DIVERTICULOSIS, ABDOMINAL MUSCULATURE DEFICIENCY (8957)
  - DIVERTICULOSIS, ETIOLOGY, EPIDEMIOLOGY (8944)
  - ENDOSCOPY, ENDOPHOTOGRAPHY, NEOPLASTIC LESIONS (8772)
  - EPITHELIUM, CRYPTS, PROLIFERATION KINETICS (8510)*
  - ISCHEMIC, REVERSIBLE, ANGIOGRAPHY (8986)
  - MAN, IN VITRO, TRANSPORT, SODIUM (8548)*
  - MEGA-, TOXIC, ULCERATIVE COLITIS, ILEOSTOMY COLOSTOMY (8999)
  - PARTIAL NECROSIS, MESENTERIC VASCULARY OCCLUSION, SURGERY (9251)
  - PERFORATION, ABDOMINAL TRAUMA, TRAFFIC ACCIDENTS (8945)
  - PERFORATION, SPONTANEOUS, HEMODIALYSIS (8977)
  - POLYPOSIS COLI, FAMILIAL, PREVENTATIVE SURGERY (8968)
  - STENOSIS, GASTRODUODENAL RESECTION, GASTROENTEROANASTOMOSIS (8856)
  - TRANSVERSE, STRANGULATED HERNIA, ANATOMOPATHOLOGY, SURGERY (8949)
  - ULCERATIVE COLITIS, CATAMNESIS, STATISTICS, MORTALITY RATE (8990)
  - ULCERATIVE COLITIS, NOSOLOGY, ETIOLOGY PATHOGENESIS (8991)
- COLOSTOMY
  - LOCATION, BOWEL FUNCTION, DIET (8946)
- CONGENITAL DISORDER
  - OMPHALOCELE, GASTROSCHISIS, INCIDENCE (8840)
- CONSTIPATION
  - COLITIS, BISMUTH SUBNITRATE, KARAYA GUM (8946)
- CONTRAST MEDIA
  - BARIUM, ORAL, SMALL INTESTINE, INTUSSUSCEPTION (8897)*
  - PHENYLPYRROLIDINE DERIVATIVE, ORAL CHOLECYSTOGRAPHY, METABOLISM, RAT, DOG, MAN, BILE (8677)
- CROHN'S DISEASE
  - COLON, ANAL LESIONS, RADIOLOGY (9001)
  - COLON, DIAGNOSIS, SYMPTOMATOLOGY (9000)
  - DUODENUM, HYPOTONIC DUODENOGRAPHY, RADIOLOGY (8926)
  - DUODENUM, RADIOLOGY, ANATOMOPATHOLOGY (8873)
  - ETIOLOGY, PATHOGENESIS, THERAPY (8923)
  - SECONDARY HEMOLYTIC ANEMIA, REGIONAL ILEOCOLITIS, SURGICAL TREATMENT (8927)
  - SMALL INTESTINE, MASSIVE RESECTION, DIET, PHOSPHORUS AND CALCIUM METABOLISM (8925)
  - TAKAYASU DISEASE, TERMINAL ILEITIS, VASCULAR LESIONS (8924)
  - ULCERATIVE COLITIS, THROMBOCYTOSIS, THROMBOSIS (8993)
- CYST
  - FALSE, PANCREAS, MYOCARDIAL ISCHEMIA, GANGRENE OF LEG (9009)
  - GASTRIC WALL, RADIOLOGY, SURGERY (8875)
- DIAGNOSIS
  - ACUTE PANCREATITIS, AMYLASE DETERMINATION, EARLY LAPARATOMY (8738)
  - DIFFERENTIAL, CECAL POLYPOSIS, DOUBLE CONTRAST TECHNIQUE, BENIGN TUMOR (8948)
  - DIFFERENTIAL, CLINICAL, CHEMICAL, LIVER DISEASES (8780)
  - DIFFERENTIAL, GASTROINTESTINAL HEMORRHAGE, INTESTINAL CONTRACTIONS. HISTOLOGY (8781)
  - DIFFERENTIAL, GLYCOGENOSES, HEPATOMEGALY, THERAPY (8753)
  - DIFFERENTIAL, JAUNDICE, PHOSPHATASEMIA BILIRUBINEMIA, RATIO (8773)
  - DIFFERENTIAL, JAUNDICE, MAC LAGAN TEST ALKALINE PHOSPHATASE, VIRAL HEPATITIS, NON-INFECTIOUS CHOLESTASIS (8749)
  - DIFFERENTIAL, LIVER DISEASES, IMMUNOGLOBULIN DETERMINATION (8779)
  - DIFFERENTIAL, MALABSORPTION, DUODENAL MUCOSA, MICROSCOPY (8740)
  - DIFFERENTIAL, TUMORS, PANCREAS, LYMPHOSARCOMA, CARCINOMA (8790)
  - DYSPHAGIA, PHYSIOPATHOLOGY, ADULT (8776)

- E.COLI, H-ANTIGEN, IMMUNOFLUORESCENCE (8720)
- ENTERITIS, CHARACTERISTIC, H-ANTIGEN, IMMUNOFLUORESCENCE, SYMPTOMATOLOGY (8722)
- ENTERITIS, COLI RESISTANCE TO ANTIBIOTICS, CHARACTERISTIC H-ANTIGEN (8721)
- ENTERITIS, IMMUNOFLUORESCENCE, CHARACTERISTIC, H-ANTIGEN, EPIDEMIOLOGY (8723)
- SALMONELLOSIS, ENRICHMENT MEDIA, CHICKEN (8769)
- ZOLLINGER-ELLISON SYNDROME, PENTAGASTRIN INFUSION, GASTRIC SECRETION (9252)

DIAGNOSTIC PROCEDURE
- AMYLASE DETERMINATION (8729)
- ANGIOGRAPHY, GALLBLADDER DILATATION, OBSTRUCTIVE JAUNDICE (8703)•
- ANGIOGRAPHY, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS (8992)
- AUGMENTED SECRETIN TEST, EXOCRINE PANCREAS FUNCTION, DUODENAL BICARBONATES (8768)
- BARIUM SULFATE, CONTRAST MEDIA, GASTROINTESTINAL TRACT RADIOGRAPHY, IMPROVED CONTRAST MEDIA (8726)
- CHOLANGIO-CHOLECYSTOGRAPHY, BILE DUCT, GLUCOSE, CONTRAST MEDIUM (8710)•
- COMBINED ROENTGENOLOGY, STOMACH, GALLBLADDER (8719)
- COPROLOGICAL INVESTIGATION, CLINICAL VALUE, DIETARY APPLICATIONS (8770)
- DOUBLE CONTRAST ROENTGENOLOGY, EARLY GASTRIC CARCINOMA (8743)
- DUODENAL INTUBATION, PANCREATIC EXPLORATION, MAN (8750)
- ELECTROGASTROGRAPHY, PEPTIC ULCER, COMPLICATIONS (8787)
- ELECTRON MICROSCOPY, SMALL INTESTINE, MALABSORPTION (8771)
- EMERGENCY ANGIOGRAPHY, MASSIVE HEMATEMESIS, LIVER CIRRHOSIS (8735)
- ENDOSCOPY, ENDOPHOTOGRAPHY, COLON (8772)
- ENDOSCOPY, RADIOLOGY, GASTRIC ULCER AND NEOPLASMS, CHRONIC GASTRITIS (8789)
- ENTERIC FEVERS, URINE DIAZO REACTION, EVALUATION (8744)
- ESOPHAGOSCOPY, ESOPHAGEAL FOREIGN BODIES, INCIDENCE (8816)
- GALACTOSEMIA, HETEROZYGOTE GENE CARRIERS, HEPATOSPLENOMEGALY (8741)
- GAMMA CAMERA, INSPIRATION AND EXPIRATION VIEWS, HEPATIC PLIABILITY, LIVER, PATHOLOGY (8747)
- GASTRIC ANALYSIS (8730)
- GASTRIC BIOPSY, GASTRIC FUNCTION, MORPHOLOGY (8766)
- HEPATOGRAPHY WITH LIPIODOL, LIVER, METASTASES, ABDOMINAL TUMORS (8718)
- HEPATOSPLENOSCINTOGRAPHY, SHORT LIFE RADIOISOTOPES, CHILDREN (8755)
- HYPOTONIC DUODENOGRAPHY, INDICATIONS, CONTRAST MEDIA (8762)
- INFUSION, CHOLECYSTOCHOLANGIOGRAPHY, SERUM ENZYMES, LIVER, PATHOLOGY (8725)
- INTRAVENOUS, GALACTOSE TOLERANCE TEST, LIVER, PATHOLOGY, LIVER FUNCTION TEST (8777)
- INVESTIGATION OF GASTRIC SECRETION, GASTRIN STIMULATION, VAGOTOMY (8774)
- ISOTOPES, HEREDITARY METABOLIC DISORDERS, GLUCOSE, GALACTOSE, MALABSORPTION (8754)
- LAPAROSCOPY, LIVER PUNCTURE BIOPSY, PREVENTION OF COMPLICATIONS (8782)
- LIPID ABSORPTION TEST, TRIGLYCERIDE IODATE (LIPIODOL), PREMATURE INFANTS (8775)
- LIVER ANGIOGRAPHY, METASTASES, CONTRAST MEDIA (8707)•
- LIVER FUNCTION, MESENCHYMAL CLEARANCE, COLLOIDAL IRON (8786)
- LYMPHOGRAPHY, FILARIASIS, CHYLURIA (9291)
- MAXIMAL SECRETION TEST, HISTAMINE, GASTRIC FUNCTION, MAN (8713)
- MEASUREMENT OF PORTAL FLOW, ISOTOPE CLEARANCE (8733)
- METHODOLOGY, GASTRIC CANCER, CYTOLOGY (8727)
- 113M IN ISOTOPE, LIVER SCINTILLOGRAPHY KUPFFER CELL (8716)
- OPERATIVE CHOLANGIOGRAPHY, CHOLELITHIASIS, INTRAHEPATIC BILE DUCT, STENOSIS (8783)
- OPERATIVE CHOLANGIOGRAPHY, OPERATIVE RADIOMANOMETRICAL FLUX MEASUREMENT, BILIARY TRACT SURGERY (8752)
- OPERATIVE MANOMETRY, RADIOLOGY, SYMPTOMLESS CHOLELITHIASIS (9198)
- PANCREAS, SCINTISCANNING, LIMITATIONS, CHRONIC PANCREATITIS (8751)
- PERCUTANEOUS CHOLANGIOGRAPHY, ROENTGENOGRAM, OBSTRUCTIVE JAUNDICE (8736)
- PERFUSION CHOLANGIOGRAPHY, BILE DUCT EXAMINATIONS, HAZARDS (8715)
- PERORAL BIOPSY, SMALL INTESTINE, MALABSORPTION SYNDROMES (8712)
- RADIOISOTOPIC METHOD, GLUCURONIDE FORMATION MEASUREMENT, MAN (8789)
- RADIOISOTOPIC TECHNIQUE, BIOCHEMICAL METHODS, LIVER CANCER, HYDATID CYST (8758)
- RADIOLOGY, ANGIOGRAPHY, ACUTE ABDOMEN (8763)
- RADIOLOGY, DOUBLE CONTRAST, SMALL INTESTINE (8739)
- RADIOLOGY, DUODENAL DIVERTICULUM, ETIOLOGY (8760)
- RADIOLOGY, GALLBLADDER FUNCTION, MORPHOLOGY (8756)
- RADIOLOGY, SIGMOID, RECTOSIGMOIDAL JUNCTION (8737)
- RADIOLOGY, VARICES, BULBUS DUODENI (8759)
- RADIOLOGY WITH AND WITHOUT CONTRAST MEDIA, ESOPHAGEAL, CARDIAL FUNCTION, INFANTS (8728)
- REMOTE CONTROL PILLS, SAMPLING OF GASTROINTESTINAL TRACT CONTENT (8731)
- SCINTIGRAPHY, PANCREATITIS, PANCREATIC TUMOR (8737)
- SCINTILLOGRAPHY, LABELED SELENIOMETHIONINE, ACUTE PANCREATITIS (8732)

  - STANDARD RADIOLOGY, PANCREATITIS, GASTRODUODENAL AND BILE DUCT RADIOGRAPHY (8734)
  - SUBMAXIMAL BETAZOLE TEST, SPONTANEOUS GASTRIC SECRETION, PEPTIC ULCER (8765)
  - TARGET ANGIOGRAPHY, CELIAC ARTERIOGRAPHY, PANCREATIC LESIONS (8765)
  - TUBELESS GASTRIC ACIDITY, GASTRIC HYPOCHLORHYDRIA, IRON MALABSORPTION (8708)*
  - ULTRASONIC TECHNIQUE, ATRESIA LEVEL, ANUS, RECTUM (8761)
- DIAPHRAGM
  - TRAUMATIC RUPTURE, RADIOLOGY, SURGERY (9235)
- DIARRHEA
  - DIBROMOHYDROXY-QUINOLINE, IODOCHLOROHYDROXY-QUINOLINE, GASTROENTERITIS (9244)
  - INFECTIOUS, NEOMYCIN TREATMENT, CHILDREN (9202)
- DIET
  - MASSIVE RESECTION, SMALL INTESTINE, MEDICAL TREATMENT (8920)
- DIGESTION
  - DISORDERS, ENZYME DEFICIENCY, HYPOACIDITY (8863)
- DISACCHARIDE
  - FRUCTOSE, INTOLERANCE, BIOPSY, LIVER, STEATOSIS, FIBROSIS (9038)*
- DISEASE
  - CYSTIC, CARCINOMA, STOMACH (8834)
  - DANBOLT AND CLOSS, ACRODERMATITIS ENTEROHEPATICA, CHRONIC DIARRHEA (9213)
  - INFLAMMATORY INTESTINAL, ULCERATIVE COLITIS, REGIONAL ENTERITIS (8989)
  - WILSON'S, NEUROLOGICAL LESIONS, LIVER FUNCTION (9045)
- DIVERTICULITIS
  - COLON, ABDOMINAL MUSCULATURE DEFICIENCY (8957)
  - COLON, ETIOLOGY, EPIDEMIOLOGY (8944)
  - COLON, PELVIC SEPSIS, SURGERY (8975)
  - COLON, SIGMOID MYOTOMY, LAPAROTOMY (8973)
  - SIGMOID, UTERINE PERFORATION, ANATOMOPATHOLOGY (8960)
- DIVERTICULUM
  - DUODENUM, ROENTGENOLOGY, ETIOLOGY (8760)
  - DUODENUM, SURGERY, PEPTIC ULCER (8859)
  - ESOPHAGUS, SURGERY, MORPHOLOGY (8814)
  - MECKEL'S, FOREIGN BODIES, SURGERY, NEOPLASM (8913)
  - STOMACH, CHOLECYSTECTOMY, RADIOLOGY (8871)
- DRUG
  - ACETYLESALICYLIC ACID, PHENYLBUTAZONE, GASTRODUODENAL BLEEDING (8866)
  - AZOTHIOPRIN, CHRONIC HEPATITIS (9145)
  - BACTRIM, SALMONELLOSES, THERAPY (9237)
  - BARBITURATES, LIVER METABOLISM, ENZYME INDUCTION (8673)
  - BENZYDAMINE HCL, LIVER FUNCTION (9058)
  - BETAZOLE HYDROCHLORIDE, GASTRIC SECRETION, GASTRIC TUMOR, MAN (8878)
  - CARDIAC GLYCOSIDES, GASTROINTESTINAL DISTRIBUTION, REABSORPTION (8566)
  - CHOLERETIC, INDAZOLE DERIVATIVES, PHARMACODYNAMICS, RAT (8675)
  - CHLOROFORM, MERCURY, GOLD, HEPATOTOXICITY, IATROGENIC, LIVER STEATOSIS (9100)
  - CODEINE, AMINOPHENAZONE, LIVER METABOLISM (8614)*
  - COENZYME PREPARATION, LIVER PATHOLOGY, CLINICAL TRIAL (9054)
  - DIBROMOHYDROXY-QUINOLINE, IODOCHLOROHYDROXY-QUINOLINE, DIARRHEA (9244)
  - DIGITALIS, SIDE EFFECTS, GASTROINTESTINAL BLEEDING (8860)
  - DIROMO, COLITIS, GASTROENTERITIS (9203)
  - D-PENICILLAMINE TREATMENT, CHRONIC AGGRESSIVE HEPATITIS, LIVER FUNCTION TESTS (9143)
  - ENTERIC COATING, PROTECTION AGAINST GASTRIC JUICE, ABSORPTION AT SMALL INTESTINAL LEVEL (8567)
  - ENZYMED, DIGESTIVE DISORDERS, ENZYME DEFICIENCIES, HYPOACIDITY (8863)
  - FLAVIASTASE, DYSPEPSIA, GASTROINTESTINAL TRACT DISORDERS (9226)
  - HALOTHANE NARCOSIS, LIVER DAMAGE, SURGERY (9112)
  - INSIDON, GASTROENTEROLOGY, PHARMACOLOGY (9211)
  - METABOLISM, ALCOHOL INTERFERENCE, LIVER FUNCTION (8667)
  - METOCLOPRAMIDE, GASTRIC SECRETION, PHARMACODYNAMICS (8590)
  - METOCLOPRAMIDE, PHARMACOLOGY, GASTROINTESTINAL MOTILITY (8577)
  - NEOMYCIN, MALABSORPTION SYNDROME, METABOLIC DISORDERS (8697)
  - PHENOBARBITAL, HYPERBILIRUBINEMIA, RAT (8679)
  - PREDNISONE THERAPY, CHOLESTASIS, VIRAL HEPATITIS, CHILDREN (9124)
  - PROPAXOLINE THERAPY, GASTRODUODENAL INFLAMMATION, RADIOLOGY, ENDOSCOPY (8843)
  - QUINOLINE DERIVATIVES, INTESTINAL FLORA, MAN (9253)
  - RIFAMPICIN, LIVER FUNCTION, BILIRUBIN (9089)
  - SULFONAMIDE THERAPY, SHIGHELLA SONNEI INFECTIONS, ADULTS (9248)
  - SULPIRIDE, GASTROINTESTINAL PATHOLOGY, CLINICAL EXPERIENCE (9221)
  - THERAPY, ALPHA-LIPOIC ACID, ENDOCRINE CONTRACEPTIVES, LIVER DAMAGE (9109)
  - THERAPY, SULPIRIDE, ANTICHOLINERGIC DRUGS, GASTRIC ULCER, GASTRIC EMPTYING (8887)
  - THERAPY, SULPIRIDE, GASTRIC ULCER, CLINICAL USE (8888)
  - TREATMENT, N(2'-CHLORO-4'-NITROPHENYL) 5-CHLOROSALICYLAMIDE TRICHOCEPHALOSIS (9267)
- DUODENUM
  - CROHN'S DISEASE, HYPOTONIC DUODENOGRAPHY, RADIOLOGY (8926)
  - DIAGNOSIS, THERAPY, LITERATURE, REVIEW (8830)*
  - DIVERTICULA, SURGERY, PEPTIC ULCER (8859)
  - FUNDIC MUCOSA, HISTOPATHOLOGY, GASTRIC ULCER, HIATAL HERNIA (8831)
  - HYPOTONIC DUODENOGRAPHY, INDICATIONS,

  - CONTRAST MEDIA (8762)
  - MUCOSA, MICROSCOPY, MALABSORPTION, DIFFERENTIAL DIAGNOSIS (8740)
  - RARE LESIONS, CROHN'S DISEASE, RADIOLOGY, ANATOMOPATHOLOGY (8873)
  - VARICES, RADIOLOGY, DIFFERENTIAL DIAGNOSIS (8759)
- DYSENTERY
  - BACILLARY, KANENDOMYCIN THERAPY, RECTOSCOPY, ADULTS, CHILDREN (9243)
- DYSPEPSIA
  - FLAVIASASE THERAPY, HEPATOBILIARY TRACT DISEASES (9226)
  - RECURRENT INVAGINATIONS, DIAGNOSIS, CHILDREN (8911)
- DYSPHAGIA
  - DIAGNOSIS, PHYSIOPATHOLOGY, ADULT (8776)
- ECHINOCOCCOSIS
  - HYDATID CYST, TRANSMISSION (9261)*
- ELECTROLYTE
  - CHLORIDES, POTASSIUM, SODIUM, FLUID LOSS, UPPER GASTROINTESTINAL TRACT (8868)
  - SODIUM, POTASSIUM, INTESTINAL, BULLFROG (8553)*
- ENCEPHALOPATHY
  - LIVER, CIRRHOSIS, CHRONIC AGGRESSIVE HEPATITIS, LACTULOSE THERAPY (9166)
- ENDOMETRIOSIS
  - LARGE INTESTINE, MORPHOLOGY, SYMPTOMATOLOGY (8981)
- ENDOSCOPY
  - GASTRIC ULCER, HEALIC PROCESS, GASTROCINEMATOGRAPHY (8891)
- ENTERITIS
  - DIAGNOSIS, CHARACTERISTIC, H-ANTIGEN, IMMUNOFLUORESCENCE, SYMPTOMATOLOGY (8722)
  - DIAGNOSIS, IMMUNOFLUORESCENCE, CHARACTERISTIC, H-ANTIGEN, EPIDEMIOLOGY (8723)
  - ETIOLOGY, ADENOVIRUS TYPE 2, CHILDREN (9205)
- ENTEROPATHY
  - STAPHYLOCOCCUS, PASTRY CREAM POISONING, EPIDEMIC (9229)
- ENZYME
  - ACID HYDROLASE, SERUM LIVER, MUCOPOLYSACCHARIDOSIS I AND III (9078)
  - ACID PHOSPHATASE, RAT LIVER, ACTIVE CENTER (8526)
  - ALKALINE DEOXYRIBONUCLEASE, REGENERATING LIVER (8643)
  - ALKALINE PHOSPHATASE, SERUM, GALLBLADDER, COMMON DUCT BILE (9187)
  - AMYLASE, AUTOMATED DETERMINATION (8729)
  - AMYLASE, PANCREAS, LIVER, SERUM, FETAL RAT (8601)
  - ATP-D-GLYCERALDEHYDE-3-PHOSPHOTRANSFERASE, LIVER AT VARIOUS AGES, RAT (8533)
  - FATTY ACID SYNTHETASE, FATTY ACID BIOSYNTHESIS, RAT, LIVER (8609)*
  - GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, INBORN ERROR OF METABOLISM, LIVER ANOMALIES, DIGESTIVE DISORDERS (9091)
  - GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE. CONGENITAL LACK, GALACTOSEMIA, SIBLINGS (9067)
  - LACTATE DEHYDROGENASE, GASTRIC MUCOSA, JEJUNAL MUCOSA, SHEEP (8528)
  - LACTATE DEHYDROGENASE SUBUNITS, LIVER, PLASMA, VIRAL HEPATITIS (9010)
  - LYSOSOMAL HYDROLASES, LIVER, NUCLEI, RAT (8518)
  - MICROSOMAL, CHOLINEPHOSPHOTRANSFERASE, ETHANOLAMINEPHOSPHOTRANSFERASE, DIACYLGLYCEROL ACYLTRANSFERASE (8646)
  - ORNITHINE AMINOTRANSFERASE, RAT LIVER, KIDNEY, INTESTINE (8527)
  - OXYDASE, TRANSAMINASE, DEHYDROGENASE, LIVER (8364)*
  - PANCREATIC LIPASE, SUBSTRATE SPECIFICITY, FATTY ACID (8504)*
  - PHOSPHODIESTERASE I, INTESTINAL MUCOSA, MICROSOMES (8692)
  - PROTEASE, LIVER, HISTAMINE (8659)
  - PROTEASES, STOMACH, PATHOLOGY (8529)
  - PSEUDOCHOLINESTERASE, HEPATECTOMY, SEX HORMONE (8622)*
  - RENNIN, LOCALIZATION, STOMACH, CALF, IMMUNOFLUORESCENCE (8507)*
  - RIBONUCLEOTIDE REDUCTASE, HEPATOMA, GROWTH RATE (8636)*
  - ROLE, CONGENITAL HYPERBILIRUBINEMIA (9060)
  - SERUM TRANSAMINASES, CONVALESCENCE, VIRAL HEPATITIS, CHILDREN (9135)
  - 3'-PHOSPHOADENYLYLSULFATE STEROID SULFOTRANSFERASE, LIVER, MAN (8532)
  - TRANSAMINASES, LIVER, RIFAMPICIN (9090)
  - TRANSAMINASES, LIVER NECROSIS, VIRAL HEPATITIS (9126)
  - TYROSINE ALPHA-KETOGLUTARATE TRANSAMINASE, KETONE BODIES (8664)
  - UDP-GLUCURONYL TRANSFERASE, BETA-GLUCURONIDASE, PHENOBARBITAL, CHOLESTASIS (8631)*
  - XANTHINE DEHYDROGENASE, LIVER, KIDNEY, STARVATION (8625)*
- EPIDEMIOLOGY
  - ANORECTAL BLENORRHAGIA, NOSOLOGY, ETIOLOGY (8983)
  - ANORECTAL, VENEREAL DISEASE, PROCTOLOGY, DETECTION (8982)
  - CHRONIC PANCREATITIS, ETIOLOGY, NUTRITION, ALCOHOL (9020)
  - CHRONIC PANCREATITIS, PATHOGENESIS, ETIOLOGY (9023)
  - GASTRODUODENAL ULCER, DETECTION, YOUNG ADULTS (8895)
  - PARATYPHOID FEVER, CARRIERS, SCHLESWIG-HOLSTEIN (9247)
  - SALMONELLA THOMPSON, POULTRY, INFECTIOUS RESERVOIR (9245)
  - TAENIARHYNCHUS SAGINATUS, KARL MARX CITY (9292)
  - VIRAL HEPATITIS, SYMPTOMATOLOGY, CHILDREN (9137)
- EPITHELIUM
  - COLON, PROLIFERATION KINETICS, CRYPTS (8510)*
- ESOPHAGITIS
  - PEPTIC, FUNDOPLICATION, ENDOSCOPY, CLINICAL DATA (8798)
- ESOPHAGUS
  - ACHALASIA, SURGERY, RADIOGRAPHY (8822)
  - ACHALASIA, THERAPY, EVALUATION (8823)
  - ATRESIA, ASSOCIATED MALFORMATIONS, SURGERY, PROGNOSIS (8803)

  - ATRESIA, COLON TRANSPLANT, ESOPHAGEAL REPAIR (8811)
  - ATRESIA, END-TO-END ANASTOMOSIS, ELONGATION OF SHORT SEGMENT (8821)
  - ATRESIA, MEMBRANOUS STENOSIS, THERAPY, ANATOMOPATHOLOGY (8801)
  - ATRESIA, PEPTIC STENOSIS, SURGERY, INFANTS, CHILDREN (8793)
  - ATRESIA, SURGERY, MORTALITY (8802)
  - ATRESIA, VARICES, COLON REPLACEMENT, CHILDREN (8809)
  - BENIGN TUMOR, RADIOLOGY, HISTOPATHOLOGY (8824)
  - CANCER, COBALT TELECURIETHERAPY (8804)
  - CANCER, RADIOTHERAPY, SURVIVAL RATE (8800)
  - CARDIAL FUNCTION, RADIOLOGY, INFANTS (8728)
  - CARDIAL SPASM, GASTRIC VAGOTOMY, ESOPHAGEAL ENLARGEMENT (8858)
  - CONGENITAL STENOSIS, ANATOMOPATHOLOGY, THERAPY (8810)
  - CONGENITAL STENOSIS, FISTULA, INFANTS (8796)
  - DIVERTICULUM, SURGERY, MORPHOLOGY (8814)
  - FISTULA, ANATOMOPATHOLOGY, DIAGNOSIS (8806)
  - FOREIGN BODIES, DIAGNOSIS, THERAPY (8816)
  - FOREIGN BODIES, LESIONS, THERAPY, CHILDREN (8813)
  - HIATAL HERNIA, SURGERY, ANATOMOPATHOLOGY (8799)
  - LOWER, CYLINDRICAL METAPLASIA, PHYSIOPATHOLOGY, ANATOMOPATHOLOGY (8797)
  - MEGA-, SURGERY, HELLER'S TECHNIQUE, CHILDREN (8795)
  - PEPTIC STENOSIS, ETIOLOGY, PATHOLOGY (8805)
  - PERISTALTIC CONTRACTIONS, INTRALUMINAL PRESSURE MEASUREMENT, ESOPHAGOGASTRIC JUNCTION, MAN (8714)
  - REPAIR, COLON TRANSPLANT, POSTSURGICAL CARE (8826)
  - STENOSIS, BOUGIENAGE, RADIOLOGY (8825)
  - STENOSIS, DYSPHAGIA, CHRONIC PANCREATITIS (9031)
  - STOMACH, COMBINED EFFORT-RUPTURE (8819)
  - TUMORS, CONGENITAL LESIONS, PERFORATION (8808)
  - WALL LESIONS, TRACHEOTOMY (8792)

- ETHANOL
  - LIVER, ENZYMES, RAT (8666)
- FATTY ACID
  - DEFICIENCY, LIVER TRIGLYCERIDE RELEASE (8618)*
  - ESTERS, PANCREATIC LIPASE, SUBSTRATE SPECIFICITY (8504)*
- FECES
  - BLOOD, TEST, AMIDOPYRINE (8704)*
- FISTULA
  - ANUS, PATHOLOGICAL ANATOMY, TREATMENT (8943)
  - ARTERIO-PORTAL, GASTRIC RESECTION, PHYSIOPATHOLOGY (8850)
  - ARTERIO-PORTAL, ETIOLOGY, SULFOBROMOPHTHALEIN CLEARANCE, HEPATIC LESIONS (9084)
  - BILE DUCT, COLONIC, ANATOMOPATHOLOGY, PATHOGENESIS (9175)
  - CHOLECYSTODUODENAL, ASYMPTOMATIC, CHOLECYSTOCHOLEDOCHOLITHIASIS, SPHINCTER OF ODDI, INFLAMMATION (9194)
  - CHOLEDOCHODUODENAL, PYLOROPLASTY, CHOLEDOCHOJEJUNOSTOMY, LIVER SCLEROSIS (9177)
  - ESOPHAGEAL, DIAGNOSIS, ANATOMOPATHOLOGY (8806)
  - GASTRIC, ABSENCE OF ABDOMINAL WALL, MANAGEMENT (8832)
  - PANCREATIC, BICARBONATE RESPONSE, DUODENAL ACIDIFICATION (8552)*
  - SMALL AND LARGE INTESTINE, SURGERY (9232)
  - SMALL INTESTINE, DIET AND ELECTROLYTE THERAPY, SURGERY (8903)
- GALLBLADDER
  - CANCER, ETIOLOGY, DIAGNOSIS (9173)
  - CHOLECYSTITIS, NONCALCULOUS, ACUTE (9180)
  - CONTRAST MEDIUM, GLUCOSE, BILE DUCT (8710)*
  - DOUBLE, LITHIASIS, SURGERY, RADIOGRAPHY (9174)
  - FUNCTION, MORPHOLOGY, RADIOLOGY (8756)
  - FUNCTIONAL ALTERATIONS, SPHINCTEROTOMY SPHINCTER OF ODDI (8576)
  - HYPERPLASIA, CHOLESTEROL ACCUMULATION, MORPHOLOGY (9196)
  - LITHIASIS, LESIONS, HISTOLOGY, MOUSE (9192)
  - NECK, SOLITARY GALLSTONE, RADIOGRAPHY (9190)
  - OBSTRUCTIVE JAUNDICE, ANGIOGRAPHY, DILATATION (8703)*
  - SIPHON, ANATOMOPATHOLOGY, SURGERY (9188)
- GALLSTONE
  - COMMON DUCT, NONOBSTRUCTIVE DILATATION (9185)
- GASTRECTOMY
  - BILLROTH II, GASTRIC LYMPHOGRANULOMATOSIS, RADIOLOGY (8845)
  - PEPTIC ULCER, INTRAPERITONEAL PERFORATION, ANATOMOPATHOLOGY (8889)
  - ULCER, GASTRIC STUMP, PRIMARY CANCER (8872)
- GASTRIC ACID
  - CHOLINERGIC STIMULATION, SECRETIN (8580)*
- GASTRIC DISEASE
  - ULCER, PERNICIOUS ANEMIA, ABSORPTION, CEPHALEXIN (8835)
- GASTRIC FUNCTION
  - GASTRIC BIOPSY, MORPHOLOGY, GASTRITIS (8766)
- GASTRIC JUICE
  - ALCIAN BLUE, BINDING ULCERS, CARCINOM (8879)*
  - PEPSIN, ENZYME, ALKALI INACTIVATION (8583)*
- GASTRIN
  - ACETYLCHOLINE STIMULATION, SERUM LEVELS, THORACIC DUCT LYMPH (8582)*
  - TETRAPEPTIDE, ANTIGEN, SERUM CARRIER PROTEIN (8506)*
- GASTRITIS
  - ACUTE, VIRAL HEPATITIS, GASTRIC MUCOS GASTRIC SECRETION (9136)
  - CHRONIC, GASTRIC MUCOSA, BIOPSY, ACID

- CELL ANTIBODIES (8844)
- CHRONIC, GASTRIC SUCTION BIOPSY, IMMUNOGLOBULIN RELATIONSHIPS, GASTRIC MUCOSA (8839)
- CHRONIC, GASTRIC ULCER, GASTRIC NEOPLASMS, ENDOSCOPY, RADIOLOGY (8789)
- GASTRIC EROSION, DIAGNOSIS, HEMORRHAGE (8742)

GASTRODUODENAL BLEEDING
- DRUG INDUCED, ACETYLESALICYLIC ACID, PHENYLBUTAZONE (8866)

GASTROENTERITIS
- FUNCTIONAL DISORDERS, VERTEBRAL COLUMN MAN (9207)

GASTROENTEROLOGY
- INSIDON, PHARMACOLOGY (9211)

GASTROINTESTINAL BLEEDING
- ACUTE CIRCULATORY INSUFFICIENCY, THERAPY, ANATOMOPATHOLOGY (9230)
- RESPIRATORY DISTRESS, ANATOMOPATHOLOGY, THERAPY, PROGNOSIS (9228)

GASTROINTESTINAL DISEASE
- ACRODERMATITIS, ENTEROHEPATICA, CHRONIC DIARRHEA, ETIOLOGY (9213)
- ULCERATIVE COLITIS, PROGNOSIS (8988)•

GASTROINTESTINAL TRACT
- EMPTYING, BACILLUS SUBTILIS, MOUSE (9220)
- FUNCTION, COPROLOGICAL INVESTIGATION, DIETARY APPLICATION (8770)
- FUNCTIONAL DISORDERS, VERTEBRAL COLUMN, MAN (9207)
- HEMORRHAGE, DIFFERENTIAL DIAGNOSIS, INTESTINAL CONTRACTIONS, HISTOLOGY (8781)
- HEMORRHAGE, TREATMENT (9234)
- LESIONS, IRRADIATION, CANCER OF CERVIX (9200)•
- MYOGRAPHY, LAPAROSCOPY, MAN (8578)
- NON-LIVER DISEASES, GASTRIC CARCINOMA, LIVER MORPHOLOGY (8538)
- PATHOLOGY, SULPIRIDE, CLINICAL EXPERIENCE (9221)
- PERFORATIONS, ACUTE ABDOMEN, MORTALITY RATE (9241)
- RADIOGRAPHY, BARIUM SULFATE CONTRAST MEDIA, PHYSICOCHEMICAL EVALUATION (8726)
- REABSORPTION, DISTRIBUTION, CARDIAC GLYCOSIDES (8566)
- SAMPLING OF CONTENT, REMOTE CONTROL PILLS, DIAGNOSTIC PROCEDURE (8731)
- UPPER, FLUID LOSS, ELECTROLYTE DEPLETION, MEASUREMENTS (8868)

GASTROSCOPY
- BENIGN LESIONS, LAPAROTOMY, DIAGNOSIS (8709)•
- GASTRIC LEIOMYOSARCOMA, CELIAC ANGIOGRAM, SURGERY (8837)

GASTROSTOMY
- OPENING TREATMENT, TECHNIQUE (8864)

GLUCAGON
- RAT LIVER, LYSOSOMAL ENZYMES, TRIGLYCERIDE (8509)•

GLUCOCORTICOID
- PREDNISONE, THERAPY, CHOLESTASIS, VIRAL HEPATITIS (9124)

GLUCONEOGENESIS
- PERFUSED LIVER, ACETYLCHOLINE, RAT (8665)
- PERFUSED LIVER, HYPOPHYSECTOMY, STIMULATION (8672)

GLYCOGEN
- AMYLOPECTINOSIS, ULTRASTRUCTURE (9059)

GLYCOGENESIS
- ALPHA-METHYLTRYPTOPHAN, PROTEIN SYNTHESIS INHIBITION (8645)

GLYCOLYSIS
- LIVER, REGULATION, KEY ENZYMES (8663)

GRANULOMATOSIS
- LIVER, HISTOPATHOLOGY, CLINICAL FEATURES (9105)

HEMATEMESIS
- EMERGENCY ANGIOGRAPHY, LIVER, CIRRHOSIS, PEPTIC ULCER (8735)

HEMATOMA
- INTESTINAL OBSTRUCTION, ANTICOAGULANTS (8898)

HEMORRHAGE
- ACUTE ABDOMEN, LEUCOCYTOSIS, METABOLIC DISORDERS (9239)
- GASTRIC EROSIONS, GASTRITIS, DIAGNOSIS (8742)
- GASTROINTESTINAL, RESPIRATORY DISTRESS ANATOMOPATHOLOGY, THERAPY (9228)
- GASTROINTESTINAL, TREATMENT (9234)
- HEPATIC ARTERY, RUPTURED ANEURYSM (9209)
- INTESTINE, STOMACH, DIGITALIS INTOXICATION (8860)
- PERFORATION, GASTRIC ULCER, DUODENAL ULCER, ATYPICAL FORMS (8885)
- POST-GASTRECTOMY (8865)
- POSTOPERATIVE STRESS ULCERS, DUODENUM, DIAGNOSIS (8883)
- PYLORUS, ANTRUM, HETEROTOPIC PANCREAS (9005)
- STOMACH, DUODENUM, VASOACTIVE AGENTS (8877)

HEMORRHOID
- ETIOLOGY, PATHOGENESIS, THERAPY (8952)
- LIGATURE, INDICATIONS, NODULAR (8959)
- RESECTION, IMPROVED TECHNIQUES (8955)

HEPATECTOMY
- PARTIAL, LIVER REGENERATION, MITOTIC INDEX, CIRCADIAN RHYTHM, RAT (8652)
- PSEUDOCHOLINESTERASE ACTIVITY, SEX HORMONES (8622)•

HEPATITIS
- ACUTE, CHRONIC, SERUM FREE AND ESTERIFIED FATTY ACIDS, SPECTROPHOTOMETRICAL COMPARISONS (9144)
- ACUTE, HEPATIC COMA, ACUTE YELLOW LIVER ATROPHY, ENCEPHALOPATHY (9102)
- AMEBIC, DIAGNOSIS, INDIRECT IMMUNOFLUORESCENCE REACTION, LIVER SCINTIGRAPHY (9290)
- ANICTERIC, VIRAL, HEMODIALYSIS (9129)
- ANTIGEN, BLOOD DONOR, POST-TRANSFUSION (9115)•
- ANTILYMPHOCYTE GLOBULIN EFFECT, HISTOLOGY, MOUSE, LIVER (9097)
- CHRONIC, AGGRESSIVE, THERAPY, D-PENICILLAMINE, LIVER FUNCTION TESTS (9743)
- CHRONIC, ANATOMOPATHOLOGY, CLASSIFICATION, AGGRESSIVE, PERSISTENT (9146)
- CHRONIC, CIRRHOSIS, LIVER MANAGEMENT (9147)
- CHRONIC, CIRRHOSIS, PATHOGENESIS, ETIOLOGY (9149)

  - CHRONIC, PATHOGENESIS, SYMPTOMATOLOGY, THERAPY (9148)
  - CHRONIC, THERAPY, AZOTHIOPRIN (9145)
  - CHRONIC, THOROTRAST, LIVER MORPHOLOGY, PATHOLOGY (9052)
  - GIGANTOBLASTIC, GALACTOSAMINE, PREGNANT RAT, BABY RAT, LIVER, MORPHOLOGY (9104)
  - GRANULOMATOUS, LIVER SARCOIDOSIS, ETIOLOGY, HISTOPATHOLOGY (9106)
  - INFECTIOUS, EPIDEMIC, IMMUNOGLOBULIN, CHILDREN (9140)
  - INFECTIOUS MONONUCLEOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS, LIVER HISTOPATHOLOGY (9123)
  - NON-VIRAL, ACUTE, TRAUMA (9107)
  - SCLEROSING, ALCOHOLISM, LIVER FIBROSIS MESENCYMAL CELL (9057)
  - SERUM, PATIENTS, PROFESSIONAL RISK (9122)
  - SERUM IMMUNOGLOBULINS, ALCOHOLISM, LIVER HISTOPATHOLOGY (9101)
  - VIRAL, ALKALINE PHOSPHATASE, MAC LAGAN TEST, DIFFERENTIAL DIAGNOSIS, NON-INFECTIOUS CHOLESTATIC JAUNDICE (8749)
  - VIRAL, ANABOLIC STEROIDS, STANOZOLOLE, CHILDREN (9127)
  - VIRAL, AUSTRALIA ANTIGEN, CHILE, INCIDENCE (9119)
  - VIRAL, AUSTRALIA ANTIGEN, HEMODIALYSIS CENTER (9118)
  - VIRAL, AUSTRALIA ANTIGEN, HEPATOPATHOLOGY, SYSTEMIC DISEASES (9139)
  - VIRAL, AUSTRALIA ANTIGEN, INCIDENCE, LIVER DISEASES (9141)
  - VIRAL, AUSTRALIA ANTIGEN, INCIDENCE, SICILY (9138)
  - VIRAL, AUSTRALIA ANTIGEN, PERIARTERITIS NODOSA, LIVER, HISTOPATHOLOGY (9121)
  - VIRAL, AUSTRALIA ANTIGEN, TRANSFUSION PATIENTS, LIVER DISEASES (9119)
  - VIRAL, BLOOD TRANSFUSION, PROPHYLAXIS, AUSTRALIA ANTIGEN (9125)
  - VIRAL, BONE MARROW INSUFFICIENCY, CHRONIC JAUNDICE, PANCYTOPENIA (9131)
  - VIRAL, BONE MARROW PROLIFERATION, CHILDREN (9130)
  - VIRAL, CELLULAR IMMUNITY, HUMORAL IMMUNITY, PROGNOSIS (9133)
  - VIRAL, CHOLESTASIS, PREDNISONE THERAPY CHILDREN (9124)
  - VIRAL, CHRONIC, LIVER, CIRRHOSIS, ANTIGLOBULIN CONSUMPTION TEST (9050)
  - VIRAL, CONVALESCENCE, SERUM TRANSAMINASES, CHILDREN (9135)
  - VIRAL, EPIDEMIOLOGY, SYMPTOMATOLOGY, CHILDREN (9137)
  - VIRAL, GASTRITIS, GASTRIC MUCOSA, GASTRIC SECRETION (9136)
  - VIRAL, HISTORY, PREGNANT WOMEN, SULFOBROMOPHTHALEIN CLEARANCE (9142)
  - VIRAL, HUMORAL AND CELLULAR IMMUNITY, CHRONIC HEPATITIS (9117)
  - VIRAL, IMMUNOGLOBULINS, CORTISONE TREATMENT, CHILDREN (9134)
  - VIRAL, INFECTIOUS MONONUCLEOSIS TEST, AUSTRALIA ANTIGEN TEST, LIVER DISEASES (8767)
  - VIRAL, NECROTIC LIVER COMA, ETIOLOGY, SYMPTOMATOLOGY (9053)
  - VIRAL, THERAPY, LIVER (9128)
  - VIRAL, TRANSAMINASES, DEVELOPMENTAL COURSE, CHRONIC HEPATITIS (9126)

- HEPATOMA
  - ASCITES TRANSPLANT, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (8684)
  - B-PROPIOLACTONE, SUCKLING MICE (8637)*
  - RIBONUCLEOTIDE REDUCTASE, TUMOR GROWTH RATE (8636)*
- HERNIA
  - BOWEL, REPAIR, IRREDUCIBLE (8904)
  - HIATAL, ESOPHAGEAL, PEPTIC ULCER, LUNG, PERFORATION (8815)
  - HIATAL, FUNDOPLICATION, GASTROESOPHAGEAL, SPHINCTER FUNCTION, MANOMETRY (8817)
  - HIATAL, GASTROESOPHAGEAL REFLUX, ESOPHAGITIS, GASTROPEXIA (8818)
  - HIATAL, SURGERY, ANATOMOPATHOLOGY, ADULTS (8799)
  - HIATAL, SURGERY, VAGOTOMY, GASTRIC ACIDITY (8807)
  - INTESTINE, INCARCERATED FORAMEN OF WINSLOW (8974)
  - TRANSVERSE COLON, RADIOLOGY, ANATOMOPATHOLOGY (8949)
- HIRSCHSPRUNG'S DISEASE
  - CONGENITAL MEGACOLON, SURGERY, FUNCTIONAL RESULTS (8950)
  - EARLY DIAGNOSIS, CONGENITAL AGANGLIONIC MEGACOLON, COLOSTOMY (8961)
  - PRIMARY MEGARECTUM, SURGERY, CHILDREN (8966)
- HISTAMINE
  - GASTRIC SECRETION, BETAZOLE HYDROCHLORIDE (8878)
- HISTOCHEMISTRY
  - AUTORADIOGRAPHY, FREE PHOSPHATE, LIVER PARENCHYMA, RAT (8521)
  - GASTRIC MUCOSA, CARBONIC ANHYDRASE, RAT (8589)
- HISTOLOGY
  - GASTRIC MUCOSA, GASTRIC HYPOACIDITY, RHEUMATOID ARTHRITIS (8537)
  - IDIOPATHIC ULCERATIVE COLITIS, HEMORRHAGE, ENDOSCOPY (8994)
  - LIVER, FETAL AND ADULT STAGE, MAN (8535)
  - LIVER ALTERATIONS, ENDOCRINE DISORDER, RAT (8536)
- HISTOPHYSIOLOGY
  - INTESTINAL MUCOSA, INTESTINAL ABSORPTION (8568)
- HORMONE
  - CORTISOL, LIVER GLUCONEOGENESIS, TRANSAMINASES (9046)
  - GLUCAGON, PENTAGASTRIN, HISTAMINE, GASTRIC SECRETION (8595)
  - PANCREOZYMIN, CALCIUM EXCRETION, DOG PANCREAS (8602)
  - PENTAGASTRIN INACTIVATION, HUMAN SERUM LIVER HOMOGENATE, RAT (8596)
  - PROSTAGLANDIN E., GASTRIC SECRETION, MAN (8581)*
- HYDATID CYST
  - ECHINOCOCCUS GRANULOMOUS, TRANSMISSION (9261)*
  - LIVER, OBSTRUCTIVE JAUNDICE, CYST PERFORATION (9276)

- HYDROCARBON
  - SATURATED, DROPLETS, LIVER, SPLEEN (8523)
- HYPERBILIRUBINEMIA
  - CONGENITAL, ENZYME DEFECT (9060)
- HYPERPLASIA
  - GALLBLADDER, CHOLESTEROL ACCUMULATION, MORPHOLOGY (9196)
- ILEITIS
  - REGIONAL, ETIOLOGY, PATHOGENESIS, THERAPY (8889)
  - TERMINAL, TAKAYASU DISEASE, CROHN'S DISEASE, VASCULAR LESIONS (8924)
- ILEUM
  - MOTILITY, ESTROGEN, ANTIGENS (8574)
  - PERFORATION, TYPHOID, SURGERY (8902)
- ILEUS
  - ARTERIOMESENTERIAL INTESTINAL OCCLUSION, DUODENAL STENOSIS, SURGERY, CHILDREN (9254)
  - MECHANICAL, OBSTRUCTION, BLOOD VOLUME DETERMINATION, MALABSORPTION (9206)
  - MECHANICAL, SYMPTOMATOLOGY, INTESTINAL OCCLUSION THROUGH TUMOR, INTESTINAL STENOSIS (9240)
- IMMUNOGLOBULIN
  - ANTIBODIES, E.COLI, INTESTINAL SECRETION, HEMAGGLUTINATION (8687)•
  - DETERMINATION, LIVER DISEASES, DIFFERENTIAL DIAGNOSIS (8779)
  - VIRAL HEPATITIS, CHILDREN, CORTISONE (9134)
- IMMUNOLOGY
  - ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS (9117)
  - VIRAL HEPATITIS, CELLULAR AND HUMORAL IMMUNITY, PROGNOSIS (9133)
- INFECTION
  - ADENOVIRUS TYPE 2, ENTERITIS, CHILDREN (9205)
  - FOOD POISONING, SALMONELLOSIS, HYGIENE (9236)
  - INTESTINAL VIRUS, CHILDREN, JAPAN (9217)
- INFLAMMATION
  - GASTRODUODENAL, PROPAXOLINE THERAPY, RADIOLOGY, ENDOSCOPY (8843)
  - MESENTERY, X-RAY DIAGNOSIS, THERAPY (9219)
- INTESTINE
  - ABSORPTION, CALCIUM, PHOSPHORUS, INTRAVENOUS INFUSION, PIG (8571)
  - ABSORPTION, HISTOPHYSIOLOGY, EXPLORATION, CLINICAL TESTS (8568)
  - AMEBIASIS, EPIDEMIOLOGY, FRANCE (9264)
  - EPITHELIAL AUTOLYSIS, ACTINOMYCIN D, RAT (8690)•
  - EPITHELIAL CELL, BRUSH BORDER MEMBRANES, GUINEA PIG (8508)•
  - EXTERNAL FISTULAS, SURGERY (9232)
  - FLORA, CLOSTRIDUM PERFRINGENS, SEROTYPE (8695)•
  - FLORA, QUINOLINE DERIVATIVES, MAN (9253)
  - FUNCTION, FASTING, BILE SALT, CALCIUM, NITROGEN (8630)•
  - HERNIA, IRREDUCIBLE, REPAIR (8904)
  - ILEUM, COLON, MICROFLORA ALTERATIONS, ANTIBIOTIC TREATMENT (9224)
  - INVASIVE ENDOMETRIOSIS (8969)
  - LIEBERKUHN'S CRYPTS, MITOSIS, INTESTINAL MICROFLORA (8694)
  - LIPID, ABSORPTION, LACTASE ACTIVITY, SIMULTANEOUS DETERMINATION, PATHOLOGY (8933)
  - MALABSORPTION, COW MILK INTOLERANCE, CHILDREN (8939)
  - MALABSORPTION, LYMPHANGECTASIA, CONGENITAL LYMPHEDEMA, CHRONIC STEATORRHEA (8936)
  - MUCOSA, ENDOTHELIAL VESICLES, CELL JUNCTIONS (8508)•
  - MUCOSA, FATTY ACID PATTERN, MAN (8691)
  - OBSTRUCTION, CARDIAC PATIENT, SURGERY (9210)
  - OBSTRUCTION, HEMATOMA, ANTICOAGULANTS (8898)
  - OCCLUSION, SIGMOID ENDOMETRIOSIS, CLINICAL FEATURES (8964)
  - OCCLUSION, STENOSIS, MECHANICAL ILEUS (9240)
  - OCCLUSION, SURGERY, INFANTS (9212)
  - PANETH CELLS, DISTRIBUTION, RABBIT, HAMSTER (8517)
  - TRANSPLANT, REJECTION, PHYSIOPATHOLOGY (8958)
  - TUBERCULOSIS, BIOPSY, CHILD (9249)
  - ULCERATIVE COLITIS, REGIONAL ENTERITIS (8989)
  - UPPER, HEMORRHAGE, TREATMENT, BLOOD TRANSFUSION (9231)
  - VIRAL INFECTIONS, EPIDEMIOLOGY, CHILDREN, JAPAN (9217)
- INTESTINE, LARGE
  - ANORECTAL BLENORRHAGIA, NOSOLOGY, INCIDENCE, ETIOLOGY (8983)
  - ANORECTAL MELANOMA, ANATOMOPATHOLOGY, HISTOPATHOLOGY (8980)
  - ANUS, PRIMARY AND SECONDARY SYPHILIS, DIAGNOSIS (8984)
  - CECUM, SUBMUCOSAL LIPOMA, ANATOMOPATHOLOGY (8962)
  - ENDOMETRIOSIS, MORPHOLOGY, CLINCIAL SYMPTOMATOLOGY (8981)
  - HERNIA, IRREDUCIBLE, WINSLOW FORAMEN (8974)
  - INTRARECTAL TUMOR, ARTERIOGRAPHY, SURGERY (8953)
  - PRIMARY MEGARECTUM, HIRSCHSPRUNG'S DISEASE, SURGERY, CHILDREN (8966)
  - RECTAL MUCOSA, CARCINOMATOUS, ISOENZYMES (8940)•
  - RECTO-COLONIC SURGERY, ANASTOMOSIS, GRAFTS (8951)
  - RECTOSIGMOID POLYPOSIS, VILLOUS TUMOR, VILLOUS ADENOMA (8985)
  - SPONTANEOUS PERFORATION, ANATOMOPATHOLOGY, AGE INCIDENCE (8963)
  - SURGERY, PEDIATRIC, CONTINENCE (8972)
  - ULCERATIVE COLITIS, ABO(H)-BLOOD GROUP ANTIBODIES, GASTROINTESTINAL ANTIGENS (8995)
  - ULCERATIVE COLITIS, PROGNOSIS, ASSOCIATED ABNORMALITIES (8987)•
  - VESICOINTESTINAL FISSURE, ANATOMOPATHOLOGY, SURGERY (8978)
- INTESTINE, SMALL
  - ABSORPTION, AZULFIDINE, METABOLIC FATE, EXCRETION (8557)•
  - ABSORPTION, DIABETIC RATS, SUGARS (8554)•
  - ANATOMY, VARIABILITY ACCORDING TO SEX,

JAPAN (8531)
ATRESIA, OMPHALOCELE, GASTROSCHISIS (8840)
BIOPSY, LACTASE ACTIVITY, LIPID ABSORPTION, PATHOLOGY (8933)
BULLFROG EPITHELIUM, SODIUM, POTASSIUM WATER (8553)*
CALCIUM ABSORPTION, VITAMIN D, RICKETS RAT (8555)*
CELIAC DISEASE, DIPEPTIDASE, DISACCHARIDASE (8929)*
CLINICAL ANATOMY, PROJECTION ON FRONT ABDOMINAL WALL, JAPAN (8530)
DISEASES, DIAGNOSIS, ELECTRON MICROSCOPY (9137)
DISEASES, TAUROCHOLATE, ENTERO-HEPATIC CIRCULATION (8896)*
EPITHELIUM, CRYPT, VILLUS, MITOCHONDRIA, ENZYME ACTIVITY (8513)*
FERRITIN SYNTHESIS, IRON, BARRIER (8688)*
FISTULA, SURGERY, NONOPERATIVE THERAPY DIET AND ELECTROLYTES (8903)
FOLIC ACID, MALABSORPTION, POLYGLUTAMATES (8938)
ILEUM, GLYCINE, TRANSPORT (8549)*
ILEUM, RABBIT, BRUSH BORDER, TRANSPORT (8550)*
INDICATOR DILUTION STUDY, MARKER COMPARISON, CHOLERA (8928)*
INFARCT, SUPERIOR MESENTERIC ARTERY, EMBOLECTOMY (9204)
INTRINSIC FACTOR, MALABSORPTION, SKIN DISORDERS, SCHILLING TEST (8935)
INTUSSUSCEPTION, DIAGNOSIS, BARIUM, ORAL, X-RAY (8897)*
JEJUNUM, INDICATOR DILUTION STUDY, ACUTE CHOLERA (9201)*
LEIOMYOMA, MASSIVE MELENA (8910)
MALABSORPTION, LACTASE EFFECT, LACTOSE ABSORPTION (8932)
MALABSORPTION, PERORAL BIOPSY, TOTAL VILLOUS ATROPHY (8712)
MASSIVE RESECTION, CROHN'S DISEASE, PHOSPHORUS AND CALCIUM METABOLISM, DIET (8925)
MASSIVE RESECTION, DIET, MEDICAL TREATMENT (8920)
MASSIVE RESECTION, DRUG THERAPY, DIET (8905)
MASSIVE RESECTION, INDICATIONS, ADULT, CHILDREN (8916)
MASSIVE RESECTION, PHYSIOPATHOLOGY, FUNCTIONAL ADAPTATION (8915)
MASSIVE RESECTION, PHYSIOPATHOLOGY, INTESTINAL MALABSORPTION (8914)
MASSIVE RESECTION, PHYSIOPATHOLOGY, INTESTINAL TRANSIT (8901)
MASSIVE RESECTION, SEQUELAE, SEGMENTAL INVERSION (8917)
MASSIVE RESECTION, SEQUELAE, SURGICAL TREATMENT (8918)
MECKEL'S DIVERTICULUM, FOREIGN BODIES, NEOPLASM (8913)
MUCOSA, ENZYMES, TRIGLYCERIDE SYNTHETASE (8503)*
MUCOSA, GLUCOSAMINE, GLYCOPROTEIN (8686)*
PARALYTIC ILEUS, MYXEDEMA, DISTENTION, CONSTIPATION (8941)*
PERMEABILITY ALTERATIONS, ILEUS, BLOOD VOLUME DETERMINATION (9206)
PNEUMATOSIS CYSTOIDES INTESTINALIS, SYMPTOMATOLOGY, RADIOLOGY, ETIOLOGY (8909)
POSTOPERATIVE INTUSSUSCEPTION, CHILDREN (9233)
RADIOLOGY, DOUBLE CONTRAST, POLYPS, TUMORS (8739)
RECURRENT INVAGINATIONS, DYSPEPSIA, INFANTS, CHILDREN (8911)
SCHWANNOMA, ARTERIOGRAPHY, HISTOLOGY (8907)
SECRETION, IMMUNOGLOBULIN, ANTIBODIES (8687)*
SEGMENTAL INVERSION, MALABSORPTION, PHYSIOPATHOLOGY (8894)
SEGMENTAL INVERSION, PERISTALSIS, RAT (8579)
SURGERY, MASSIVE RESECTION, ABSORPTIVE CAPACITY (8919)
TRANSPORT, CALCIUM, VITAMIN D (8560)*
VOLVULUS, DIVERTICULUM, LEIOMYOFIBROMA (8912)

INTOXICATION
  ALKYLPHOSPHATES, ANTIDOTE THERAPY, LIVER FUNCTION, RAT, RABBIT (9108)

INTUSSUSCEPTION
  SMALL INTESTINE, POSTOPERATIVE, CHILDREN (9233)

IRON
  DUODENAL MUCOSA, INCREASED GASTROINTESTINAL ABSORPTION, THALASSEMIA, CHILDREN (8752)
  FERRITIN SYNTHESIS, EXCRETION, SMALL INTESTINE (8688)*

ISCHEMIA
  REVERSIBLE, COLON, ANGIOGRAPHY (8986)

JAUNDICE
  BILIRUBIN, METABOLISM, LIVER ENZYMES, INBORN ERRORS OF METABOLISM (9049)
  CHRONIC, SCLEROSING CHOLANGITIS, CHOLANGIOGRAPHY, INTRAHEPATIC BILE DUCTS (8605)
  CHRONIC, VIRAL HEPATITIS, BONE MARROW INSUFFICIENCY, PANCYTOPENIA (9131)
  CHRONIC PANCREATITIS, CHOLANGIOGRAPHY, SPLEEN INVOLVEMENT (9030)
  CHRONIC PANCREATITIS, PANCREATICOJEJUNOSTOMY, CHILDREN (9027)
  DIFFERENTIAL DIAGNOSIS, PHOSPHATASEMIA BILIRUBINEMIA, RATIO (8773)
  INTRAHEPATIC CHOLESTASIS, ORAL CONTRACEPTIVES, LIVER SARCOIDOSIS (9075)
  LIVER TRANSPLANT, REJECTION, MAN (9073)
  OBSTRUCTIVE, FATTY ACID COMPOSITION, NEONATE (9170)*
  OBSTRUCTIVE, HYDATIDOSIS, CHOLANGIOGRAPHY (9269)
  OBSTRUCTIVE, PERCUTANEOUS CHOLANGIOGRAPHY, PANCREATIC CARCINOMA, BILE DUCT CARCINOMA (8736)
  PREGNANCY, LIVER FUNCTION, LIVER STEATOSIS (9082)
  VIRAL HEPATITIS, NONINFECTIOUS CHOLESTATIS, DIFFERENTIAL DIAGNOSIS, ALKALINE PHOSPHATASE, MAC LAGAN TEST (8749)

JEJUNUM
  MUCOSA, CYTOCHEMISTRY, MALABSORPTION (8931)
  PRIMARY ADENOCARCINOMA (8900)

LESION

- ESOPHAGEAL, FOREIGN BODY INGESTION, THERAPY, CHILDREN (8813)

IPASE
- SERUM LEVELS, DIAGNOSTIC VALUE, ACUTE PANCREATITIS (9012)

IPID
- BLOOD LEVELS, LIVER PROTECTION, ALPHA-ALPHA-DITHIOCAPRONIC ACID, CALCIUM SALT (9083)
- GASTRIC SECRETION, THIN LAYER, CHROMATOGRAPHY (8593)
- WOLMAN'S DISEASE, LIVER NECROSIS AND FIBROSIS, INTESTINAL MALABSORPTION (9074)

IPID ABSORPTION
- TEST, TRIGLYCERIDE IODATE (LIPIODOL), PREMATURE INFANTS (8775)

IPOPROTEIN
- LIVER SYNTHESIS, FATTY ACID, ACTIMOMYCIN D, PROTEIN (8615)*
- LOW DENSITY, INTESTINAL MUCOSA, BIOSYNTHESIS (8685)*

ITHIASIS
- GALLBLADDER, LESIONS, HISTOLOGY, MOUSE (9192)

IVER
- ACID SOLUBLE MOLECULES, 14C-ADENINE INCORPORATION, IN VIVO, RAT (8534)
- ACUTE YELLOW ATROPHY, COMA, ENCEPHALOPATHY, ACUTE HEPATITIS (9102)
- ALCOHOLIC, CIRRHOSIS, RENAL MEDULLAR NECROSIS, PATHOLOGICAL ASSOCIATION (9168)
- ALTERATIONS, ADENOCARCINOMA OF GALLBLADDER, ANATOMOPATHOLOGY (9048)
- AMEBIASIS, EPIDEMIOLOGY, LAOS (9265)
- AMEBIASIS, METRONIDAZOLE (9260)*
- AMEBIC ABSCESS, CLINICAL STUDY (9273)
- AMEBIC ABSCESS, THERAPY, ANATOMOPATHOLOGY (9266)
- AMYLOPECTINOSIS, ULTRASTRUCTURE (9059)
- ANGIOGRAPHY, METASTASES, CONTRAST MEDIA CONCENTRATIONS (8707)*
- ANICTERIC CIRRHOSIS, SULFOBROMOPHTHALEIN AND CHOLINESTERASE TESTS, CORRELATION (9159)
- ATP-D-GYCERALDEHYDE-3-PHOSPHOTRANSFERASE, NORMAL VALUES AT DIFFERENT AGES, RAT (8533)
- BILE ACID BIOSYNTHESIS, ENTEROHEPATIC CIRCULATION, INTESTINAL ABSORPTION, BILE SALTS (8570)
- BILE DUCTS, SURGERY, DIETARY INDICATIONS, CHILDREN (9064)
- CANCER, SECONDARY, GASTRIC CANCER, ALPHA-FETOPROTEIN (8876)
- CARBOHYDRATES AND RIBONUCLEOTIDES, INTESTINAL MALABSORPTION, COCCIDIOSIS, CHICKEN (9283)
- CARBOHYDRATE OVERLOAD, GLYCOGENOSIS, GALACTOSEMIA, FRUCTOSEMIA (9070)
- CARCINOGENESIS, ADRENALECTOMY, MOUSE (8678)
- CELLS, ULTRASTRUCTURE, ORAL CONTRACEPTIVES (8515)*
- CELLS, ULTRASTRUCTURE, STEROIDS, PREGNANCY, TROPHOBLASTIC GROWTHS (8514)*
- CELL ALTERATIONS, LEAD POISONING, MAN (9103)
- CELL POLYPLOIDY, SERUM FACTORS, INFLAMMATORY FACTORS, RAT (8520)
- CHEMICAL CARCINOGENESIS, PRECANCEROUS STAGE, MORPHOLOGY (8683)
- CHOLESTEROL BIOSYNTHESIS, 4,4-DIMETHYL STEROL OXIDATION, MICROSOMES (8649)
- CHROMATIN TEMPLATE, METHYLCHOLANTHRENE PHENOBARBITAL (8612)*
- CHRONIC DAMAGE, CIRRHOSIS, PATHOGENESIS (9149)
- CHRONIC DISEASES, BONE MARROW FUNCTION LEUCOCYTIC RESISTANCE (9156)
- CHRONIC DISEASES, VITAMIN B12, E,K, TOTAL LIVER EXTRACT, TUBERCULOSIS (9066)
- CIRCULATION, XENON 133 CLEARANCE (8745)
- CIRRHOSIS, ANTIBIOTIC TREATMENT, AMMONIEMIA (9165)
- CIRRHOSIS, ASCITES, MANAGEMENT (8647)
- CIRRHOSIS, CHRONIC HEPATITIS, SERUM COMPLEMENT (9044)
- CIRRHOSIS, DIAGNOSIS, SELENIUM 75-METHIONINE (8706)*
- CIRRHOSIS, ENCEPHALOPATHY, LACTULOSE THERAPY (9166)
- CIRRHOSIS, FAMILIAL, IMMUNOGLOBULIN, AUTOIMMUNE FEATURES (9150)*
- CIRRHOSIS, GLYCOGENOSIS, DIFFERENTIAL DIAGNOSIS (8753)
- CIRRHOSIS, INTESTINAL ABSORPTION, AMMONIUM CHLORIDE (9162)
- CIRRHOSIS, PARTIAL HEPATECTOMY, HUMAN (9161)
- CIRRHOSIS, PITUITARY AND ADRENAL FUNCTION, PLASMA, CORTISOL BREAKDOWN (9160)
- CIRRHOSIS, PORTACAVAL SHUNT, CIRCULATORY COMPLICATIONS (9085)
- CIRRHOSIS, PORTAL HYPERTENSION, ILEAL VARICES, HEMORRHAGE (9155)
- CIRRHOSIS, PRIMARY CARCINOMA, SURGERY (9151)*
- CIRRHOSIS, PROGNOSIS, THERAPY (9163)
- CIRRHOSIS, RIGHT-SIDED HYDROTHORAX, PATHOGENESIS (9167)
- CIRRHOSIS, SERUM PROTEINS, BIDIMENSIONAL ELECTROPHORESIS (9169)
- COMA, ETIOLOGY, VIRAL HEPATITIS (9053)
- COMMON ARTERY, STENOSIS, MUSCULAR HYPERPLASIA (9223)
- DAMAGE, DRUG INDUCED, CHLOROFORM, MERCURY, GOLD (9100)
- DAMAGE, ENDOCRINE CONTRACEPTIVES, THERAPY (9109)
- DAMAGE, EPIDERMOLYSIS ACUTA TOXICA, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (9098)
- DARK CELL, MICROSCOPY (8522)
- DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, CIRRHOSIS (9040)*
- DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, RADIOISOTOPIC MEASUREMENT (8784)
- DIAGNOSIS, PATHOLOGY, BLOOD AMMONIA LEVELS (8724)
- DISEASES, CELLULAR IMMUNITY, ANTIGEN STIMULATION OF LYMPHOCYTES, IN VITRO (9065)
- DISEASES, CLINICAL, CHEMICAL DATA, DIFFERENTIAL DIAGNOSIS (8780)
- DISEASES, HEPATITIS-INFECTIOUS MONONUCLEOSIS TEST, AUSTRALIA ANTIGEN

TEST (8767)
DISEASES, IMMUNOGLOBULINS, DIFFERENTIAL DIAGNOSIS (8779)
ENTEROHEPATIC RECIRCULATION, TAUROCHOLATE, SMALL INTESTINAL DISEASES (8896)•
ENZYMES, ALCOHOL, RAT (8666)
ENZYMES, LYSOSOMES, GLUCAGON, KETOGENESIS (8509)•
ETHANOL-INDUCED INJURY, GLUTATHIONE, LIPID PEROXIDATION (8638)•
ETHANOL METABOLISM, OXYGEN CONSUMPTION, BLOOD (8660)
EXPERIMENTAL STEATOSIS, CHOLINE, OROTATE, RAT (8682)
EXTRACT WITH B12, E,K, PROTECTIVE EFFECT, LIVER DISEASES, TUBERCULOSIS (9066)
FASTED, ACID-STABLE RIBONUCLEASE (8657)
FASTING, LYSOSOMES, REGRESSION (8620)•
FATTY ACID, NEONATE, OBSTRUCTIVE JAUNDICE (9770)•
FATTY ACID DEFICIENCY, TRIGLYCERIDE RELEASE, PERFUSED (8618)•
FATTY ACID METABOLISM, ALCOHOL, RAT (8633)•
FATTY ACID METABOLISM, COENZYMES, GUINEA PIG (8608)•
FIBRINOLYTIC ACTIVITY, CIRRHOSIS, CLOTTING DISORDERS (9152)•
FIBROSIS, ALCOHOLIC HEAPTITIS, MESENCHYMAL CELL (9057)
FRUCTOSE INTOLERANCE, FIBROSIS, STEATOSIS, BIOPSY, LIVER (9038)•
FUNCTION, ALCOHOLISM, MORPHOLOGICAL ALTERATIONS (8653)
FUNCTION, ALKYLPHOSPHATE INTOXICATION, ANTIDOTE THERAPY, RAT, RABBIT (9108)
FUNCTION, BENZYDAMINE HCL (9058)
FUNCTION, CORTISOL HYPERSECRETION, LIVER GLUCONEOGENESIS, TRANSAMINASES (9046)
FUNCTION, DRUG METABOLISM, ALCOHOL INTERFERENCE (8667)
FUNCTION, HALOTHANE ANESTHESIA, SURGERY (9113)
FUNCTION, HALOTHANE NARCOSIS, SURGERY (9112)
FUNCTION, MESENCHYMAL CLEARANCE, COLLOIDAL IRON (8786)
FUNCTION, PORTACAVAL SHUNT, CIRRHOSIS (9157)
FUNCTION, RIFAMPICIN, BILIRUBIN (9089)
FUNCTION, STEATOSIS, PREGNANCY (9082)
FUNCTION, SULFOBROMOPHTHALEIN CLEARANCE, PREGNANT WOMEN, VIRAL HEPATITIS HISTORY (9142)
FUNCTION, SULFOBROMOPHTHALEIN INTOLERANCE (8788)
FUNCTION, TRANSAMINASES, RIFAMPICIN (9090)
FUNCTION, WILSON'S DISEASE, NEUROLOGICAL LESIONS (9045)
GLUCONEOGENESIS, STIMULATION, HYPOPHYSECTOMY (8672)
GLUCURONYL TRANSFERASE, ETHANOL, SMOOTH, ENDOPLASMIC RETICULUM, PARTIAL HEPATECTOMY, RAT (8650)
GLYCONEOGENESIS, ALPHA-METHYLTRYPTOPHAN, AMINO ACID SPARING (8645)
GRANULOMATOSIS, HISTOPATHOLOGY, CLINICAL FEATURES (9105)
HEMODYNAMICS, OCCLUSION OF HEPATIC AN SUPERIOR MESENTERIC ARTERIES, HEPATIC OUTFLOW BLOCK, DOG (9255)
HEPATECTOMY, 5-FLUOROURACIL, ULTRASTRUCTURE, RNA (8621)•
HEPATECTOMY, TRIGLYCERIDE, ACCUMULATION (8606)•
HEPATITIS, ANTIGEN, BLOOD DONOR, POST-TRANSFUSION (9115)•
HEPATITIS, VIRAL, DRUG, INDIGENOUS (9128)
HEPATOCYTE ULTRASTRUCTURE, 2-ACETYLAMINOFLUORENE (8639)•
HETEROTOPIC TRANSPLANT, ANATOMICAL AN PHYSIOLOGICAL REQUIREMENTS, PIG (9071)
HETEROTOPIC TRANSPLANT INDICATIONS, CHRONIC HEPATIC INSUFFICIENCY, MAN (9072)
HISTOCHEMICAL ALTERATIONS, ENDOCRINE DISORDERS, RAT (8536)
HISTOLOGY, CHRONIC HEPATITIS, ACTIVE AND PERSISTENT, PATHOGENESIS (9148)
HISTOLOGY, EXPERIMENTAL HEPATITIS, ANTILYMPHOCYTE GLOBULIN TREATMENT, MOUSE (9097)
HISTOLOGY, FETAL AND ADULT STAGE, MA (8535)
HISTOLOGY, HEPATITIS, SERUM IMMUNOGLOBULINS (9101)
HISTOPATHOLOGY, BILE DUCT ATRESIA, INFANT (9195)
HISTOPATHOLOGY, INFECTIOUS MONONUCLE SIS, HEPATITIS (9123)
HYDATID CYST, SURGERY, DELAYED RESUL (9132)
INBORN ERRORS OF METABOLISM, GALACTOSEMIA, INFANTS (9047)
INFECTIOUS HEPATITIS, EPIDEMIC, CHILDREN, IMMUNOGLOBULIN (9140)
IODINE COMPOUNDS, TOXICITY, UROGRAPH (8748)
ISOLATED NUCLEI, LYSOSOMAL HYDROLASE RAT (8518)
ISOTOPE CLEARANCE, PORTAL FLOW MEASUREMENT (8733)
KERATAN SULFATES, GM1-GANGLIOSIDOSIS TYPE I, LYSOSOMAL HYDROLASES (9043
KETONE BODIES, TYROSINE ALPHA-KETOGLUTARATE TRANSAMINASE (8664)
KIDNEY, XANTHINE DEHYDROGENASE, STARVATION (8625)•
LAENNEC'S CIRRHOSIS, GROWTH HORMONE, DIABETES (9153)•
LESIONS, ARTERIO-PORTAL FISTULA, SULFOBROMOPHTHALEIN CLEARANCE (908
LESIONS, SCHISTOSOMA JAPONICUM, EGGS (9271)
LIPIDOSIS, WOLMAN'S DISEASE, NECROSI AND FIBROSIS, INTESTINAL MALABSORPTION (9074)
LIPIDS, JAUNDICE, EXTRAHEPATIC CHOLESTASIS (9081)
LIPOMA, CASE REPORT (9077)
MALLORY BODIES, FATTY INFILTRATION, CIRRHOSIS (9042)•
METABOLISM, AMINO ACIDS, HYPERGLYCEMIA, GLUCONEOGENESIS (8627)•
METABOLISM, BARBITURATES, ENZYME

INDUCTION (8673)
METABOLISM, GLUTAMINE, PH EFFECT, ACIDOSIS (8616)•
METALLOTHIONEIN, CADMIUM, SELECTIVE BINDING (8648)
METASTASES, CARCINOID TUMOR, RADIOTHERAPY (9069)
METASTASES, HEPATOGRAPHY WITH LIPIODOL ABDOMINAL TUMORS (8718)
MICROSOMAL MIXED FUNCTION, OXIDASE, D_2O INHIBITION (8623)•
MICROSOME, DRUG METABOLISM, POSTMORTEM (8624)•
MICROSOME, HEME TURNOVER, CYTOCHROME B5 (8661)
MICROSOMES, PROTEIN, CYANIDE BINDING (8525)
MICROSOME, PROTEIN SYNTHESIS, RAT (8656)
MICROSOMES, STEROID, HYDROXYLATION (8613)•
MITOCHONDRIA, CONFORMATION, RAT (8505)•
MITOCHONDRIA, INNER MEMBRANE, PROTEINS (8524)
MITOCHONDRIA, LIPID METABOLISM, RAT (8611)•
MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, BIOTIN DEFICIENCY, RAT (8676)
MITOCHONDRIA, PIGMENT, CYTOPLASM (9039)•
MITOCHONDRIA, PROTEIN SYNTHESIS, WARFARIN, VITAMIN K (8662)
MITOCHONDRIA, RESPIRATION, HYPOKINESIA RAT (8674)
MORPHOLOGY, GALACTOSAMINE, GIGANTOBLASTIC HEPATITIS, PREGNANT RAT, BABY RAT (9104)
MORPHOLOGY, GASTRIC CARCINOMA, GASTROINTESTINAL TRACT DISEASES (8538)
MORPHOLOGY, 3'-PHOSPHOADENYLYLSULFATE STEROID SULFOTRANSFERASE, MAN (8532)
MUCOPOLYSACCHARIDOSES I AND III, ACID HYDROLASES, SERUM (9078)
NECROSIS, CARBON TETRACHLORIDE POISONING, ENDOXANE (9096)
NEEDLE BIOPSY, TECHNICAL IMPROVEMENTS, CHILDREN, INFANTS (8778)
N-HYDROXY-2-FLUORENYLACETAMIDE, ADDUCT, PROTEIN (8671)
NEOPLASM, HYDATID CYST, RADIOISOTOPIC TECHNIQUE, CLEARANCE TESTS (8758)
ORTHOTOPIC HOMOTRANSPLANT, REJECTION, PIGLET (9092)
ORTHOTOPIC TRANSPLANT, IMMUNOLOGY, ANATOMOPATHOLOGY, DOG (9086)
PARENCHYMAL CELLS, FREE INORGANIC PHOSPHATE, HISTOCHEMISTRY, AUTORADIOGRAPHY, RAT (8521)
PARTIAL HEPATECTOMY, CIRCULATION (8696)•
PATHOLOGY, ANTIGLOBULIN CONSUMPTION TEST, VIRAL HEPATITIS (9050)
LIVER, PATHOLOGY, COENZYME PREPARATION CLINICAL TRIAL (9054)
PATHOLOGY, GAMMA CAMERA, INSPIRATION AND EXPIRATION VIEWS, HEPATIC PLIABILITY (8747)
PATHOLOGY, INFUSION CHOLECYSTOCHOLANGIOGRAPHY, SERUM ENZYMES (8725)
PATHOLOGY, INTRAVENOUS GALACTOSE TOLERANCE TEST, LIVER FUNCTION TESTS (8777)
PATHOLOGY, THOROTRAST, CHRONIC HEPATITIS (9052)
PEROXISOMES, GLYOXALATE METABOLISM (8617)•
PRIMARY CANCER, ANATOMOPATHOLOGY, DIAGNOSIS (9061)
PRIMARY CARCINOMA, HYPERLIPEMIA, ERYTHROCYTOSIS (9051)
PRIMARY CARCINOMA, SPONTANEOUS RUPTURE HEMATOPERITONEUM (9056)
PROTEASE, HISTAMINE, PHENIRAMINE MALEATE (8659)
PROTECTION, ALPHA-ALPHA-DITHIOCAPRONIC ACID CALCIUM SALT, LIPEMIA (9083)
PROTEIN SYNTHESIS, POLYSOMES, FREE AND BOUND (8642)
PUNCTURE BIOPSY, LAPAROSCOPY, PROPHYLAXIS (8782)
RADIATION INJURY, ULTRASTRUCTURE, HEXOSES (9093)•
RAT, ETHANOL, PORPHYRIN, NADH (8628)•
REGENERATING, ALKALINE DEOXYRIBONUCLEASE (8643)
REGENERATION, MITOTIC INDEX, CIRCADIAN RHYTHM, PARTIAL HEPATECTOMY, RAT (8652)
REGENERATION, PARTIAL HEPATECTOMY, ELECTROPHORETIC PROTEIN PATTERNS, DOG (8680)
REGENERATION, POLYAMINE SYNTHESIS (8655)
RIBOSOME, PEPTIDE BOND FORMATION, RAT (8512)•
RIBOSOME DISSOCIATION, MONOVALENT CATIONS, RAT (8651)
RNA CHAINS, INITIATION, 3-METHYLCHOLANTHRENE (8658)
RNA SYNTHESIS, ADRENALECTOMY, METAL ACTIVATION (8640)
SARCOIDOSIS, CHOLESTASIS, ORAL CONTRACEPTIVES (9075)
SARCOIDOSIS, GRANULOMATOUS HEPATITIS, HISTOPATHOLOGY (9106)
SARCOMA, PRIMARY, THOROTRAST (9076)
SCINTILLOGRAPHY, 113M IN ISOTOPE, KUPFFER CELL (8716)
SERUM HEPATITIS, PATIENTS, PROFESSIONAL RISK (9122)
SERUM HEPATITIS, SH ANTIGEN, PREVALENCE (9114)•
SIZE, FUNCTION, BLOOD FLOW, CIRRHOSIS (9164)
SPLEEN, SATURATED HYDROCARBON (8523)
STEATOSIS, ALCOHOL INGESTION, PATHOGENESIS (9111)
STEATOSIS, ALCOHOLISM, DIET, PATHOGENESIS (9110)
STEATOSIS, ALCOHOLISM, PATHOGENESIS (9094), (9095)
STEATOSIS, CHRONIC ALCOHOLISM, ALCOHOL METABOLISM (9154)
STEATOSIS, ESSENTIAL PHOSPHOLIPIDS, SERUM TRANSAMINASES (9099)
STEATOSIS, LIPOGENESIS, PHOSPHOLIPIDS, CHOLESTEROL (8635)•
STEATOSIS, SYMPTOMATOLOGY, THERAPY (9068)
SUBSTRATE AND COFACTOR CONCENTRATIONS, SEASONAL VARIATIONS, RAT (8668)

  SURGERY, MALIGNANCY, INJURY (9079)
  SUSPENSIONS, NADP, NADPH, LOSS (8670)
  THERAPY, CHRONIC HEPATITIS, CIRRHOSIS (9147)
  TISSUE CULTURE, AEROBIC METABOLISM, MAN (8519)
  TRANSAMINASE, DEHYDROGENASE, OXYDASE (8364)*
  TRANSPLANT, REJECTION, MAN (9087)
  TRAUMA, SURGICAL MANAGEMENT (9107)
  TRIGLYCERIDE LEVELS, ALCOHOL EFFECT, LIPID METABOLISM (8669)
  UDP-GLUCURONYL TRANSFERASE, CHOLESTASIS, PHENOBARBITAL (8631)*
  ULTRASTRUCTURE, ATP DEFICIENCY, ETHIONINE, FRUCTOSE, FEMALE RAT (8551)*
  ULTRASTRUCTURE, FLUOROCARBON, PERFUSION, RAT (8511)*
  ULTRASTRUCTURE, MUCOPOLYSACCHARIDOSES, CHILDREN (9088)
  VIRAL HEPATITIS, ANICTERIC HEMODIALYSIS (9129)
  WALKER CARCINOMA 256, MICROSOMES, STEROID HYDROXYLATION (8630)*
LIVER DISEASE
  VENOUS OCCLUSION, BUDD-CHIARI SYNDROME (9062)
  VENOUS OCCLUSION, LIVER BIOPSY, PATHOGENESIS, ETIOLOGY (9063)
LIVER FUNCTION
  METABOLISM, B-LIPOPROTEINS, FATTY ACIDS, ACTINOMYCIN, D (8615)*
LYSOSOME
  LIVER, FASTING, REGRESSION (8620)*
MALABSORPTION
  COW MILK INTOLERANCE, CHILDREN (8939)
  DRUG INDUCED, NEOMYCIN, METABOLIC DISORDERS (8697)
  FOLIC ACID, POLYGLUTAMATES, SMALL INTESTINE (8938)
  GLUCOSE, GALACTOSE, HEREDITARY METABOLIC DISORDERS, DIAGNOSIS (8754)
  LACTASE ADMININSTRATION, LACTOSE ABSORPTION, SMALL INTESTINE (8932)
  LACTOSE INTOLERANCE, ULCERATIVE COLITIS, INCIDENCE IN EUROPE (8934)
  SKIN DISORDERS, SCHILLING TEST, INTESTINAL INTRINSIC FACTOR (8935)
  TREHALOSE, MUSHROOM INTOLERANCE, SYMPTOMATOLOGY (8930)
MALFORMATION
  ANNULAR PANCREAS, INTESTINAL OCCLUSION SURGERY (9006)
  BILE DUCTS, CONGENITAL ATRESIA, LIVER HISTOPATHOLOGY (9195)
  CONGENITAL, DOUBLE GALLBLADDER, LITHIASIS, SURGERY (9174)
  CONGENITAL, MEGACOLON, SURGERY, HIRSCHSPRUNG'S DISEASE (8950)
  CONGENITAL, SIGMOIDO-RECTAL URETHRA, SURGERY, CHILDREN (8942)
  CONGENITAL INTESTINAL MALROTATION, ARTERIOMESENTERIAL INTESTINAL OCCLUSION, DUODENAL STENOSIS, CHILDREN (9254)
  GASTRIC DIVERTICULUM, CHOLECYSTECTOMY, RADIOLOGY (8871)
  GASTROSCHISIS, OMPHALOCELE, EMBRIONIC DEVELOPMENT (8846)
MEGACOLON
  CONGENITAL, AGANGLIONIC, HIRSCHSPRUNG DISEASE, COLOSTOMY (8961)
  SURGERY, INFANT (8954)
  TOXIC, ULCERATIVE COLITIS, PSYCHOSOMATIC ETIOLOGY, PHYSIOPATHOLOGY (8998)
MESENTERY
  INFLAMMATION, X-RAY DIAGNOSIS, SURGERY (9219)
  UPPER ABDOMINAL, DEVELOPMENT, MORPHOLOGY, MAN (8516)
METABOLISM
  ALCOHOL, CHRONIC ALCOHOLISM, LIVER STEATOSIS (9154)
  ALPHA-AMYLASE, PANCREAS, URINE LEVELS (8600)
  BILE SALTS, INTESTINAL LIPID ABSORPTION, BLIND LOOP SYNDROME (8562)
  CHOLESTEROL, ABSORPTION (8565)
  CHOLESTEROL, BILE, CHOLIC ACID (8610)*
  ETHANOL, LIVER, BLOOD (8660)
  FATTY ACIDS, ALCOHOL, LIVER, RAT (8633)*
  FATTY ACIDS, COENZYMES, GUINEA PIG LIVER (8608)*
  FATTY ACID BIOSYNTHESIS, LIVER, RAT (8609)*
  GLUTAMINE, PH EFFECT, METHIONINE SULFOXIMINE (8616)*
  INBORN ERROR, GM1-GANGLIOSIDOSIS TYPE I, LIVER, LYSOSOMAL HYDROLASES (9043)*
  INBORN ERRORS, GALACTOSEMIA, HETERZYGOTE GENE CARRIERS, DIAGNOSIS (8741)
  INBORN ERROR, GALACTOSEMIA, SIBLINGS (9067)
  INBORN ERRORS, THEORETICAL CONSIDERATIONS, NEWBORN INFANTS (9041)
  INBORN GALACTOSEMIA, GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, LIVER ANOMALIES, DIGESTIVE DISORDERS (9091)
  LIPIDS, ALCOHOL EFFECT, LIVER (8669)
  LIVER, CODEINE, AMINOPHENAZONE (8614)
  LIVER, 14C-ADENINE INCORPORATION, IN VIVO, RAT (8534)
  LIVER, FRUCTOSE-INDUCED ATP DEFICIENCY, FEMALE RAT (8551)*
  LIVER, GLYCOLYTIC ENZYMES, REGULATION (8663)
  LIVER, PEROXISOMES, GLYOXALATE (8617)
  PANCREATECTOMY, 2-STAGE PROCEDURE, ACUTE INSULIN DEPRIVATION (9003)*
  PEROBIC, LIVER TISSUE CULTURES, CYTOLOGY, MAN (8519)
  PHENYL DERIVATIVE, ORAL CHOLECYSTOGRAPHY, BILE, MAN, DOG, RAT (8677)
  SUBSTRATE AND COFACTOR CONCENTRATIONS, SEASONAL VARIATIONS, RAT LIVER (8668)
METAL
  CADMIUM, METALLOTHIONEIN, RAT LIVER (8648)
  CD+2, MN+2, ZN+2, RNA SYNTHESIS, LIVER (8640)
  MAGNESIUM, DEFICIENCY, REGIONAL ENTERITIS, ULCERATIVE COLITIS (8921)*
METAPLASIA
  CYLINDRICAL, LOWER ESOPHAGUS, ANATOMOPATHOLOGY (8797)

MICROSOME
- HEME TURNOVER, CYTOCHROME B5, LIVER (8661)
- LIVER, CHOLESTEROL BIOSYNTHESIS, 4-ALPHA-METHYL STEROL OXIDATION (8654)
- LIVER, CYANIDE BINDING PROTEIN (8525)
- LIVER, DRUG METABOLIZING ACTIVITY, POSTMORTEM DIMINUTION (8624)
- LIVER, MIXED FUNCTION OXIDASE, D2O INHIBITION (8623)*
- LIVER, STEROID, HYDROXYLATION (8613)*
- LIVER, WALKER CARCINOMA 256, STEROID HYDROXYLATION (8630)*
- PROTEIN SYNTHESIS, LIVER, RAT (8656)
- RAT LIVER, DIACYLGLYCEROL, ENZYMES (8646)

ITOCHONDRIA
- CRYPT, VILLUS, EPITHELIUM, JEJUNUM, ENZYME ACTIVITY (8513)*
- LIPID METABOLISM, LIVER, RAT (8611)*
- OXIDATIVE PHOSPHORYLATION, BIOTIN DEFICIENCY, RAT, LIVER (8676)
- PHYSICAL PROPERTIES, LIVER, RAT (8505)*
- RESPIRATION, LIVER, HYPOKINESIA, RAT (8674)

ITOSIS
- LIEBERKUHN'S CRYPTS, INTESTINAL MICROFLORA, RAT (8694)

ORPHOLOGY
- GASTRIC MUCOSA, IMMUNOHISTOCHEMISTRY, PERNICIOUS ANEMIA (8851)
- HEPATOCYTE POLYPLOIDY, SERUM FACTORS, RAT (8520)
- PANCREAS, ACUTE PANCREATITIS, PATHOGENESIS, CLINICAL PATHOLOGY (9034)
- PANETH CELL DISTRIBUTION, INTESTINE, RABBIT, HAMSTER (8517)
- UPPER ABDOMINAL MESENTERY, DEVELOPMENT MAN (8516)

OTILITY
- BACILLUS SUBTILIS, INTESTINAL TRANSIT, MICROFLORA, SALMONELLA TYPHYMURIUM (9220)
- DIGESTION, METOCLOPRAMIDE PHARMACOLOGY (8577)
- GALLBLADDER, SPHINCTEROTOMY, SPHINCTER OF ODDI (8576)
- GASTRIC ANTRUM, PRIFINIUM BROMIDE (8575)
- GASTROINTESTINAL MYOGRAPHY, LAPAROSCOPY, MAN (8578)
- ILEUM, UTERUS ESTROGEN, ANTIGENS (8574)
- PERISTALSIS, SEGMENTAL INVERSION, SMALL INTESTINE, RAT (8579)
- PERISTALTIC CONTRACTIONS, ESOPHAGOGASTRIC JUNCTION, INTRALUMINAL PRESSURE MEASUREMENTS, MAN (8714)
- STOMACH, SECRETIN, GASTRIN, CHOLECYSTOKININPANCREOZYMIN, GLUCAGON (8573)*

UCOSA
- GASTRIC, HISTOCHEMISTRY, CARBONIC ANHYDRASE, RAT (8589)
- GASTRIC, HISTOLOGY, RHEUMATOID ARTHRITIS, GASTRIC HYPOACIDITY (8537)
- GASTRIC, IMMUNOHISTOCHEMISTRY, PERNICIOUS ANEMIA, HISTAMINE RESISTANT ACHYLIA (8851)
- GASTRIC, LACTATE DEHYDROGENASE, JEJUNAL MUCOSA, SHEEP (8528)
- GASTRIC, MORPHOLOGY, SUCTION BIOPSY, IMMUNOGLOBULINS, CHRONIC GASTRITIS (8839)
- GASTRIC, MUCOUS CELLS, FUNDUS, PYLORUS CORTISONE (8585)*
- GASTRIC, UREASE-CARBODEHYDRASE-SUBSTRATE COMBINATION, GASTRIC SECRETION, RAT (8594)
- GASTRIC BARRIER, LYSOLECITHIN, DIGITOXIN, PHOSPHOLIPASE A (8556)*
- HUMAN JEJUNAL, CYTOCHEMISTRY, NORMAL, MALABSORPTION (8931)
- INTESTINAL, CELL-FREE, LIPOPROTEIN BIOSYNTHESIS (8685)*
- INTESTINE, FATTY ACID PATTERN, MAN (8691)
- INTESTINE, LYMPH, PERMEABILITY (8508)*
- INTESTINE, MICROSOMES, PHOSPHODIESTERASE I (8962)
- RECTAL, CARCINOMATOUS, CYTOCHEMISTRY, ISOENZYMES (8940)*
- SMALL INTESTINE, GLUCOSAMINE, GLYCOPROTEIN (8686)*
- SMALL INTESTINE, TRIGLYCERIDE SYNTHETASE (8503)*

NEOPLASM
- ADENOCARCINOMA, GALLBLADDER, LIVER ALTERATIONS (9048)
- ANORECTAL MELANOMA, ANATOMOPATHOLOGY, HISTOPATHOLOGY (8980)
- BENIGN TUMOR, ESOPHAGUS, RADIOLOGY (8824)
- BENIGN TUMORS, GASTRODUODENAL ANATOMOPATHOLOGY, HISTOLOGY (8867)
- CANCER, ESOPHAGUS, COBALT TELECURIETHERAPY (8804)
- CANCER, ESOPHAGUS, RADIOTHERAPY (8800)
- CANCER, GALLBLADDER, ETIOLOGY (9173)
- CANCER, LIVER, STOMACH, ALPHA-FETOPROTEIN (8876)
- CANCER, PANCREAS, LUNG INVOLVEMENT (9011)
- CARCINOID TUMOR, METASTASES, LIVER, RADIOTHERAPY (9069)
- CARCINOMA, DUODENUM, HETEROTOPIC PANCREAS (8848)
- CARCINOMA, LYMPHOSARCOMA, PANCREAS, DIFFERENTIAL DIAGNOSIS (8790)
- CECAL TUMOR, DOUBLE CONTRAST METHOD, DIFFERENTIAL DIAGNOSIS (8948)
- ESOPHAGEAL TUMORS, CONGENITAL LESIONS, PERFORATION (8808)
- GASTRIC CANCER, CYTOLOGY, DIAGNOSTIC METHODOLOGY (8727)
- GASTRIC CANCER, ETIOLOGY, ANATOMOPATHOLOGY, HISTOLOGY (8874)
- GASTRIC CANCER, GASTRECTOMY, ESOPHAGEAL JEJUNODUODENOPLASTY (8852)
- GASTRIC CARCINOMA, DOUBLE CONTRAST ROENTGENOLOGY (8743)
- GASTRIC CARCINOMA, PROPHYLACTIC EXAMINATION, GERMANY (8861)
- GASTRIC LEIOMYOSARCOMA, DIAGNOSIS, THERAPY (8857)
- GASTRIC LEIOMYOMA, CALCIFICATION, SURGERY (8869)
- GASTRIC NEURINOMA, HISTOLOGY, ANATOMOPATHOLOGY (8853)

  GASTRIC NEURINOMA, HISTOPATHOLOGY, PARTIAL GASTRECTOMY (8842)
  GASTRIC POLYPS, CANCERIZATION, PATHOGENESIS (8838)
  HEPATOMA, ANATOMOPATHOLOGY, DIAGNOSIS (9061)
  HEPATOSPLENOSCINTOGRAPHY, SHORT LIFE RADIOISOTOPES, CHILDREN (8755)
  INTRARECTAL TUMOR, ARTERIOGRAPHY, SURGERY (8953)
  LEIOMYOFIBROMA, SMALL INTESTINAL VOLVULUS, DIVERTICULUM PERFORATION (8912)
  LEIOMYOMA, INTESTINE, MASSIVE MELENA (8910)
  LEIOMYOSARCOMA, STOMACH, GASTROSCOPY, CELIAC ANGIOGRAM (8837)
  LIPOMA, CECUM, ANATOMOPATHOLOGY (8962)
  MALIGNANT LYMPHOGRANULOMA, STOMACH, NOSOLOGY (8854)
  MALIGNANT TUMOR, EXTRAHEPATIC BILE DUCTS, OBSTRUCTIVE JAUNDICE (9179)
  PANCREATICODUODENAL RESECTION, PROPHYLAXIS, PANCREATIC STUMP NECROSIS (9004)
  PRIMARY, LIVER, CARCINOMA, SPONTANEOUS RUPTURE, HEMATOPERITONEUM (9056)
  PRIMARY CANCER, GASTRIC STUMP, GASTRECTOMY, ULCER (8872)
  PRIMARY CARCINOMA, LIVER, HYPERLIPEMIA ERYTHROCYTOSIS (9051)
  SCHWANNOMA, SMALL INTESTINE, ARTERIOGRAPHY, HISTOLOGY (8907)
  TERATOMA, STOMACH, NEWBORN (8847)
  VILLOUS ADENOMA, POLYPOSIS, RECTOSIGMOID (8985)
NUCLEOTIDE
  NADP, NADPH, LIVER SUSPENSIONS, LOSS
OBSTRUCTION
  INTESTINAL, CARDIAC PATIENT, SURGERY (9210)
OCCLUSION
  INTESTINAL, ATRESIA, ILEUS, INFANTS (9212)
ODDI, SPHINCTER OF
  INFLAMMATION, ASYMPTOMATIC CHOLECYSTOCHOLEDOCHOLITHIASIS, CHOLECYSTODUODENAL FISTULA (9194)
PAIN
  ACUTE ABDOMEN, ETIOLOGY, SYMPTOMATOLOGY (9238)
PANCREAS
  ACUTE PANCREATITIS, SERUM LIPASE DETERMINATION, DIAGNOSTIC VALUE (9012)
  AMYLASE ACTIVITY, LIVER, SERUM, FETAL RATS (8601)
  ANNULAR, INTESTINAL OCCLUSION, SURGERY, NEWBORN (9006)
  CALCIUM EXCRETION, PANCREOZYMIN, DOG (8602)
  CANCER, LUNG INVOLVEMENT, ESOPHAGEAL SYMPTOMS (9011)
  CARCINOMA, DIAGNOSIS, PREOPERATIVE, RETROSPECTIVE (8705)•
  DRAINAGE, WIRSUNG•S TECHNIQUE, ACUTE PANCREATITIS (9033)
  ENZYME, AUTORADIOGRAPHY, HISTOLOGY, ADRENALECTOMY (8598)•
  EXOCRINE FUNCTION, AUGMENTED SECRETIN TEST, DUODENAL BICARBONATES (8768)
  EXPERIMENTAL ALLOGRAFT, NATURAL DEVELOPMENT, FUNCTIONAL AND MORPHOLOGICAL, ALTERATIONS (9007)
  EXPLORATION, DUODENAL INTUBATION, MAN (8750)
  FALSE CYST, CHRONIC PANCREATITIS, PLEURISY, PATHOGENESIS (9032)
  FALSE CYST, MYOCARDIAL ISCHEMIA, GANGRENE OF LEG (9009)
  FISTULA, BICARBONATE RESPONSE, DUODENAL ACIDIFICATION (8552)•
  HETEROTOPIC, DUODENAL CARCINOMA, HISTOPATHOLOGY, PATHOLOGICAL ANATOMY (8848)
  HETEROTOPY, DUODENAL WALL, BILE DUCT OBSTRUCTION (9178)
  HISTOPATHOLOGY, CARCINOMA, FIBROSIS (9002)•
  LESIONS, ACUTE PANCREATITIS, ANATOMOPATHOLOGY (9019)
  PANCREATECTOMY, 2-STAGE PROCEDURE, METABOLISM (9003)•
  RESPONSE, INTESTINAL ACIDIFICATION, BICARBONATE (8597)•
  SCINTIGRAPHY, LIMITATIONS, CHRONIC PANCREATITIS (8751)
  SCINTIGRAPHY, PANCREATITIS, PANCREATIC TUMOR (8737)
  STANDARD RADIOLOGY, CRITICAL EVALUATION, GASTRODUODENAL AND BILE DUCT RADIOGRAPHY (8734)
  TRAUMA, CELIAC ARTERIOGRAPHY, SUPERIOR MESENTERIC ARTERIOGRAPHY (8765)
  TRAUMA, DIAGNOSIS, THERAPY (9008)
  TRAUMA, PHYSIOPATHOLOGY, SURGERY (9013)
  WEBER CHRISTIAN SYNDROME, PHYSIOPATHOLOGY (9010)
PANCREATITIS
  ACUTE, AMYLASE DETERMINATION, EARLY LAPAROTOMY, DIAGNOSTIC VALUE (8738)
  ACUTE, DRAINAGE, WIRSUNG•S TECHNIQUE (9033)
  ACUTE, EARLY DEVELOPMENT, SURGERY, CHOLELITHIASIS (9029)
  ACUTE, EMERGENCY PANCREATECTOMY, ANATOMOPATHOLOGY, INDICATIONS (9028
  ACUTE, METABOLIC, VIRAL, ALLERGIC (9017)
  ACUTE, PANCREATIC ABSCESS, ANATOMOPATHOLOGY, SURGERY (9014)
  ACUTE, PATHOGENESIS, DIAGNOSIS, PROGNOSIS (9024)
  PATHOGENESIS, MORPHOGENESIS, CLINICAL PATHOLOGY (9034)
  ACUTE, SCINTIGRAPHY, LABELED SELENIOMETHIONINE (8732)
  ACUTE, SHOCK, HEMODYNAMIC ALTERATIONS THERAPY (9035)
  CHRONIC, ALCOHOLISM, RADIOLOGY, BILIARY TRACT DISEASES (9016)
  CHRONIC, ANATOMOPATHOLOGY, PATHOGENESIS, TRYPTIC NECROSIS (9025)
  CHRONIC, DYSPHAGIA, ESOPHAGEAL STENOSIS (9031)
  CHRONIC, EPIDEMIOLOGY, NUTRITION, ALCOHOL, ETIOLOGY (9020)
  CHRONIC, ETIOLOGY, PATHOGENESIS, INCIDENCE (9023)
  CHRONIC, EXPERIMENTAL SURGERY, PANCREATICO-JEJUNAL ANASTOMOSIS, PIG (9026)

  CHRONIC, JAUNDICE, PANCREATICO-JEJUNOSTOMY, CHILDREN (9027)
  CHRONIC, PLEURISY, PATHOGENESIS (9032)
  CHRONIC, SPLANCHNICECTOMY (9019)
  CHRONIC, SPLEEN, JAUNDICE, CHOLANGIOGRAPHY (9030)
  CHRONIC, SURGERY, STATISTICS, GENEVA (9022)
  CHRONIC, TOTAL PANCREATECTOMY, FOLLOW-UP, LIPOSOLUBLE VITAMINS (9021)
  CHRONIC, VASCULARY ETIOLOGY, PERIPHERAL ARTERITIS (9037)
  ENZYME TESTS, ALCOHOLISM, CARCINOMA (9015)•
  ETIOLOGY, PATHOGENESIS (9018)
  PARASITES, ALCOHOLISM, PANCREATIC CARCINOMA (9036)
ARASITE
  FASCIOLA HEPATICA, HEPATOPANCREAS, TYMNAEA TRUNCATULA (8700)
  FASCIOLA HEPATICA, SPECIFIC ANTIGEN, CHARACTERISTICS, IN SITU (8539)
  HYMENOLEPSIS DIMINUTA, CHEMICAL CHANGES, RAT INTESTINE (9289)
  NIPPOSTRONGLUS BRASILIENSIS, REPRODUCTION, RAT INTESTINE (9288)
  TAENIARHYNCHUS SAGINATUS, EPIDEMIOLOGY KARL MARX CITY (9292)
ARASITIC DISEASE
  AMEBIASIS, LIVER, DIAGNOSIS, SAIGON (9263)
  AMEBIASIS, LIVER, LAOS (9265)
  AMEBIC ABSCESS, LIVER, THERAPY (9266)
  AMEBIC HEPATITIS, DIAGNOSIS, INDIRECT IMMUNOFLUORESCENCE REACTION (9290)
  AMEBIC LIVER ABSCESS, CLINICAL STUDY (9273)
  AMEBIC LIVER ABSCESS, REVIEW (8272)
  ASCARIASIS, THIABENDAZOLE TREATMENT, IRAN (9262)
  ASCARIS, REINFECTION, TREATMENT, NUTRITION (9284)
  BILHARZIASIS, INTESTINE, DETECTION, CHILDREN (9279)
  BILHARZIASIS, LIVER, INTRAVENOUS HEPATIC OPOTHERAPY (9281)
  BILHARZIASIS, WOODY REGIONS, EPIDEMIOLOGY (9278)
  BOVINE POLYARTHRITIS, CHLAMYDIAL AGENT IMMUNOFLUORESCENCE (9208)
  COCCIDIOSIS, LIVER METABOLISM, CHICKEN (9283)
  ENTAMOEBA HISTOLYTICA, SYMPTOMS, RHODESIANS (9286)
  EXPERIMENTAL, ECHINOCOCCUS GRANULOSUS, CYST FORMATION (9268)
  FILARIASIS, CHYLURIA, LYMPHOGRAPHY (9291)
  HELMINTHIASIS, CUCURBITACINES, MOUSE (9280)
  HYDATID CYST, LIVER, SURGERY (9132)
  HYDATIDOSIS, OBSTRUCTIVE JAUNDICE, CHOLANGIOGRAPHY (9269)
  INTESTINAL, SOUTH CAROLINA, ASCARIS, HOOKWORM, TRICHURIS (9285)
  INTESTINAL AMEBIASIS, EPIDEMIOLOGY, FRANCE (9264)
  LIVER ECHINOCOCCOSIS, HYDATID CYST PERFORATION, OBSTRUCTIVE JAUNDICE (9276)
  SCHISTOSOMA JAPONICUM, LIVER LESIONS, EGGS (9271)
  SCHISTOSOMIASIS, ENDEMIC, BANTU CHILDREN (8899)
  SCHISTOSOMIASIS, EPIDEMIOLOGY CAMBODIA (9275)
  SCHISTOSOMIASIS, FASCIOLIASIS, RHODESIA (9287)
  SCHISTOSOMIASIS, MORPHOLOGY, SMALL INTESTINE (9274)
  TRICHOCEPHALOSIS, THERAPY, N-(2'CHLORO-4'-NITROPHENYL)-5-CHLOROSALICYLAMIDE (9267)
PARENCHYMAL CELL
  LIVER, EPIDERMOLYSIS ACUTA TOXICA, CHILDREN (9098)
  ACUTE PANCREATITIS, DIAGNOSIS, PROGNO- (9024)
PATHOGENESIS
PERFORATION
  COLON, SPONTANEOUS, HEMODIALYSIS (8977)
  SPONTANEOUS, LARGE INTESTINE, ANATOMOPATHOLOGY, AGE INCIDENCE (8963)
PERFUSION
  CHOLANGIOGRAPHY, BILE DUCT INVESTIGATIONS, HAZARDS (8715)
  FLUOROCARBON, ISOLATED LIVER, ULTRASTRUCTURE, RAT (8511)•
PERITONITIS
  BILE DUCT INFLAMMATION, CHOLELITHIASIS, PANCREATICO-BILIARY REFLUX (9197)
  CHRONICA FIBROSA ENCAPSULANS, DIAGNOSIS, ILEUS, APPENDICITIS (8764)
  PERFORATIVE, LACK OF PERFORATION, PATHOGENESIS, THERAPY (9250)
PNEUMATOSIS
  PORTAL VENOUS SYSTEM, PATHOGENESIS, PROGNOSIS (9214)
PNEUMATOSIS INTESTINALIS
  SYMPTOMATOLOGY, RADIOLOGY, ETIOLOGY (8909)
POISON
  CARBON TETRACHLORIDE, LIVER NECROSIS, ENDOXAN (9096)
  FOOD, BOTULISM (9216)
  LEAD, LIVER CELL ALTERATIONS, MAN (9103)
  PASTRY CREAM, ENTEROTOXIC STAPHYCOCCUS EPIDEMIC (9229)
POULTRY
  INFECTIOUS RESERVOIR, BACTERIA (9245)
POLYPOSIS
  COLON, FAMILIAL, PREVENTATIVE SURGERY (8968)
  PFUTZ-JEGHERS SYNDROME, HISTOPATHOLOGY, SYMPTOMATOLOGY (8908)
  STOMACH, CANCERIZATION, PATHOGENESIS (8838)

PORTAL HYPERTENSION
  ILEAL VARICES, HEMORRHAGE, LIVER CIRRHOSIS (9155)
  INTESTINAL ABSORPTION, AMMONIUM CHLORIDE, LIVER CIRRHOSIS (9162)
  PORTACAVAL SHUNT, COMPLICATIONS, LIVER CIRRHOSIS (9085)
  SURGERY, ETIOLOGY, CHILDREN (9055)
PROTEIN
  REABSORPTION, DOG (8561)
  SERUM, LIVER CIRRHOSIS, BIDIMENSIONAL ELECTROPHORESIS (9169)

  - SYNTHESIS, LIVER, WARFARIN, VITAMIN K (8662)
  - SYNTHESIS, POLYSOMES, LIVER (8642)
- PSEUDOCYST
  - BILE DUCT, PATHOGENESIS, DIAGNOSIS, THERAPY (9191)
- PYLORUS
  - HYPERTROPHY, PARTIAL GASTRECTOMY, EOSINOPHILIC INFILTRATION (8841)
  - LIGATURE, ESOPHAGEAL LIGATURE, GASTRIC SECRETION, RAT (8588)
  - LIGATION, GASTRIC SECRETION, ACIDITY, RAT (8587)
  - SPHINCTER, INCOMPETENCE, VARIANT (8828)•
  - STENOSIS, ACID EROSIONS OF ESOPHAGUS, PATHOGENESIS (8820)
  - STENOSIS, PRESURGICAL MANAGEMENT, METABOLIC CARE, ELECTROLYTE SUPPLY (8849)
- RADIATION
  - ESOPHAGEAL CARCINOMA, THERAPY, HEMATOLOGY (8791)•
- RADIOLOGY
  - GALLBLADDER SIPHON, ANATOMOPATHOLOGY, SURGERY (9188)
  - GASTRIC ULCER, DIFFERENTIAL DIAGNOSIS, HEALING PROCESS (8836)
  - UROGRAPHY, HIGH DOSE, HEPATIC FUNCTION (8748)
- RECTUM
  - SESSILE POLYPS, VILLOUS TUMORS, PERINEAL EXPOSURE (8976)
  - ULCER, COLITIS CYSTICA PROFUNDA, HISTOPATHOLOGY (8947)
- REGIONAL ENTERITIS
  - DUODENO-JEJUNAL LOCALIZATION, CROHN'S DISEASE, GASTRECTASIA, DUODENAL STENOSIS (8922)
- RIBONUCLEASE
  - ACID-STABLE, FASTED LIVER (8657)
  - PANCREATIC, 28 S RNA, RIBOSOMAL INTERACTION (8641)
- RIBONUCLEIC ACID
  - LIVER, ACTIVATION, 3-METHYLCHOLANTHRENE (8658)
  - LIVER, CHROMATIN TEMPLATE, METHYLCHOLANTHRENE, PHENOBARBITAL (8612)•
  - 28-S, PANCREATIC RIBONUCLEASE, PROTECTION (8641)
- RIBOSOME
  - DISSOCIATION, MONOVALENT CATIONS, LIVER, RAT (8651)
  - LIVER, PEPTIDE BOND FORMATION, RAT (8512)•
- SALMONELLOSIS
  - FOOD POISONING, INFECTION, HYGIENE (9236)
  - TYPHOID FEVER, PARATYPHOID FEVER, BACTRIM THERAPY (9237)
- SCHISTOSOMIASIS
  - CLINICAL FEATURES, SMALL INTESTINE, MORPHOLOGY (9274)
  - EPIDEMIOLOGY, CAMBODIA (9275)
- SECRETIN
  - MOTILITY, STOMACH MUSCLE, RHYTHMIC CONTRACTION (8573)•
- SECRETION
  - BILE, CHOLECYTOKININ, GASTRIN II, CERULEIN (8619)•
  - BILE, FLOW RATE, CHOLESTEROL (8632)•
  - GASTRIC, ACIDITY, LIGATED PYLORUS, RAT (8587)
  - GASTRIC, GLUCAGON INHIBITION, PENTAGASTRIN, HISTAMINE (8595)
  - GASTRIC, HIATAL HERNIA, SURGERY, VAGOTOMY (8807)
  - GASTRIC, HISTAMINE, MAXIMAL SECRETION TEST, MAN (8713)
  - GASTRIC, HYPERACIDITY, LONGLASTING NEUTRALIZATION, PEPTIC ULCER (8862)
  - GASTRIC, INACTIVATION OF PENTAGASTRIN, LIVER HOMOGENATE, HUMAN SERUM, RAT (8596)
  - GASTRIC, INHIBITORY FACTOR, RESERPINE RAT (8592)
  - GASTRIC, INVESTIGATION, CURRENT TECHNIQUES, VAGOTOMY (8774)
  - GASTRIC, LIPIDS, THIN LAYER CHROMATOGRAPHY (8593)
  - GASTRIC, METOCLOPRAMIDE, PHARMACODYNAMICS, MOTILITY (8590)
  - GASTRIC, PROSTAGLANDIN E1, PENTAGASTRIN, MAN (8581)•
  - GASTRIC, PROTEASES, PROTEIN DIGESTION PATHOLOGY (8529)
  - GASTRIC, PYLORUS LIGATURE, ESOPHAGEAL LIGATURE, RAT (8588)
  - GASTRIC, SPONTANEOUS, SUBMAXIMAL BETAZOLE TEST, PEPTIC ULCER (8765)
  - GASTRIC, STIMULATION, BETAZOLE HYDROCHLORIDE, GASTRIC TUMOR, MAN (8960)
  - GASTRIC, STIMULATION, HISTAMINE, INSULIN, DUODENAL ULCER (8886)
  - GASTRIC, UREASE-CARBODEHYDRASE-SUBSTRATE COMBINATION, ACID-BASE REGULATION, GASTRIC MUCOSA, RAT (8594)
  - GASTRIC ACID, SECRETIN, CHOLINERGIC (8580)•
  - GASTRIC MUCIN, CHEMISTRY, GLYCOPROTEIN (8586)
  - GASTRIN, ACETYLCHOLINE, LYMPH (8582)
  - PANCREATIC BICARBONATE, INTESTINAL ACIDIFICATION (8597)•
- SECRETORY INHIBITOR
  - GASTRIC FACTOR, RESERPINE, RAT (8592)
- SERUM
  - FREE AND ESTERIFIED FATTY ACIDS, SPECTROPHOTOMETRY, LIVER DISEASES (9144)
- SHOCK
  - ACUTE PANCREATITIS, HEMODYNAMIC ALTERATIONS, THERAPY (•035)
- SIGMOID
  - DIVERTICULITIS, UTERINE PERFORATION, ANATOMOPATHOLOGY (8960)
  - ENDOMETRIOSIS, INTESTINAL OCCLUSION, CLINICAL SYMPTOMATOLOGY (8964)
  - RECTOSIGMOIDAL JUNCTION, RADIOLOGY, INDIRECT LIGHT BEAM (8737)
- SPHINCTER
  - GASTROESOPHAGEAL, FUNDOPLICATION, HIATAL HERNIA (8817)
  - PYLORIC, INCOMPETENCE, VARIANT (8828
- SPHINCTEROTOMY
  - ANORECTAL SURGERY, ANAL FISTULA, CONTINENCE FUNCTION (8965)
- SPRUE
  - INTESTINE, ULTRASTRUCTURE, GLUTEN FREE DIET (8937)
- STAINING AGENTS

ALCIAN BLUE, BINDING, GASTRIC JUICE, ULCERS, CARCINOMA (8879)•
STEATORRHEA
CHRONIC, INTESTINAL MALABSORPTION, CONGENITAL LYMPHEDEMA, INTESTINAL LYMPHANGECTASIA, CHILD (8936)
STEATOSIS
CHOLESTEROL, PHOSPHOLIPIDS, LIPOGENESIS (8635)•
EXPERIMENTAL, CHOLINE OROTATE, LIVER, RAT (8682)
LIVER, ALCOHOL, PATHOGENESIS (9111)
LIVER, ALCOHOLISM, PATHOGENESIS (9095)
LIVER, ETIOLOGY, INCIDENCE (9068)
STENOSIS
CELIAC ARTERY, LIGAMENT CONSTRICTION, AORTOGRAPHY, ANATOMOPATHOLOGY (9225)
CELIAC AXIS, DUODENOPANCREATECTOMY (9227)
COMMON LIVER ARTERY, MUSCULAR HYPERPLASIA (9223)
DIAGNOSIS, THERAPY (8830)•
DUODENAL, DUODENOJEJUNAL REGIONAL ENTERITIS, CROHN'S DISEASE, GASTRECTASIA (8922)
ESOPHAGEAL, SURGERY, RADIOLOGY, INFANT (9119)
ESOPHAGUS, BOUGIENAGE, RADIOLOGY (8825)
PEPTIC, ESOPHAGUS, ETIOLOGY, PATHOGENESIS (8805)
PRIMARY, INTRAHEPATIC, BILE DUCTS, CHOLANGIOGRAPHY, ETIOLOGY (9176)
PYLORUS, ACID EROSIONS OF ESOPHAGUS, ETIOLOGY (8820)
PYLORUS, PARTIAL GASTRECTOMY, EOSINOPHILIC INFILTRATION (8841)
PYLORUS, PRESURGICAL MANGAEMENT, METABOLIC CARE, ELECTROLYTE SUPPLY (8849)
STEROID
ANABOLIC, STANOZOLOLE THERAPY, VIRAL HEPATITIS, CHILDREN (9127)
STOMACH
ANTRUM, MOTILITY, PRIFINIUM BROMIDE (8575)
ANTRUM, PYLORUS, RADIOLOGY (8827)•
CANCER, ETIOLOGY, ANATOMOPATHOLOGY, HISTOLOGY (8874)
CARCINOMA, CYSTIC DISEASE, DIFFUSE (8834)
CARCINOMA, PROPHYLACTIC EXAMINATION, GERMANY (8861)
CHRONIC ULCER, DUODENAL, SELECTIVE SURGERY (8881)
DUODENUM, BENIGN TUMORS, HISTOLOGY (8867)
FIBROSIS, CARCINOMA, HISTOPATHOLOGY (9002)•
GALLBLADDER, COMBINED ROENTGENOLOGY, PANCREAS (8719)
GASTRIC ACID, TUBELESS DETERMINATION, PREGNANCY ANEMIA, IRON MALABSORPTION (8708)•
GASTRIC JUICE, PEPSIN, ENZYMES, ALKALI INACTIVATION (8583)•
GASTRIC WALL, CYST, RADIOLOGY, SURGERY (8875)
HEMORRHAGE, VASOACTIVE AGENTS, DUODENUM (8877)
ISOLATED LYMPHOGRANULOMATOSIS, GASTRECTOMY, RADIOLOGY (8845)
LEIOMYOMA, CALCIFICATION, SURGERY (8869)
LEIOMYOSARCOMA, DIAGNOSIS, THERAPY (8857)
MALIGNANT PRIMARY LYMPHOGRANULOMA, NOSOLOGY, PROGNOSIS (8854)
MUCOSAL BARRIER, LYSOLECITHIN, DIGITOXIN, PHOSPHOLIPASE A (8556)•
MUCOUS CELLS, FUNDUS, PYLORUS, AUTORADIOGRAPHY (8585)•
NEURINOMA, HISTOPATHOLOGY, ANATOMOPATHOLOGY (8853)
RENNIN, LOCALIZATION, CALF, ABOMASUM, IMMUNOFLUORESCENCE (8507)•
SURGERY, BEZOAR FORMATION, PATHOGENESIS, TREATMENT (8855)
ULCERS, BENZYL-TRI(BETAPROPOXYETHYL) AMMONIUM IODIDE, SHAY RATS (8584)•
SUGAR
MONOSACCHARIDE, INTESTINAL TRANSPORT, FASTING, DIABETES (8559)•
SULFOBROMOPHTHALEIN
INTOLERANCE, DIAGNOSTICS, HEPATOLOGY (8788)
SURGERY
ABDOMEN, PREMATURE CORRECTIVE INTERVENTION (9246)
ANAL FISTULA, FUNCTIONAL SPHINCTEROTOMY, CONTINENCE FUNCTION (8965)
APPENDECTOMY, URETHRAL RUPTURE (8967)
BILIARY TRACT, PANCREATIC INVOLVEMENT, MORTALITY RATE (9181)
CANCER, RECTUM, PRIMARY SUTURE (8970)
CHOLECYSTECTOMY, MORTALITY, RADIOLOGY (9183)
CHOLEDOCHOTOMY, THORACIC FISTULA, DIAPHRAGM (9186)
CHRONIC PANCREATITIS, STATISTICS, GENEVA (9022)
COLON TRANSPLANT, ESOPHAGEAL REPAIR, ESOPHAGEAL ATRESIA (8811)
COLOSTOMY, BOWEL FUNCTION, DIET (8946)
COMMON BILE DUCT REPLACEMENT, SILICONE RUBBER (9171)
CONTINENCE, ANAL, RECTAL, PEDIATRIC (8972)
ELONGATION OF ESOPHAGUS, DELAYED END-TO-END ANASTOMOSIS, ESOPHAGEAL ATRESIA (8821)
EMERGENCY PANCREATECTOMY, ACUTE PANCREATITIS, ANATOMOPATHOLOGY (9028)
ESOPHAGEAL ACHALASIA, RADIOGRAPHY, INDICATIONS (8822)
ESOPHAGEAL REPAIR, COLON TRANSPLANT, POSTSURGICAL CARE (8826)
ESOPHAGEAL REPAIR, CONGENITAL ATRESIA, (8794)
ESOPHAGEAL SUBSTITUTION, COLON TRANSPLANT, INFANTS, CHILDREN (8793)
ESOPHAGOSTOMY, TRANSVERSE COLON TRANSPLANT, ESOPHAGEAL ATRESIA (8812)
EXTRAHEPATIC BILE DUCTS, CHOLELITHIASIS , MORTALITY RATE (9182)
FUNDOPLICATION, PEPTIC AND REFLUX ESOPHAGITIS, ENDOSCOPY (8798)
GASTRECTOMY, DUODENAL ULCER, CHOLEDOCHOLITHIASIS (9199)
GASTRIC, BEZOAR FORMATION, PATHOGENESIS, TREATMENT (8855)
GASTRIC RESECTION, ARTERIO-PORTAL

FISTULA, PHYSIOPATHOLOGY (8850)
  - GASTRIC RESECTION, DUODENAL ULCER, MORTALITY RATE (8884)
  - GASTRIC VAGOTOMY, CARDIAL SPASM, ESOPHAGEAL ENLARGEMENT (8858)
  - GASTRODUODENAL RESECTION, GASTROENTEROANASTOMOSIS, COLONIC STENOSIS (8856)
  - GASTROESOPHAGEAL REFLUX, GASTROPLEXIA, HIATAL HERNIA (8818)
  - GASTROINTESTINAL, FLUID LOSS, POSTOPERATIVE (9215)
  - HELLER'S TECHNIQUE, MEGA- ESOPHAGUS, CHILDREN (8795)
  - HEMORRHOIDECTOMY, IMPROVED TECHNIQUES (8955)
  - HEPATIC, MALIGNANCY, INJURY (9079)
  - LIVER, BILE DUCTS, DIETARY INDICATIONS CHILDREN (9064)
  - MASSIVE GASTRECTOMY, ESOPHAGEAL JEJUNODUODENOPLASTY, CANCER (8852)
  - MEGACOLON, INFANT (8954)
  - PANCREATICODUODENAL RESECTION, TUMOR, PROPHYLAXIS (9004)
  - PANCREATICO-JEJUNAL ANASTOMOSIS, CHRONIC PANCREATITIS, PIG (9026)
  - PARTIAL GASTRECTOMY, GASTRIC NEURINOMA HISTOPATHOLOGY (8842)
  - PARTIAL GASTRECTOMY, GASTRIC ULCER, PATHOGENESIS (8870)
  - PARTIAL HEPATECTOMY, LIVER REGENERATION, ELECTROPHORETIC PROTEIN PATTERNS, DOG (8680)
  - PORTAL HYPERTENSION, ETIOLOGY, CHILDREN (9055)
  - PORTACAVAL SHUNT, PORTAL HYPERTENSION, LIVER CIRRHOSIS (9085)
  - PYLOROPLASTY, CHOLEDOCHOJEJUNOSTOMY, CHOLEDOCHODUODENAL FISTULA (9177)
  - RECTUM, COLON, ANASTOMOSIS, GRAFTS (8951)
  - RECTUM, PERINEAL EXPOSURE, TECHNIQUE (8976)
  - SEQUELAE, MASSIVE RESECTION, SMALL INTESTINE (8918)
  - SMALL INTESTINE, MASSIVE RESECTION, DIGESTIVE CAPACITY (8919)
  - SMALL INTESTINE, MASSIVE RESECTION, FUNCTIONAL ADAPTATION, PHYSIOPATHOLOGY (8915)
  - SMALL INTESTINE, MASSIVE RESECTION, INDICATIONS, ADULTS, CHILDREN (8916)
  - SMALL INTESTINE, MASSIVE RESECTION, PHYSIOPATHOLOGY (8901)
  - SMALL INTESTINE, MASSIVE RESECTION, PHYSIOPATHOLOGY, LIPID MALABSORPTION (8914)
  - SMALL INTESTINE, MASSIVE RESECTION, SEGMENTAL INVERSION (8917)
  - SMALL INTESTINE, SEGMENTAL INVERSION, MALABSORPTION, PHYSIOPATHOLOGY (8894)
  - SPLANCHNICECTOMY, VAGOTOMY, DUODENAL ULCER (8892)
  - SUPERIOR MESENTERIC ARTERY, EMBOLECTOMY, INFARCT OF SMALL INTESTINE (9204)
  - TOTAL PANCREATECTOMY, CHRONIC PANCREATITIS, 3 YEAR FOLLOW-UP (9021)
  - TRACHEOTOMY, ESOPHAGEAL LESIONS (8792)
  - ULCERATIVE RECTOCOLITIS, LOWER MESENTERIC ARTERIO-VENOUS FISTULA, ARTERIOGRAPHY (8996)
  - URETEROILEOSTOMY, ECTOPIC BLADDER, CHILDREN (8942)
  - WHIPPLE RESECTION, CASE REPORTS (9193)

- SYNDROME
  - BUDD-CHIARI, VENOUS OCCLUSION, LIVER DISEASE (9062)
  - DUBIN-JOHNSON, CRIGLER-NAJAR, BILIRUBIN METABOLISM (9049)
  - MALLORY-WEISS, BOERHAANE'S, MANAGEMENT (8819)
  - PEUTZ-JEGHERS, SYMPTOMATOLOGY, POLYPE HISTOLOGY (8908)
  - TREHALOSE MALABSORPTION, MUSHROOM INTOLERANCE (8930)
  - WEBER CHRISTIAN, PHYSIOPATHOLOGY (9010)
  - ZOLLINGER-ELLISON, EARLY DIAGNOSIS, PENTAGASTRIN INFUSION METHOD (9252)
- THERAPY
  - COMBINED, CONSERVATIVE AND PSYCHOTHERAPY, ULCERATIVE COLITIS (8997)
  - CUCURBITACINES, HELMINTHIASIS, MOUSE (9280)
  - DRUG, DIET, MASSIVE SMALL INTESTINAL RESECTION (8905)
  - ELECTROLYTE AND FLUID ADMINISTRATION, PERFORATIVE PERITONITIS, PATHOGENESIS (9250)
  - ESOPHAGEAL ACHALASIA, SURGERY, RADIOLOGY (8823)
  - HEMORRHOIDS, ETIOLOGY, PATHOGENESIS (8952)
  - INTRAVENOUS HEPATIC OPOTHERAPY, BILHARZIASIS, LIVER (9281)
  - LIVER STEATOSIS, ESSENTIAL PHOSPHOLIPIDS, SERUM TRANSAMINASES (9099)
  - SERUM, BOTULISM TYPE I, RABBIT, MONKEY (9218)
- THYROID DISEASE
  - MYXEDEMA, PARALYTIC ILEUS, FLUID IMBALANCE, ELECTROLYTE (8941)•
- TOXIN
  - BOTULISM TYPE E, SERUM THERAPY, RABBIT, MONKEY (9218)
- TRANSPLANT
  - HETEROTOPIC, LIVER, ANATOMICAL AND PHYSIOLOGICAL REQUIREMENTS, PIG (9071)
  - HETEROTOPIC, LIVER, CHRONIC, INSUFFICIENCY, DECOMPENSATED, CIRRHOSIS, MAN (9072)
  - INTESTINE, REJECTION, LYMPHATIC REGENERATION (8958)
  - LIVER, REJECTION, MAN (9087)
  - ORTHOTOPIC, LIVER, CIRRHOSIS, REJECTION, ETIOLOGY (9073)
  - ORTHOTOPIC, LIVER, IMMUNOLOGY, ANATOMOPATHOLOGY, DOG (9086)
  - ORTHOTOPIC, LIVER, REJECTION, PIGLET (9092)
- TRANSPORT
  - CALCIUM, VITAMIN D, SMALL INTESTINE (8560)•
  - GLYCINE, ILEUM, SODIUM (8549)•
  - INTESTINAL, AMINO ACIDS, HIBERNATION, LIZARD (8558)•
  - INTESTINE, MONOSACCHARIDES, FASTING, DIABETES (8559)•
  - MONOVALENT CATIONS, ILEUM, SODIUM-ALANINE INTERACTION (8550)•

  - SODIUM, COLON, MAN, IN VITRO (8548)•
- TRAUMA
  - ABDOMEN, COLON PERFORATION, TRAFFIC ACCIDENTS (8945)
  - ACUTE ABDOMEN, IATROGENIC LESIONS, EMERGENCY MEASURES (9242)
  - DIAPHRAGM, RADIOLOGY, SURGERY (9235)
  - PANCREAS, DIAGNOSIS, THERAPY (9008)
  - PANCREAS, PHYSIOPATHOLOGY, SURGERY (9013)
- TRIGLYCERIDE
  - ACCUMULATION, LIVER, HEPATECTOMY (8606)•
- TUMOR
  - LIPOMA, LIVER, CASE REPORT (9077)
- TYPHOID FEVER
  - ILEUM, PERFORATION, SURGERY (8902)
- ULCER
  - CHRONIC GASTRIC, DUODENAL, SELECTIVE SURGERY (8881)
  - DUODENAL, FUNDIC MUCOSA, GASTRIC, HISTOPATHOLOGY, HIATAL HERNIA (8831)
  - DUODENAL, GASTRIC RESECTION, MORTALITY RATE, COMPLICATIONS (8884)
  - DUODENAL, SELECTIVE, VAGOTOMY, PARIETAL CELL MASS (8880)•
  - DUODENUM, HISTAMINE, INSULIN, GASTRIC SECRETION (8886)
  - DUODENUM, SPLANCHNICECTUMY, VAGOTOMY (8892)
  - GASTRIC, HEALING, ROENTGEN FEATURES, CARCINOMA (8836)
  - GASTRIC AND DUODENAL, HEMORRHAGE, INCIDENCE, CHILDREN (8890)
  - GASTRODUODENAL, INCIDENCE, DETECTION, YOUNG ADULTS (8895)
  - GASTRODUODENAL, PARTIAL GASTRECTOMY, ETIOLOGY, PATHOGENESIS (8870)
  - PEPTIC, COMPLICATIONS, ELECTRO-GASTROGRAPHY (8787)
  - PEPTIC, ESOPHAGUS, LUNG, PERFORATION, HIATAL HERNIA (8815)
  - PEPTIC, GASTRECTOMY, GASTRODUODENAL ANASTOMOSIS (8893)
  - PEPTIC, GASTRIC HYPERSECRETION, LONG-LASTING NEUTRALIZATION, FATTY ANTACID EMULSION (8862)
  - PEPTIC, PERFORATION, GASTRECTOMY, ANATOMOPATHOLOGY (8889)
  - PEPTIC, SULPIRIDE, GASTRIC EMPTYING, ANTICHOLINERGIC DRUGS (8887)
  - PEPTIC, SURGERY, REVIEW (8882)
  - PEPTIC, STOMACH, SULPIRIDE, CLINICAL USE (8888)
  - PERFORATION, HEMORRHAGE, STOMACH, DUODENUM (8885)
  - POSTOPERATIVE STRESS, HEMORRHAGE, DIAGNOSIS (8883)
  - RADIOLOGY, ANTRUM, PYLORUS (8827)•
  - RECTUM, COLITIS CYSTICA PROFUNDA, HISTOPATHOLOGY (8947)
  - STOMACH, ENDOSCOPY, HEALING PROCESS (8891)
  - STOMACH, SHAY RATS, BENZYE-TRI(β-PROPOXYETHYL)AMMONIUM IODIDE (8584)•
- ULCERATIVE COLITIS
  - ANGIOGRAPHY, GRANULOMATOUS COLITIS, DIFFERENTIAL DIAGNOSIS (8992)
  - CATAMNESIS, STATISTICS, MORTALITY RATE (8990)
  - COMBINED CONSERVATIVE THERAPY AND PSYCHOTHERAPY (8997)
  - CROHN'S DISEASE, THROMBOCYTOSIS, THROMBOSIS (8993)
  - IDIOPATHIC, HEMORRHAGE, HISTOPATHOLOGY ENDOSCOPY (8994)
  - LACTOSE INTOLERANCE, MILK INTAKE, INCIDENCE IN EUROPE (8934)
  - LARGE INTESTINE, PROGNOSIS, CONSERVATISM (8988)•
  - NOSOLOGY, ETIOLOGY, PATHOGENESIS (8991)
  - PROGNOSIS, IMPLICATION, ASSOCIATED ABNORMALITIES (8987)•
  - TOXIC MEGACOLON, ILEOSTOMY-COLOSTOMY (8999)
  - TOXIC MEGACOLON, PSYCHOSOMATIC ETIOLOGY, PHYSIOPATHOLOGY (8998)
- ULTRASTRUCTURE
  - BRUSH BORDER MEMBRANES, EPITHELIAL CELLS, GUINEA PIG INTESTINE (8508)•
  - INTESTINE, SPRUE, GLUTEN FREE DIET (8937)
  - LIVER, DARK CELL, MICROSCOPY (8522)
  - LIVER, HEPATECTOMY, 5-FLUOROURACIL RNA (8621)•
  - LIVER, MUCOPOLYSACCHARIDOSES, CHILDREN (9088)
  - LIVER CELLS, STEROID THERAPY, CONTRACEPTIVE (8515)•
  - LIVER CELLS, STEROIDS, PREGNANCY, TROPHOBLASTIC GROWTHS (8514)•
  - PIGMENT, CYTOPLASM, MITOCHONDRIA (9039)•
  - RAT LIVER MITOCHONDRIA, INNER MEMBRANE PROTEIN (8524)
- VAGOTOMY
  - SELECTIVE, PARIETAL CELL MASS, ULCER (8880)•
  - SELECTIVE, ULCER (8833)

LIBRARY U. OF I. URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, $300

If your address has changed and you wish to continue receiving this publication, please check here ______, enclose old address from this publication and fill in your new address below.

If you do not wish to continue receiving this publication, please check here ______ and enclose your name and address from this publication. Clip out this notice and return to: Scientific Communications Office, Gastroenterology Abstracts and Citations, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Maryland, 20014.

16.305
A

Vet. Med.

VETERINARY MEDICINE
LIBRARY

GASTROENTEROLOGY

ABSTRACTS
AND
CITATIONS

NATIONAL INSTITUTE OF ARTHRITIS AND METABOLIC DISEASES

THE LIBRARY OF THE
APR 30 1971
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Public Health Service

National Institutes of Health

VOLUME 5
INDEX ISSUE
1970

LIBRARY U. OF I. URBANA-CHAMPAIGN

PLEASE NOTE

DUE TO A CHANGE IN CONTRACTOR FOR THE PREPARATION OF GASTROENTEROLOGY ABSTRACTS AND CITATIONS FROM VOLUME 5 TO VOLUME 6, THERE WILL BE A SLIGHT DELAY BEFORE YOU WILL BE RECEIVING THE FIRST ISSUE OF VOLUME 6. YOU SHOULD RECEIVE THE FIRST ISSUE APPROXIMATELY ONE MONTH AFTER RECEIPT OF THIS INDEX ISSUE.

LIBRARY U. OF I. URBANA-CHAMPAIGN

DESCRIPTION OF INDEXES

SUBJECT and AUTHOR INDEXES for Gastroenterology Abstracts and Citations, Volume 5, are produced from on-line computer print-out of key-punched cards.

The SUBJECT INDEX is based on a hierarchial system of classification in which *major index terms* are modified by one or more *key word descriptors*. The *key word descriptors* are listed in decreasing order of importance and describe the content of the abstract or citation. In addition, in this indexing system, some *key word descriptors* will also be used as *major index terms*, thus providing in-depth indexing of each document. An abstract or citation number, in brackets, will be found after the *key word descriptors*. Abstracts will be identified by an asterisk outside of the brackets.

An illustrative example of this indexing system follows:

INTESTINE, LARGE

Colon, Carcinoma, Radiological Detection, Rectum (0188)*

COLON

Cancer, Polyps, Radiological Detection (0188)*

RECTUM

Cancer, Polyps, Precancerous (0188)*

CANCER

Large Intestine, Detection, Radiology (0188)*

DIAGNOSIS

Radiology, Cancer, Large Intestine (0188)*

LIBRARY U. OF I. URBANA-CHAMPAIGN

umbers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

SUBJECT INDEX

- BDOMEN
  - ACUTE, ANTICOAGULANTS, INTESTINAL HEMORRHAGE, THERAPY (8478)
  - ACUTE, ASCARIASIS, PANCREAS (7007)
  - ACUTE, DIAGNOSIS, SURGERY (3738)
  - ACUTE, GASTROINTESTINAL TRACT PERFORATIONS, MORTALITY RATE, ANATOMOPATHOLOGY (9241)
  - ACUTE, INTESTINAL INFARCT (1206)
  - ACUTE, LESIONS, AMMONIA, ULCER (6572)
  - ACUTE, LEUCOCYTOSIS, ACUTE HEMORRHAGE, METABOLIC DISORDERS (9239)
  - ACUTE, PAIN, PANCREATITIS, CHOLELITHIASIS, PYRAZOLONE DERIVATIVE, SPASMOLYTIC, INTOXICATION (5369)
  - ACUTE, PANCREATITIS, ATHEROSCLEROSIS (7688)
  - ACUTE, PANCREATITIS, TRANSAMINASE, CREATINE PHOSPHOKINASE, DUODENAL JUICE, STOOLS (5666)
  - ACUTE, POSTTRAUMATIC (0700)
  - ACUTE, RADIOLOGY, ABDOMINAL VASCULATORY DISORDERS, ANGIOGRAPHY (8763)
  - ACUTE, SYMPTOMATOLOGY, ETIOLOGY, PAIN (9238)
  - ACUTE, TRAUMA, IATROGENIC LESIONS, EMERGENCY MEASURES (9242)
  - AMEBIC DYSENTERY, INTESTINAL COMPLICATIONS, HEPATIC AMEBIASIS, FEVER (6253)
  - ANGIOGRAPHY (4931)
  - ANGIOGRAPHY, GASTROINTESTINAL HEMORRHAGE, AORTA, CAVOGRAPHY, PATHOMORPHISM, BARIUM, GALLBLADDER (4949)
  - AORTOGRAPHY, SURGERY (5359)
  - APOPLEXY, HEMORRHAGE (5387)
  - APOPLEXY, MESOCOLON, HEMATOMA, PURPURA (0455)
  - ATONIA, SURGERY, PREOPERATIVE PREPARATION (6977)
  - BILHARZIASIS, EPIDEMIOLOGY, METEORISM (7008)
  - BLUNT INJURY, ESOPHAGUS, DUODENUM (3729)
  - BLUNT TRAUMA (8462)
  - BLUNT TRAUMA, BILE DUCT AVULSION, CHILD (4581)
  - BUERGER'S DISEASE, INTESTINE, WALL PERFORATION (2996)
  - CAVITY, BILE EFFUSION, CHOLANGIOGRAPHY (3306)
  - CLOSED TRAUMA, PANCREAS RUPTURE, SURGERY, ANTIBIOTIC (2783)
  - DIAPHRAGMATIC HERNIA, CYANOSIS, NEONATE, CONGENITAL (5049)
  - DISEASE, DIAGNOSIS, ANGIOGRAPHY, ISOTOPE SCANNING (7220)*
  - EMBRYONIC DEVELOPMENT, OMPHALOCELE, GASTROSCHISIS (8846)
  - EMERGENCY, METHEMALBUMIN, PANCREATITIS (6940)*
  - ENTEROCOLITIS, CARDIOVASCULAR, STENOSIS, METEORISM (6947)
  - EXPLORATORY LAPAROTOMY, DIAGNOSTIC PROCEDURE, INDICATIONS (8032)
  - FEVER, LYMPHOGRANULOMATOSIS, IRRADIATION, HODGKIN'S DISEASE (6539)
  - FIBRODYSPLASIA, POLYPOSIS COLI, SURGERY (5100)
  - FRONT WALL, PROJECTION OF SMALL INTESTINE, JAPAN (8530)
  - GASTROSCHISIS, GASTROSTOMY, LAPAROTOMY (2954)
  - HIDDEN INJURIES, DIAGNOSIS (7236)
  - HODGKIN'S DISEASE, SURGERY, DIAGNOSIS (4911)
  - IATROGENOUS INJURY, PERFORATION, STENOSIS, JAUNDICE (6221)
  - INTESTINAL OCCLUSION, ADHESIONS, INTRAPERITONEAL ABSCESS (5334)
  - LIVER BIOPSY, LAPAROSCOPY (4063)
  - MASS, NEONATE, RADIOLOGY (6963)
  - OBTUSE TRAUMA, CHOLEDOCHUS RUPTURE (4529)
  - PAIN, AMPULLA OF VATER OBSTRUCTION, PANCREAS (6916)
  - PAIN, CARCINOMA, PANCREAS, STEATORRHEA (6739)
  - PAIN, CONVULSIONS, SHIGELLOSIS, COPROCULTURES, ANTIBIOTICS, MENINGITIS, INFANTS (5740)
  - PAIN, DYSPEPSIA, ULCER, PANCREATITIS (6551)
  - PAIN, INFANCY (7738)
  - PAIN, LIPOMA, OCCLUSION, HEMORRHAGE (6676)
  - PAIN, LYMPHOMA, JEJUNAL MUCOSA, ALPHA GLOBULIN (5346)
  - PAIN, PANCREATITIS, BILIARY LITHIASIS, AMYLASE, LIPASE (5153)
  - PAIN, PANCREATITIS, PANCREATIC CARCINOMA, PSEUDOCYST, TRAUMA, ABSCESS (5144)
  - PAIN, SURGERY (8438)
  - PRESACRAL MASSES, RADIOLOGY, CHILDREN (7489)
  - RADIOGRAPHY, EMERGENCY (4071)
  - RADIONUCLIDE, AORTOGRAPHY, GAMMA SCINTILLATION CAMERA (5671)
  - RECURRENT PAIN, CHILDREN, IRRITABLE BOWEL SYNDROME (6212)
  - SELECTIVE ARTERIOGRAPHY, SAFEGUARDS AGAINST MISUSE (2532)
  - SELECTIVE HYPOTHERMIA, ACUTE PANCREATITIS (7206)
  - STOMACH, DUPLICATION, INTRATHORACIC (4165)
  - SURGERY, LIVER FUNCTION, SERUM PROTEIN FRACTIONS (0579)
  - SURGERY, PREMATURE CORRECTIVE INTERVENTION (9246)
  - TERATOMA, INFANT, RADIOLOGY (4914)
  - TRAUMA, BATTERED CHILD (1517)
  - TRAUMA, DIAGNOSIS, THERAPY (7255)
  - TRAUMA, DUODENAL, ADRENAL GLAND, PANCREAS (6541)
  - TRAUMA, INTESTINAL DAMAGE, SURGERY (7714)
  - TRAUMA, LAPAROSCOPY, PERITONEAL HEMORRHAGE, SCINTIGRAPHY, PERFORATION, SURGERY, HEMATOMA (4909)
  - TRAUMA, LIVER, SMALL BOWEL, STOMACH, PANCREAS (5390)
  - TRAUMA, MECKEL'S DIVERTICULUM (7417)
  - TRAUMA, PANCREATIC INJURY, SURGERY (8232)
  - TRAUMA, PSEUDOMYXOMA PERITONEI, INTESTINAL RUPTURE, CACHEXIA, TUMOR,

- DIGESTIVE DIFFICULTIES (6239)
- TRAUMA, RADIOLOGY, CHILDREN (4920)
- TRAUMA, SURGERY (2231)
- VAGOTOMY, INSULIN TEST, DIARRHEA (3712)
- WALL, ELECTRIC POTENTIAL, ANTRAL-PYLORIC EFFECT (3902)
- WALL, GAS GANGRENE, APPENDECTOMY (1251)
- WALL, HEMATOMA, VITAMIN K (4617)
- WALL ANTERIOR, PHYCOMYCOSIS, INTESTINE (2729)
- WHIPPLE'S DISEASE, CORYNEBACTERIA, DIFFUSE PAIN, FROTHY HISTIOCYTES, ELECTRON MICROSCOPY (5887)*

ABSCESS
- AMEBIC, LIVER (7762)
- AMEBIC, LIVER, GENERAL OBSERVATIONS (2058)
- AMEBIC, LIVER, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
- AMEBIC, LIVER, RUPTURE, PREGNANCY (7012)
- AMEBIC, LIVER, SCAN (7016)
- AMEBIC, TREATMENT, LIVER SCANNING (3782)
- APPENDIX, HERNIA (5113)
- APPENDIX, MECHANICAL ILEUS, TREATMENT (1252)
- COLON, SURGERY, HEALING (5101)
- DISCONTINUOUS, INTESTINE (LARGE) (0457)
- HEPATIC, DRUG INFUSION, UMBILLICAL VEIN (6039)
- HEPATIC AMEBIC, HEALING RATE, SCAN (7015)
- HEPATIC CHOLELITHIC (4437)
- LIVER, AMEBIASIS, HEPATITIS (2089)
- LIVER, ANGIOGRAPHY, AMEBA (4034)
- LIVER, ANGIOGRAPHY, GRANULOMA (3560)
- LIVER, APPENDICITIS (3494)
- LIVER, ASCARIS (5399)
- LIVER, DIAGNOSIS, CHOLANGIOGRAPHY (2405)
- LIVER, HEPATITIS, NON-VIRAL (1375)
- LIVER, PYOGENIC, GAS, KLEBSIELLA (2336)
- LIVER, SCINTILLOGRAPHY, DIAGNOSIS (4081)
- LIVER, SURGERY (5208)
- PANCREAS, ACUTE PANCREATITIS (2029)
- PANCREAS, SERRATIA MARCESCENS, MAN (1341)
- PERIHEPATIC, INTRAHEPATIC, BACTERIOLOGY (3605)
- SUBPHRENIC, LIVER, SURGERY, RADIOLOGIC DIAGNOSIS AND CONTROL (3614)

ABSORPTION
- ADVANCED AGE, DIGESTION, PANCREAS, SMALL INTESTINE (2964)
- ALPHA-TOCOPHEROL, INTESTINE, MALABSORPTION (3438)*
- AMINO ACID, COLON, JEJUNUM (2342)*
- AMINO ACID, CYSTINURIA, TRANSPORT DEFECT (1963)*
- AMINO ACID, VITAMIN D, ALPHA-AMINO-ISOBUTYRIC ACID (7055)*
- ANTITUBERCULOUS DRUGS, POST-RESECTION, GI TRACT (1899)
- ASPIRIN, SULFONAMIDE, PH, IN VITRO MODEL (5487)*
- ATROPINE SULFATE, N-BUTYL HYOSCINE BROMIDE, SPASMOLYTIC POTENCIES, DOG (0056)
- BICARBONATE, IONS, ILEUM, TRIPLE-LUMEN PERFUSION SYSTEM (3089)*
- BILE, EXCRETION, CARDIOGLYCOSIDE (4479)*
- BILIRUBIN, GALLBLADDER, SURGICAL TECHNIQUE, DOG (3101)*
- CALCIUM, DUODENUM, CHRONIC RENAL DISEASE, RATS (0037)
- CALCIUM, INTESTINE, FASTING PATIENTS (3111)
- CALCIUM, INTESTINE, VITAMIN D3 (6355)*
- CALCIUM, LIVER DISEASE, CHRONIC PANCREATITIS, ULCER, PEPTIC (0035)
- CALCIUM, PARATHYROID GLANDS (6350)*
- CALCIUM, SMALL INTESTINE, LACTOSE, DIET (0034)
- CALCIUM, SMALL INTESTINE, RENAL INSUFFICIENCY (7728)
- CALCIUM, SMALL INTESTINE, RICKETS, VITAMIN D DEPENDENT (3420)*
- CALCIUM, SMALL INTESTINE, VITAMIN D3, STRONTIUM (4775)
- CALCIUM, VITAMIN D, RICKETS, RAT (8555)*
- CARBOHYDRATE (1638)
- CARBOHYDRATE, MEMBRANE PERMEABILITY, DIARRHEA (4870)*
- CARBOHYDRATES, BLOOD CALCIUM LEVELS, MAN (8563)
- CELL TRANSPORT, GASTROINTESTINAL TRACT (5498)
- CHOLESTEROL, METABOLISM (5682)
- COBALT, COMPOUND BOND, GASTROINTESTINAL TRACT, LIVER (3116)
- COBALT, INTESTINE, CIRRHOSIS, HEMOCHROMATOSIS (5072)*
- COLON, EDTA, ULCERATIVE COLITIS (595
- COLON, ELECTROLYTE, PERFUSION, BILE ACID (7060)*
- COLON, VITAMIN B, FLORA (8564)
- COPPER, DOSAGE FORM, ILEUM, NEONATAL RAT (0758)*
- DELAYED-ACTION COMPOUNDS, SIDE-EFFECT (4655)
- DIGESTION, AGE DEPENDENCY, GASTROINTESTINAL TRACT (7849)
- DIGOXIN, PERFUSION STUDY, INTESTINE, RAT (5504)
- DRUG, AGE FACTORS, METABOLISM, RESERPINE (1781)
- DRUG, GASTROINTESTINAL TRACT, FACTOR (3121)
- DRUG, INTESTINAL, MESENTERIC BLOOD FLOW (5501)
- DRUG, INTESTINE, DAMAGE, TRIPARANOL, IRRADIATION, RAT (5855)*
- DRUG, METABOLISM, INTESTINE, GLUCURONIDE CONJUGATION (2355)
- DRUG, MODEL, GASTROINTESTINAL TRANSPORT (3871)
- DRUG, PHYSIOCHEMICAL PROPERTIES, GASTROINTESTINAL TRACT (1636)

DRUG, SMALL INTESTINE, BILE SALT (3863)*
DRUG, SMALL INTESTINE, POLYSORBATE 80, OLEIC ACID, RAT (5502)
DRUG, TRANSPORT, MODEL, GASTROINTESTINAL TRACT (3870)
DUODENUM, ILEUM, DRUGS, CARBONIC ANHYDRASE (7062)*
ELECTROLYTE, WATER, COLON, PROCTOCOLITIS (3463)*
ELECTROLYTES, WATER, RECTUM, COLON, MAN (7845)
FAT, DIGESTION, ENZYME (4773)
FAT, FECAL, 14C-TRIGLYCERIDE, STEATORRHEA (3443)*
FAT, MARASMUS, JEJUNUM, CHILDREN (6224)
FAT, SMALL INTESTINE, CHILDREN (4041)
FAT, STOMACH, GASTRECTOMY (3367)
FATTY ACID, BILE SALT, MICELLE, JEJUNUM, TRACER STUDIES (2338)*
FOOD LOAD, MUCOSA, ENZYMES (7827)*
FRUCTOSE, GLUCOSE, SERUM FREE FATTY ACID, TRIGLYCERIDES (6358)*
GASTROINTESTINAL, IRON, IRON CHELATES, FE EDTA, MUCOSAL BARRIER (3995)*
GASTROINTESTINAL, POLYMERS, DRUGS (6376)
GASTROINTESTINAL TRACT, CEPHALEXIN, ULCER (8835)
GASTROINTESTINAL TRACT, KEROSENE, PNEUMONITIS (5497)
GASTROINTESTINAL TRACT, COPPER 64, RAT (2353)
GASTROINTESTINAL TRACT, DRUGS, AVAILABILITY, IN VITRO (3865)*
GASTROINTESTINAL TRACT, ENZYME, DRUG EFFECT, PEPSIN, PANCREAS (2489)
GASTROINTESTINAL TRACT, TAURINE, GLYCINE, ASPIRIN, SMALL INTESTINE (5503)
GLUCOSE, GASTRIC RESECTION, ILEUM, VITAMIN B12, PERISTALSIS, MALIGNANT TUMOR (5083)
GLUCOSE, HISTIDINE, SMALL INTESTINE, STARVATION (2340)*
GLUCOSE, JEJUNAL LOOP, WATER, NA, CI (6367)
GLUCOSE-GALACTOSE, DIAGNOSIS (4253)
GLUCOSE-GALACTOSE, VARIATION, RENAL GLUCOSURIA (3453)
HYDROGEN ION, SODIUM, GASTRIC MUCOSA (7833)*
ILEUM, SALT LOADING, CAT (4783)
ILEUM POTENTIAL, ALANINE, GLUCOSE (7844)
INTESTINAL, BLOOD FLOW (6364)
INTESTINAL, D-XYLOSE TEST, PROTEIN MALNUTRITION, RENAL (1213)*
INTESTINAL, DRUG, IN VIVO, IN VITRO (2473)*
INTESTINAL, EVERTED GUT TECHNIQUE (5479)*
INTESTINAL, FREE AMINO ACIDS, PROTEIN (5483)*
INTESTINAL, GASTRITIS, RESORT TREATMENT (8129)
INTESTINAL, MOTILITY, HYPOTHERMIA, PERFUSION, O2 UTILIZATION (5615)*
INTESTINAL, MUCOSA, TANNIC ACID, GLUCOSE, BUTYRIC ACID, METHIONINE, MOUSE (4780)
INTESTINAL, RAT, AMINO ACIDS (6360)
INTESTINAL, SUGAR, SODIUM, DIABETIC RATS (8554)*
INTESTINAL, XYLOSE, DRUG EFFECTS, RABBITS (0036)
INTESTINAL TRANSFER, MECHANISMS (3132)
INTESTINE, BLOOD FLOW, WATER (4774)
INTESTINE, CALCIUM, PHOSPHORUS, LACTOSE TOLERANCE (5612)*
INTESTINE, CALCIUM AND PHOSPHORUS, SIMULTANEOUS INTRAVENOUS INFUSION, PIG (8571)
INTESTINE, DRUG, SALICYLIC ACID, BARBITAL (7071)*
INTESTINE, FOOD INTERACTION, DRUG INTERACTION, RAT (7846)
INTESTINE, HEMOGLOBIN, IRON, RAT (5490)*
INTESTINE, INTRINSIC FACTOR, VITAMIN B12 (2336)*
INTESTINE, IRON, REGULATION, FERRITIN (4755)*
INTESTINE, LIVER, VITAMIN B12, WHOLE BODY SCANNING, RADIOACTIVE COBALT (5075)*
INTESTINE, MALARIA, AMINO ACID (6275)
INTESTINE, PHARMACOKINETICS, MATHEMATICAL PROCEDURES (7851)
INTESTINE, PROTEIN, ENZYME (4767)
INTESTINE, SODIUM, AMINO ACID (6349)*
INTESTINE, SODIUM, SUGAR (4771)
INTESTINE, TETRACYCLINE, RAT (4778)
INTESTINE, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (5380)
INTRAABDOMINAL, EVANS BLUE LABELED PROTEIN, DOG (8561)
IRON, ACCUMULATION IN DUODENAL MUCOSA, THALASSEMIA, CHILDREN (8752)
IRON, ADDISONIAN PERNICIOUS ANEMIA (0759)*
IRON, AMINO ACID, CYSTEINE, METHIONINE (6353)*
IRON, BILE DUCT, GALLBLADDER, BILE TRACERS (3664)*
IRON, CALCIUM, VITAMIN B-12, PROXIMAL GASTRIC RESECTION (1020)*
IRON, CIRRHOSIS, PORTACAVAL SHUNT, DOGS (6114)*
IRON, DIETARY FACTORS, ACHYLIA GASTRICA, IRRADIATION (2329)*
IRON, EDTA, CHELATION (3882)
IRON, GASTROINTESTINAL TRACT, COBALT (7832)*
IRON, GASTROINTESTINAL TRACT, SEX FACTORS (1635)
IRON, ORAL DOSAGE FORMS (3869)
IRON, PROXIMAL GASTRIC RESECTION, GASTRIC AND PANCREATIC FUNCTION (1020)*
IRON, QUANTITATION, WHOLE-BODY COUNTING (7842)
IRON, SMALL INTESTINE, IRON DEFICIENCY, TRACER STUDY (3866)*
IRON, STOMACH, POST-GASTRECTOMY (1021)*
IRON, SUCCINIC ACID (6357)*

    IRON, VITAMIN B12, ATROPHIC GASTRITIS (6651)
    JEJUNUM, AMINO ACID, NUTRITIONAL RICKETS, MAN (0773)
    JEJUNUM, IMPAIRED, AMINO ACID (7835)*
    LACTOSE, AGE FACTORS, GLUCOSE, GALACTOSE, PREGNANCY, GROWTH RETARDATION (2337)*
    LACTOSE, IRON UTILIZATION, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
    LACTOSE INTOLERANCE (7448)
    LIPID, SMALL INTESTINE, BLOOD SUPPLY, MICELLE (4766)*
    LIPID, STOMACH, LIPOLYSIS (7065)*
    LIPIDS, DUODENAL EPITHELIUM, EXPOSURE TO CE144, RAT (8569)
    LIVER, TUMOR, K+, Rb+ (6354)*
    LYMPH, CORN OIL, EXCRETION (7828)*
    LYSINE, HEAT DAMAGE, GLUCOSE (7066)*
    MEDIUM CHAIN TRIGLYCERIDE, LOW-WEIGHT INFANT (2326)*
    NITROGEN, FAT, MINERALS, KWASHIORKOR, CHILDREN (8483)
    PENTAZOCINE, ORAL AND INTRAVENOUS ADMINISTRATION (3113)
    PERITONEAL CELL, 125 I LABELED HUMAN SERUM ALBUMIN, MOUSE (7839)
    PHENOL RED, NA-DEOXYCHOLATE, INTESTINE (3868)
    PROTEIN, AMINO ACIDS, JEJUNUM, DUODENUM (5482)*
    PROTEIN, DIGESTION, MAN (4768), (4769)
    PROTEIN, TANNIC ACID (7076)
    RADIOIRON, NEOMYCIN, GERMFREE RATS (7829)*
    REABSORPTION, IONS, WATER, LUMEN CONCENTRATION, RECTUM, COCKROACH (3114)
    RIBOFLAVIN, SMALL INTESTINE, CHILDREN, AGE FACTOR (3099)*
    SECRETION, TRACER TECHNIQUE, LIVER, ULCER, HEPATITIS, GASTRITIS (2825)
    SMALL INTESTINE, ACTIVE TRANSPORT, MYO-INOSITOL, SUGAR BINDING SITES (3877)
    SMALL INTESTINE, AMINO ACID (2345)
    SMALL INTESTINE, AMINO ACID, CARNOSINE, HARTNUP DISEASE (5475)*
    SMALL INTESTINE, CHOLESTEROL, TRACER STUDIES (3103)*
    SMALL INTESTINE, D-ARABINOSE, DIFFUSION (2325)*
    SMALL INTESTINE, DRUG COATING, PROTECTION AGAINST GASTRIC JUICE (8567)
    SMALL INTESTINE, DUODENUM, THIRY-VELLA LOOPS, DOG, L-ALANINE, SODIUM EFFECT (5489)*
    SMALL INTESTINE, EPITHELIAL CELL, CARBOHYDRATE METABOLISM (7989)
    SMALL INTESTINE, GLYCINE (2615)
    SMALL INTESTINE, GLYCOSIDES, RAT (0767)*
    SMALL INTESTINE, INDICATOR (1632)*
    SMALL INTESTINE, LIPID, ENZYME (3867)*
    SMALL INTESTINE, LIPID, XYLOSE, POSTRESECTION SYNDROME (0037)
    SMALL INTESTINE, OBSTRUCTION, BLIND LOOP SYNDROME (3452)
    SMALL INTESTINE, PEPTIC ULCER (5888)
    SMALL INTESTINE, PREGNANCY, LACTATION (4753)
    SMALL INTESTINE, PROTEIN, CARBOHYDRATE, FAT, CHOLECYSTOJEJUNOSTOMY (4764)*
    SMALL INTESTINE, PROTEOLYTIC ENZYME (6368)
    SMALL INTESTINE, RIBOFLAVIN, EXCRETION (7068)*
    SMALL INTESTINE, SECRETION, DIGESTION (3235)
    SMALL INTESTINE, SUGAR, WATER (4784)
    SMALL INTESTINE, WATER, CHLORIDE, SODIUM, GLUCOSE, HYPOPHYSECTOMY, RAT (4756)*
    SODIUM, BICARBONATE, JEJUNUM, MECHANISM (3100)*
    STOMACH, ACETYLSALICYLATE, PH (3104)*
    STOMACH, ACETYLSALICYLIC ACID, GASTRIC LESIONS, AUTORADIOGRAPHY (3102)*
    STOMACH, ETHANOL, ACID OUTPUT (5494)*
    STOMACH, INTESTINE, ISONIAZID (6366)
    STOMACH, IRON, VITAMIN B12 (1757)
    STOMACH, MUCOSA, ACETOSALICYLIC ACID (3098)*
    STOMACH POUCH, SURFACTANT, HYPERABSORPTION (7843)
    SUCROSE, METABOLITE, INTESTINE (7850)
    SULFAGUANIDINE, SMALL INTESTINE, BILE SALT (5477)*
    TEST, VITAMIN A (3267)*
    THIAMINE, ANALOGS, GRADIENT LEVELS (3880)
    THIAMINE, PANCREAS, THIAMINE PYROPHOSPHOKINASE, PHOSPHORYLATION, INTESTINAL TRANSKETOLASE (5143)
    3-DEHYDRORETINOIC ACID, METABOLISM, BIOLOGICAL POTENCY (7210)
    TRANSPERITONEAL EXCHANGE, OSMOSIS, HYPEROSMOLARITY, GLUCOSE INFUSION (4758)*
    TRIGLYCERIDES, DUODENUM, RAT (0032)*
    URINE CONTENTS, JEJUNUM, ILEUM, DOG (0029)*
    VITAMIN, ARTHRITIS (1625)*
    VITAMIN B12, ILEOSTOMY, ULCERATIVE COLITIS (3506)*
    VITAMIN B12, MALABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
    VITAMIN B12, PERNICIOUS ANEMIA, ACHLORHYDRIA (7275)
    VITAMIN K1, GASTROINTESTINAL ABSORPTION, RADIOISOTOPES TRACING, URINE, FECES, PLASMA (4757)*
    WATER, CHLORIDE, SMALL INTESTINE (2334)*
    WATER, ILEUM, ELECTROLYTE, ATPASE, ULTRASTRUCTURE (4713)*
    WATER, SODIUM, JEJUNUM, POST-ABDOMINAL (2657)*
    WATER, VILLI, JEJUNUM, DOG (0766)*
    WHEAT PROTEIN, LYSINE AND THREONINE, DIGESTION (7054)*
    ZINC, LACTOSE, RETENTION (1642)
ACANTHOMA
    GASTRIC, NUCLEIC ACIDS, HISTOMORPHOLOGY, HISTOCHEMISTRY (0019)
ACETAZOLAMIDE
    PANCREAS, ENZYME SECRETION, OUABAIN,

ATPASE, RABBIT (0809)•
ACETOSALICYLIC ACID
    STOMACH, MUCOSA, ABSORPTION (3098)•
ACETYLCHOLINE
    CONTROL, GLUCONEOGENESIS, PERFUSED LIVER, RAT (8645)
    SECRETION, PANCREATIC, BILIARY, REGULATOR (6416)
ACETYLCHOLINESTERASE
    HIRSCHSPRUNG'S DISEASE, PERISTALSIS (6717)
ACHALASIA
    CARDIA, ESOPHAGEAL CARCINOMA (3322)
    CARDIA, ESOPHAGUS, SURGERY (3333), (4972)
    CARDIAC, PYLORIC SPASM, STOMACH DILATATION, SURGERY, CARDIOMYOTOMY, PYLOROPLASTY, CHILDREN (4963)
    CHILDREN, SYMPTOMOLOGY, BRONCHOPULMONARY (0612)
    DIAGNOSIS, DIFFERENTIAL, CARDIA AND GASTRIC CARCINOMA (0252)
    ESOPHAGEAL, HYPERMOTILITY, SPASM, SPHINCTER (6601)
    ESOPHAGEAL, SURGERY, PH, REFLUX (5758)
    ESOPHAGUS, DYSPHAGIA, CARDIAL TUBE, CARDIOMYOTOMY, DILATATION (5760)
    ESOPHAGUS, ESOPHAGO-ESOPHAGEAL, FISTULA (2562)
    ESOPHAGUS, HIATAL HERNIA, DYSRHYTHMIA (2563)
    ESOPHAGUS, MANAGEMENT (5751)
    ESOPHAGUS, STENOSIS, HYPERMOTILE, RADIOLOGY (2554)
    ESOPHAGUS, SURGERY, ESOPHAGITIS (2578)
    NEUROLOGICAL, LESION, ACHALASIA (8077)
    NEUROMUSCULAR MECHANISM, ESOPHAGEAL HISTOLOGY, RADIOLOGY (8068)
ACID
    DUODENUM, PEPSIN, STOMACH, SECRETIN (2369)•
    PEPSIN, ACUTE ESOPHAGITIS MODEL (8055)•
    SECRETION, GASTRIC, HISTALOG (6396)•
    SECRETION, GASTRITIS, PYLORUS (3362)
    SECRETION, PARIETAL CELL, GASTRITIS (3339)•
    SECRETION, STOMACH, ANTICHOLINERGICS, HISTALOG (6612)•
    STOMACH, ACHLERHYDRIA, FREEZING, HEATING, ULCER TREATMENT (5828)•
    STOMACH, SECRETION, CHOLECYSTOKININ (2374)•
ACID-BASE
    ACID INGESTION, CICATRISING LESIONS, SURGERY (7357)
    ACID OUTPUT, STOMACH, DISTENTION, STIMULUS, HISTAMINE, PENTAGASTRIN (5533)•
    ACID PRODUCTION, GASTRIC CARCINOMA (5769)
    ACIDITY, STOMACH, GASTRIN, PENTAGASTRIN, MOTILITY, ANTRAL MUCOSA (4808)
    ALKALOID, LIVER, TOXICITY, RAT (5239)
    ALPHA-KETO ACID, TYROSINE AMINOTRANSFERASE, LIVER, EMBRYO (5463)
    GASTRIC ACID, CEREBRAL INHIBITION, SECRETION ATROPINE, INSULIN, HISTAMINE, SEROTONIN (5536)
    GASTRIC SECRETION, ULCER OPERATION, STOMACH TUBE, PH (5653)•
    REDOX CHANGES, LIVER, CYTOCHROME P-450, OXYGEN ACTIVATION, ENDOPLASMIC RETICULUM, RABBIT (4822)•
    RESPIRATORY ALKALOSIS, LIVER, CIRRHOSIS, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA (5292)
    STOMACH, EROSION, ALKALI INGESTION (5793)
    STOMACH, SECRETION, DUODENAL ULCER (5033)
    TANNIC ACID, PROTEIN, ABSORPTION (7076)
    URIC ACID, STOMACH ACID SECRETION, TRANSPORT, MUCOSA (4761)•
ACID-BASE BALANCE
    LIVER, CIRRHOSIS, PERFUSION (2136)
ACID PEPTIC DISEASE
    BELLADONNA THERAPY, GASTRIC SECRETIONS, STOMACH (1137)
ACIDITY
    ATP, SODIUM BINDING, MAGNESIUM BINDING, CELLULAR MEMBRANE, EDTA, LIVER MICROSOME (5449)
    CALCIUM, ACID OUTPUT, HYPERSECRETION (7679)•
    GASTRIC, AGE, HISTAMINE, MICE (6407)
    GASTRIC, RADIOTELEMETRY (7261)
    GASTRIC JUICE, ION-EXCHANGE RESINS (7240)
    GASTRIN, ESOPHAGEAL SPHINCTER, STOMACH (3890)•
    PH CHANGE, CARDIAC SPHINCTER, DIGESTION (1613)
    STOMACH, SECRETION, HYPEROSMOLAL (7089)•
    STOMACH, 2-DEOXY-D-GLUCOSE, GASTRIC FISTULA, DOG (2389)
    STOMACH, TELEMETRIC DETERMINATION, ACID SECRETION (5548)
ACIDITY TITRATION
    DIAGNOSIS, TELEMETRIC CAPSULE, GASTRIC SECRETION (0185)•
    DIAGNOSTIC PROCEDURE, STOMACH, GASTRIC ACID, HEIDELBERG PH CAPSULE (5656)•
    DUODENAL ULCER, GASTRIC ULCER, BLOOD GROUP ABO, BLOOD GROUP ABH, SECRETION, HISTAMINE (2594)
    GASTRIC JUICE (2381)
    GASTRIC JUICE, DUODENUM, NEUTRALIZATION (7191)•
    PHENOLPHTHALEIN, ACID OUTPUT (5532)•
    STOMACH, PH, ION CONCENTRATION, BUFFERS (3908)•
ACINAR CELL
    DIFFERENTIATION, DNA AND PROTEIN SYNTHESIS, EMBRYO, ORGAN CULTURE, RAT (0749)•
    PANCREAS, EXOCRINE FUNCTION, ULTRASTRUCTURE (1590)•
    PANCREAS, VACUOLATION, MORPHOLOGY, HISTOCHEMISTRY, RAT (3038)•
    PANCREATIC ISLET CELLS, ADULT CAT (3080)
ACTH
    ENZYME, HISTOCHEMISTRY, JEJUNUM, COLON, RAT (0169)

  - ENZYME, MUCOSA, INTESTINE, CORTISONE (3853)
  - ULCERATIVE COLITIS, CORTICOSTEROID (4313)
- ACTIN
  - INTESTINE, SMOOTH MUSCLE, PROTEIN (3231)
- ACTINOMYCIN
  - D, ENZYME, CYCLOHEXAMIDE, INTESTINE, EPITHELIAL CELLS (4692)*
  - LIVER, POLYSOME, ENDOPLASMATIC NETWORK, RIBOSOME (2819)
  - RNA SYNTHESIS, RAT LIVER CHROMATIN, CORTISOL, RNA POLYMERASE (4710)*
- ADDICTION
  - AUSTRALIA, ANTIGEN, VIRAL, HEPATITIS (6860)*
  - VIRAL, HEPATITIS (6857)*
- ADENOCARCINOMA
  - APPENDIX, PSEUDOMYXOMA PERITONEI, NEURAMINIDASE (8208)
  - CYST, ADENOMA, PANCREAS (4334)
  - EXCLUDED LOOP OF ILEUM, REGIONAL ILEITIS, SURGERY (8163)
  - INTUSSUSCEPTION, APPENDIX (2716)
  - JEJUNUM (3432)
  - MUCOID, ANORECTAL FISTULA (3501)
  - PANCREAS, ISLET CELL, VATER'S PAPILLA, ANEMIA (6744)
  - RECTAL AMPULLA, RECTOSIGMOID, ABDOMENO-PERINEAL RESECTION (1263)
  - SECONDARY TO PANCREATITIS, ACUTE, HYPERCALCEMIA, HYPERURICEMIA, HYPERTENSION (2795)
  - STOMACH, EPITHELIAL CELLS, N-METHYL-N'-NITRO-N-NITROSOGUANIDINE (6610)*
  - STOMACH, LIVER, SMALL INTESTINE, MESENTERY, RAT (4133)*
  - STOMACH, MUCOSA (3837)
  - UTERINE, PROGESTERONE AGENT TREATMENT, HEPATIC FUNCTION, SUGAR METABOLISM (3578)
  - VILLOUS, RECTUM, ELECTROLYTE, COLON (3471)
- ADENOMA
  - COLON, SURGERY (2710)
  - GALLBLADDER, LIPOMA, PAPILLOMA (3682)
  - ISLET CELL, HYPERINSULINISM, DIAGNOSIS, SURGERY (2019)
  - ISLETS OF LANGERHANS, PANCREAS, DIARRHEA (2176)
  - PANCREAS, ARTERIOGRAPHY, DIAGNOSIS (4336)
  - PAPILLARY, VILLOUS, APPENDIX (1979)
  - STOMACH (3348)
  - STOMACH, RAT (4133)*
- ADENOMATOSIS
  - POLYPOSIS, GENETICS, TREATMENT (1230)
- ADENOSINE MONOPHOSPHATE
  - NA+ -K+ -DEPENDENT ATPASE, GASTRIC MUCOSA (3914)
- ADENOSINE TRIPHOSPHATE
  - CELL METABOLISM, RADIATION DAMAGE, ASCITES TUMOR (4371)*
  - DEPHOSPHORYLATION, NI-IONS, ENZYME, LIVER, AMINO ACID (3087)
  - FATTY LIVER, RELATIONSHIP (2392)*
  - LIVER, LIPID METABOLISM, CHLORINATED HYDROCARBONS, MICE (0828)*
  - LIVER, METHIONINE (4446)*
  - PHOSPHATASE, LIVER, BILE CANALICULAR (7029)*
- ADHESION
  - NOBLE OPERATION, ILEUS, PERITONITIS, APPENDICITIS, INTESTINAL TUMOR (5856)
  - POSTOPERATIVE, MESENTERIC PLICATION (2212)
- ADHESION ILEUS
  - PROPYLIODON, ABDOMINAL, OPERATION, PERISTALSIS (6574)
- ADHESIVE
  - CROSS-LINKED GELATIN POLYMER, REPAIR, INTESTINAL DEFECTS, DOG (3719)
- ADRENAL
  - ADRENALECTOMY, LIVER, RADIATION TOXICITY, HEAVY POLYRIBOSOMES, LIVER REGENERATION, RAT (4823)*
  - CORTEX, CHRONIC PANCREATITIS, ADDISON'S DISEASE (7518)
  - CORTEX, GASTRIC ULCERS, RESTRAINT, RAT (0077)
  - CORTEX, HYDROCORTISONE ACETATE, GLUCOKINASE, LIVER, ESTRADIOL (5578)*
  - CORTEX, IMMUNOLOGY, LIVER (4432)
  - CORTEX, PEPTIC ULCER, GLUCOCORTICOID (5850)
  - EXCISION, CHOLESTEROL BIOSYNTHESIS, LIVER, HYPOPHYSECTOMY (0827)*
  - FETAL, STEROID, FETAL LIVER (5449)
  - 5-HYDROXYTRYPTAMINE, BORDETELLA PERTUSSIS VACCINE, STOMACH, DUODENUM (7200)
  - LESION, SHOCK, HEART DISEASE (4598)
  - LIVER, ENZYME, CORTISOL, THYROID (3856)
  - MICROSOME, MONO-OXYGENASE, LIVER, GUINEA PIG (4732)
  - RESECTION, ALPHA-IRRADIATION, RNA POLYMERISE, LIVER NUCLEI (6458)
  - SURGERY, CHOLECYSTITIS, OBSTRUCTIVE JAUNDICE (2910)
- ADRENAL CORTEX
  - ETHANOL, LIVER, GLUCOSE (2409)*
  - LIVER, ENZYME, DIURNAL RHYTHM (2403)*
- ADRENALECTOMY
  - CORTISOL, PYRIDOXINE, FETAL RAT LIVER (6441)*
  - GASTRIC EVACUATION, GLUCOCORTICOID (1047)
  - HISTOLOGY, ENZYME, AUTORADIOGRAPHY (8598)*
  - INDUCTION, ENZYME, LIVER (2415)*
  - INTESTINAL SILICA ABSORPTION, BLOOD (3878)
  - LIVER, DRUG METABOLISM, ENZYME ACTIVITY (1773)
  - LIVER, INDUCTION, TYROSINE AMINOTRANSFERASE, PHENTOLAMINE (7157)*
- ADRENERGIC BLOCKING AGENT
  - GASTRIC SECRETION, LIPOPOLYSACCHARIDE, INHIBITION (1666)*
  - LIVER, AMINOTRANSFERASE, PHENTOLAMINE, PROPRANOLOL (6435)*
  - PHENOXYBENZAMINE, PROPRANANLOL, MESENTERIC FLOW (6499)*
- AFFERENT LOOP SYNDROME

LIBRARY U. OF I. URBANA-CHAMPAIGN

  - ULCER, PEPTIC, HYPERMOTOR DYSKINESIA CARCINOMA, STOMACH (0318)
- FLATOXIN
  - CYTOLOGY, CYTOCHEMISTRY, LIVER, RAT (3622)
  - DRY DIET, CARCINOGEN, HEPATOMA, LIVER (0146)
- LBUMIN
  - ABSOLUTE, SYNTHESIS RATE, TROPICAL SPRUE, AMINO ACID INFLUENCE (2683)•
  - BILIRUBIN, BINDING, KERNICTERUS (6770)•
  - DEGRADATION, IRRADIATION, PERFUSED INTESTINE (7988)
  - LIVER, SYNTHESIS (1699)•
  - LIVER TURNOVER, CIRRHOSIS, SYNTHESIS (6880)•
  - LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)•
  - SERUM, CLEARANCE, PERITONEUM, FLUID FLUX, RABBIT (6373)
  - SERUM, RADIOACTIVE GASTRIN, ELECTROPHORESIS, BLOOD (6402)
  - SYNTHESIS, LIVER, DISTRIBUTION (7890)•
- LCOHOL
  - ABSORPTION, STOMACH, EMPTYING, ACID OUTPUT (5494)•
  - ACETONE, ACETALDEHYDE, TOXICITY, METABOLISM, BLOOD LEVEL (6061)•
  - ACUTE INTOXICATION, SHORT-TERM, LONG-TERM, GLUCONEOGENESIS, KREBS CYCLE, LIPID METABOLISM, PROTEIN METABOLISM, RAT (6082)
  - ADH, LIVER, TOXICITY, PROTEIN, RATS (6062)•
  - ALCOHOLIC CIRRHOSIS, PANCREATIC FUNCTION, AMYLASE, LIPASE, PANCREOZYMIN (5278)
  - ALCOHOLISM, ACUTE PANCREATITIS (5966)
  - ALCOHOLISM, BIOCHEMICAL LESION (6851)
  - ALCOHOLISM, FATTY LIVER, PARENCHYMAL DAMAGE, SILYMARIN, BLOOD CHEMISTRY (5165)
  - ALCOHOLISM, LIPID METABOLISM, MAIZE OIL, UNSATURATED FATTY ACIDS, LIVER MITOCHONDRIA (5234)
  - ALCOHOLISM, PANCREATITIS, DIABETES (5157)
  - ALLYL, HEPATIC PELIOSIS, HEPATIC ENZYMES, RATS, LDH, TRANSAMINASE (5174)•
  - ALLYL, LIVER, PROTECTION, BSP TEST, STATISTICAL EVALUATION, RAT (4895)
  - ANESTHESIA, LIVER FUNCTION (7183)
  - C-19 STEROID ALLYLIC, EPIMERISATION, LIVER, RAT (1739)
  - CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS, PARTIAL HEPATECTOMY, RAT (5999)
  - CHLORETHANOL, LIVER TOXICITY, GROWTH, CHLORHYDRIN, RAT (5231)
  - CHRONIC ALCOHOLISM, FOLIC ACID, URINE, LIVER BIOPSY, MALABSORPTION (5074)
  - CHRONIC GASTRITIS, GASTRIC MUCOSA (4978)
  - CHRONIC LIVER DISEASE, FATTY ACIDS (7634)•
  - CIRRHOSIS, ASCITES, SURGERY (6906)
  - CIRRHOSIS, LIVER, BLOOD GROUP (6890)
  - CONGENERS, FUSEL OIL, LIVER, PARENCHYMAL DAMAGE, STEATOSIS, NECROSIS, TUMORS (5226)
  - DEHYDROGENASE, LIVER, CHELATION, RATE (7140)•
  - DEHYDROGENASE, LIVER, INACTIVATION, HORSE (5445)
  - DEHYDROGENASE, METABOLISM, LIVER (7126)•
  - ETHANOL, FATTY LIVER, PYRAZOLE (7577)•
  - ETHANOL, LIVER, METABOLISM (2417)•
  - FAT, LIVER, CIRRHOSIS (5235)
  - FATTY LIVER, ENZYME ACTIVITY (7576)•
  - FATTY LIVER, NECROSIS, CHOLINE DEFICIENCY, RAT (0101)•
  - FATTY LIVER, PHENOBARBITAL (7578)•
  - FATTY LIVER, REGENERATION, ABSTINENCE (2152)
  - GASTRIC MUCOSA, BLOOD FLOW, ASPIRIN (5382)
  - GASTRITIS, DYSPEPTIC SYNDROME (4159)
  - GLUCOSE METABOLISM, POSTGASTRECTOMY (2629)
  - GLYCEROL, INCORPORATION, LIVER SLICE (6442)•
  - GLYCEROL, LIVER, ENZYME, TROUT (4846)
  - GLYCEROL, SERUM GLYCERIDE, DIET, METABOLISM (5935)
  - HEPATITIS, LIVER, FATTY LIVER (6346)
  - HEPATITIS, MALIGNANT, SUBACUTE (0599)
  - HEPATOTOXIN, METABOLISM, LIVER (0869)
  - INDUCED FATTY LIVER, PYRAZOLE (7579)•
  - INFUSION, LABOR, BILIRUBIN, NEONATAL (0552)
  - INTESTINAL ABSORPTION, GLUCOSE, LACTIC ACID (3876)
  - LIPID METABOLISM, INSULINEMIA, GLYCEMIA, CHOLESTEROL, ELECTROPHORESIS, CHYLOMICRONS (5227)
  - LIVER, CIRRHOSIS, LIPID (5246)
  - LIVER, CIRRHOSIS, NECROSIS, HEMODYNAMICS, STEATOSIS (5295)
  - LIVER, CIRRHOSIS, PROTEIN MALNUTRITION (7637)
  - LIVER, ENZYME, ALLYL FORMATE (3611)
  - LIVER, ENZYME, METABOLISM (5444)
  - LIVER, FAT, DIET (5236)
  - LIVER, LIPID, BIOCHEMICAL CHANGE, RAT (2835)
  - LIVER, MICROSOMES, MITOCHONDRIA (7127)•
  - LIVER, PERFUSION, METABOLISM (3211)
  - LIVER, TOXICITY, CIRRHOSIS, CHRONIC HEPATITIS (6122)
  - LIVER, TRIGLYCERIDE (6071)
  - LIVER, URIDINE, RNA, PARENCHYMA, RAT (5574)•
  - LIVER DAMAGE, GASTRECTOMY (4459)
  - LIVER DAMAGE, HISTAMINE (7575)•
  - LIVER DAMAGE, UROBILINOGENURIA, CIRRHOSIS, FATTY LIVER, HEPATOMEGALY, POLYNEUROPATHY (5224)
  - LIVER INJURY, CIRRHOSIS, DIABETES, CCL4 (8316)•
  - LIVER INJURY, GLUTATHIONE, LIPID PEROXIDATION (8638)•

- LIVER INJURY, VITAMINS, CYSTEINE (4462)
- LIVER METABOLISM, GLUCONEOGENESIS (6075)
- LIVER METABOLISM, GLUCOSE, NADH, AMINOLEVULINATE SYNTHETASE (8628)*
- LIVER MICROSOME, ENZYME, UDPGT ACTIVIT (5604)
- LIVER MITOCHONDRIA, PERMEABILITY, FRAGILITY, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)*
- LIVER MORPHOLOGY, HISTOCHEMISTRY (4466)
- LIVER ULTRASTRUCTURE, HYPERPLASIA (4438)
- METHYL, POISONING (3599)
- OXIDATION, ENZYMES, LIVER, MITOCHONDRIA (0932)
- OXIDATION, LIVER, MICROSOMES, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)*
- OXIDATION, MICROSOMAL, LIVER, RAT, HUMAN (5590)*
- PHENETHYL, HEPATOMA CELL, RAT, NUCLEIC ACID (5989)*
- PORTACAVAL SHUNT, PROPHYLAXIS, HEPATIC ENCEPHALOPATHY, PEPTIC ULCER (6233)
- RETICULOENDOTHELIAL SYSTEM, ABSORPTION, STEATOSIS, INTOXICATION, RAT (5233)
- STOMACH, POTENTIAL DIFFERENCE (3705)*
- TOXICITY, LYSINE ORATATE (4338)

ALCOHOL DEHYDROGENASE
- COMPLEX, COENZYME, PYRAZOLE, KINETICS, BINDING (6436)*
- ZINC-FREE, COENZYME INTERACTION, LIVER, HORSE (0132)

ALCOHOLISM
- ALCOHOL DEHYDROGENASE, HEPATIC (1401)
- ANTITUBERCULOSIS DRUGS, HEPATOTOXICITY, LIVER FUNCTION TESTS (0595)
- ASCITIC CIRRHOSIS, CONTROL (4524)
- CANCER, ESOPHAGUS, CIRRHOSIS (4122)
- CHRONIC, ALCOHOL, METABOLISM, LIVER STEATOSIS, CIRRHOSIS (9154)
- CHRONIC, HEMORRAGHIC DIATHESIS, ANGIOPATHY (4455)
- CHRONIC, NON-CIRRHOTIC, MALABSORPTION (2682)*
- CHRONIC LIVER DISEASE, DIAGNOSIS, NUTRITION (0557)
- CHRONIC PANCREATITIS, SURGERY (4355)
- ERYTHROPOIESIS, SUPPRESSION, FOLIC ACID (3547)*
- GASTRITIS, PSYCHOLOGICAL PROBLEMS (0306)
- HEMORRHAGIC DIATHESIS, LIVER DISEASE (4455)
- HYPOGLYCEMIA, CHILDREN (3618)
- KWASHIORKOR, HYPOPROTEINEMIA, POST-GASTRECTOMY (1062)
- LAENNEC'S CIRRHOSIS, PHYSIOPATHOLOGY, HYPOGONADISM (1452)
- LIVER BIOPSY, ACUTE INSUFFICIENCY, HEPATITIS, GASTRITIS, ANOREXIA, JAUNDICE (2824)
- LIVER DAMAGE, ELECTRON MICROSCOPY, LIVER FUNCTION (8653)
- LIVER FUNCTION, AFTER-CARE, PHYSICAL PSYCHIATRIC (0584)
- LIVER FUNCTION, PHOSPHATASE, GASTRITIS (2831)
- LIVER STEATOSIS, DIET, PATHOGENESIS (9110)
- LIVER STEATOSIS, PATHOGENESIS, LIPID METABOLISM (9094)
- PANCREATITIS, PARASITES, PANCREATIC CARCINOMA (9036)
- PERIPORTAL FIBROSIS, CIRRHOSIS, BILIARY STASIS (0593)
- PULMONARY TUBERCULOSIS, PROPHYLAXIS (2591)
- SERUM IRON, BINDING CAPACITY (4651)
- ZIEVE'S SYNDROME, UNSTABLE HYPERLIPEMIA (3653*

ALIMENTARY CANAL
- B-GLUCORONIDASE, ANURAN TADPOLE, HERBIVOROUS, CARNIVOROUS (3066)

ALKALOSIS
- INDUCED, METABOLIC, HEPATIC ENCEPHALOPATHY, CLINICAL STUDIES (0858)
- POST-HISTAMINIC, STOMACH, DRAINAGE (0321)

ALLOGRAFT
- LIVER, AUXILIARY FUNCTION (3196)
- PANCREAS, HEMODYNAMICS, DOG (0931)
- PANCREAS, NATURAL DEVELOPMENT, FUNCTIONAL AND MORPHOLOGICAL ALTERATIONS (9007)

ALPHA-FETOPROTEIN
- VIRAL, HEPATITIS, TUMOR, CORTICOTHERAPY, REGENERATION (6861)

ALPHA-GLOBULIN
- THYROXINE, LIVER, CIRRHOSIS (3658)

ALUMINUM AMINOACETATE
- BASIC, COMBINATION TREATMENT, PAIN, GASTRODUODENAL (0313)

AMEBA
- ABSCESS, LIVER, ANGIOGRAPHY (4034)

AMEBIASIS
- ABSCESS, NEOPLASM (1560)
- ABSCESS, TREATMENT, LIVER SCANNING (3782)
- BENTONITE FLOCCULATION TEST, SEROLOGIC DIAGNOSIS (2267)
- COLITIS, PREGNANCY, PUERPERAL STATE, NIGERIA (0439)
- DIAGNOSIS, INTESTINAL TRACT, HEMAGGLUTINATION, MAN (1532)
- DIAGNOSIS, LIVER (1551)
- DIAGNOSIS, STAINED SMEAR (1552)
- DYSENTERY, DISTRIBUTION (3004)
- E. HISTOLYTICA, MONOBACTERIAL CULTURES, LIVER CELL FRAGMENTS (0718)
- EXTRAINTESTINAL, INFANT (3785)
- HEPATIC, PLEURO-PULMONARY COMPLICATIONS (4686)
- HEPATIC, SURGICAL DRAINAGE, CORTICOSTEROIDS (0583)
- HEPATIC, THERAPY, DIAGNOSIS (3018)
- HEPATITIS, SURGERY (1742)
- HISTORY, DYSENTERY (1555)
- INTESTINAL, DIAGNOSIS (1227)
- INTESTINAL, HEPATITIS, DIAGNOSIS (0712)*

  INTESTINAL, METRONIDAZOLE TREATMENT (4677), (8501)
  INTESTINAL, THERAPY, TECLOZAN (1542)
  INTESTINE, ANTIBIOTIC (2263)
  INTESTINE, EPIDEMIOLOGY, DIAGNOSIS (7755)
  INTESTINE, TREATMENT (4674)
  LARGE INTESTINE, GUINEA PIG (1527)•
  LESIONS, EVOLUTION (1550)
  LIVER, ABSCESS, HEPATITIS, METRONIDAZOLE (3703)•
  LIVER, DIAGNOSIS, SAIGON (9263)
  LIVER, HEPATITIS, ABSCESS (2089)
  LIVER, HEPATITIS, ABSCESS, CONNECTIVE TISSUE (2099)
  LIVER, METRONIDAZOLE (9260)•
  LIVER ABSCESS, PERICARDITIS (2074)
  NITRO-IMIDAZOLE DERIVATIVE, TREATMENT, MAN (1526)•
  PARASITE, HEPATIC ABSCESS, LIVER SCAN (2100)
  TREATMENT, ANTIBODY LEVEL (2261)
  ULCERATIVE PROCTITIS, METRONIDAZOLE, SIDE EFFECTS (0493)
MEBOMA
  RECTUM, MAN (1279)
MINE
  CATECHOLAMINE SECRETION, GASTRIC HEMORRHAGE, PHEOCHROMACYTOMA (7717)
  FORMATION, STORAGE, ENDOCRINE CELLS, GASTRIC MUCOSA (3913)
  GALACTOSAMINE HEPATITIS, OROTATE, LIVER (6845)
  HISTAMINE, CONTRACTILITY, SENSITIVITY (5515)•
  HISTAMINE, 5-HYDROXYTRYTAMINE, DOPAMINE, GASTRIC MUCOSA (6404)
  HISTAMINE, GASTRIC ACIDITY, AGE, JUICE (6407)
  HISTAMINE, GASTRIC SECRETION, GASTRIC ACID, PEPSIN, HEXAMETHONIUM (5535)•
  HISTAMINE, GASTRIC SECRETION, VISUAL DEPRIVATION, DOG (5541)
  HISTAMINE, MAST CELLS, HISTOCHEMISTRY (6330)
  HISTAMINE, PENTAGASTRIN, GASTRIC FISTULA (6406)
  IMIPRAMINE, METABOLISM, LIVER, STRAIN DIFFERENCES (7190)
  NITROSAMINES, NITRITES, CARCINOGENS, STOMACH, METHEMOGLOBIN, PH (5550)
  PHOSPHATIDYLETHANOL-, METABOLISM, ETHANOLAMINE, MOUSE (6487)
  SEROTONIN, METABOLISM, CIRRHOSIS, ACUTE VIRAL HEPATITIS (6117)
  SEROTONIN, SMALL INTESTINE, MOTILITY, COHERIN, BIEBL LOOPS, DOG (5510)•
  STORING CELLS, GASTRIC MUCOSA, STAINING (6285)•
  TRANSPORT, BILE SECRETION, RAT (0846)•
MINO ACID
  ABSORPTION, COLON, JEJUNUM (2342)•
  ABSORPTION, INTESTINE (5482)•
  ABSORPTION, INTESTINE, MALARIA (6275)
  ABSORPTION, JEJUNUM, NUTRITIONAL RICKETS, MAN (0773)
  ABSORPTION, LIVER T-RNA, FASTING (3089)
  ABSORPTION, SMALL INTESTINE, DUODENUM, THIRY-VELLA LOOPS, SODIUM EFFECT, DOG (5489)•
  ABSORPTION, VITAMIN D, ALPHA-AMINOISOBUTYRIC ACID (7055)•
  ACIDIC, FREE, MOLECULAR WEIGHT (5483)•
  ACUTE VIRAL HEPATITIS, CIRRHOSIS, GAMMA GLOBULIN (6013)
  ALANINE, GLUTAMINE, LIVER, GLUCONEOGENESIS (0893)
  ALANINE, HEPATIC GLUCONEOGENESIS, STARVATION, MAN (1719)•
  ALANINE, LIVER, GLUTAMATE, OXOGLUTACATE, GUINEA PIG (6475)
  ALANINE, PROTEIN, HEPATIC CELL NUCLEUS, VITAMIN A, NACL (3178)
  ALANINE, SODIUM TRANSFER, ILEUM, RABBIT (3106)•
  ALANINE, TRANSPORT, ILEUM, RABBIT (3105)•
  ALPHA-AMINOISOBUTYRIC ACID, TRANSPORT, HEPATOMA CELLS, TYROSINE AMINOTRANSFERASE (7114)•
  AMINOACIDURIA, CIRRHOSIS, DISACCHARIDE INTOLERANCE, MALTOSURIA (5898)
  AMINOTRANSFERASE, STOMACH, ULCER (3388)•
  ARGININE, MALIC ACID, LIVER DISEASE, ACUTE VIRAL HEPATITIS, CIRRHOSIS (6044)
  ARGININE, ORNITHINE, HEPATITIS, CIRRHOSIS, RADIATION (5197)
  CARNOSINE, ABSORPTION, SMALL INTESTINE, ALANINE, HISTIDINE (5475)•
  CATABOLISM, ENZYMES, LIVER (7893)•
  CATALASE CHEMISTRY (5470)
  CELL PROLIFERATION KINETICS, LIVER (3983)
  CHOLESTYRAMINE, BILE ACID, CHOLELITHIASIS, HAMSTER, MAN (1770)
  CONTENT, PANCREATIC ISOAMYLASES (7030)•
  CYSTEINE, HOMOCYSTEINE, OXIDATION, LIVER (5576)•
  CYSTINE, ESSENTIAL, LIVER, FETUS, CYSTATHIONASE, TRANSSULFURATION, CYSTATHIONINE, METHIONINE (5420)•
  CYSTINE, LYSINE, UPTAKE JEJUNUM, DOG (0912)•
  ENZYMATIC ACTIVITY, LIVER (5990)•
  ENZYME, LIVER AMINOACYL PHOSPHATES, NI, ATP (3087)
  ESSENTIAL, ABSORPTION (6360)
  GASTRIC MUCOSA, CHIEF CELL, PRODUCTION (6288)•
  GASTROINTESTINAL, I131-L-TYROSINE (4613)
  GLUTAMATE, ASPARTATE, ALAMINE, EVERTED SACS (7074)
  GLYCINE, TRANSPORT, SMALL INTESTINE, SODIUM, BIRD (4776)
  HEPATIC INCORPORATION, POLYRIBOSOMES, ATP, ASSAY, ISOLATION (4712)•
  HYDROXYPROLINE, CIRRHOSIS, HEPATOSCLEROSIS, RAT (0157)
  HYMENOLEPIS MICROSTOMA, HOST BILE (3023)
  HYPOGLYCIN, TOXICITY, METABOLISM (5249)
  INCORPORATING SYSTEM, ENZYME INHIBI-

TORY EFFECTS, RAT, LIVER (1749)
INFLUENCE, ABSOLUTE ALBUMIN, SYNTHESIS RATE, TROPICAL SPRUE (2683)*
INTESTINAL TRANSPORT, CARBOHYDRATES (6363)
INTESTINE, TRANSPORT, GOLDFISH (6372)
IRON ABSORPTION, VEGETABLE, CYSTEINE, METHIONINE (6353)*
ISOENZYMES, DIAGNOSIS, PANCREAS, BILE DUCT (0182)*
JEJUNUM, INORGANIC ION CONTENT, L-ALANINE (5476)*, (5488)*
KREBS-HENSELEIT CYCLE, HEPATOPROTECTIVE EFFECTS, LIVER (0570)
LEUCINE, LYSINE, REGENERATION, LIVER, RADIATION, PROTEIN (4826)*
LIVER, DEHYDROCHOLYL-METHIONINE, ETHYL ESTERS (3974)
LIVER, DEHYDROGENASES, PROTEIN CATABOLISM, HEPATIC ENZYMES (4818)*
LIVER, DETOXIFICATION (3609)
LIVER, FIBRINOGEN SYNTHESIS, HORMONE, FAST, THROMBIN (6473)
LIVER, N-CHOLYL AND N-DEHYDROCHOLYL DERIVATIVES (4461)
LIVER, PROTEIN SYNTHESIS, CELL-FREE SYSTEM (7149)*
LIVER, PROTEIN SYNTHESIS, CORTISOL TREATMENT, IN VIVO, IN VITRO, RAT (4834)*
LIVER POOLS, HYPERGLYCEMIA, GLUCAGON, HYDROCORTISONE (8627)*
L-TYROSINE ETHYL ESTER, HYDROLYSIS, CHYMOTRYPSIN A (3054)
LYSINE, THREONINE SUPPLEMENTATION, ABSORPTION (7054)*
METABOLISM, FRUCTOSEMIA (4364)*
METABOLISM, LIVER, BRAIN, BLOOD INFLOW, BLOOD OUT-FLOW, NEONATE (2458)
METABOLISM, LIVER, INOSPICENE, ARGININE, NUCLEIC ACID (5568)*
METABOLISM, LIVER, PROTHROMBIN (2418)*
METABOLISM, LIVER, SPLEEN (4847)
METHIONINE, CHANG'S LIVER CELLS, CELL, PROTEIN (6431)*
METHIONINE, DEFICIENCY, RAT EMBRYO, PANCREAS, ULTRASTRUCTURE, ENZYME ACTIVITY (4701)*
METHIONINE, GERMFREE ANIMALS, DIET, MINERALS, RATS, MICE, GUINEA PIG (5640)
METHIONINE, HEPATIC STASIS (4388)
METHYL-CHOLINE, METHYL-METHIONINE, ETHANOLAMINE, LIVER, RAT (0885)
MICROSOME, LIVER, PEPTIDE (1741)
MITOCHONDRIAL PROTEIN, CYCLOHEXIMIDE (7152)*
NET ABSORPTION, CYSTINURIA, TRANSPORT DEFECT (1963)*
NITROGEN UTILIZATION, ABSORPTION (2784)*
PENICILLAMINE, ISOMERS, TRANSPORT, SMALL INTESTINE (7056)*
PEPSIN, GASTRICSIN, HUMAN (4810)
PURINE, SYNTHESIS, BRAIN, LIVER, RAT (2443)
SEQUENCE, PANCREATIC ELASTASE (2361)*
SERINE, TYROSINE, SGOT, SGPT (7159)*
SMALL INTESTINE, ABSORPTION (2345)
SMALL INTESTINE, AGING, NITROGEN, RAT (5443)
SMALL INTESTINE, JEJUNUM, ACTIVE TRANSFER (1787)*
STOMACH, CANCER, GASTRECTOMY (2606)
TAURINE, ENZYME, BIOSYNTHESIS, LIVER, CHICK (0889)
THREONINE DEFICIENCY, ENZYME, LIVER (4694)*
TRANSPORT, INTESTINAL MUCOSA, ATPASE, CARDIOACTIVE STEROIDS, RAT (1639)
TRANSPORT, LIVER, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)*
TRANSPORT, SODIUM SENSITIVITY, INTESTINE (5478)*
TRYPTOPHAN, METABOLISM, MALNUTRITION, PROTEIN (4567)*
TYROSINE, METABOLISM, LIVER, RAT (1736)
UREA SYNTHESIS, URIC ACID, LIVER (3970)
VALINE, PROPIONYLCARNITINE CONVERSION, LIVER (3982)

AMMONIA
  AMMONIEMIA, HEPATIC COMA, BLOOD PLATELETS, HETEROLOGOUS PERFUSION (5215)
  AMMONIEMIA, HEPATIC COMA, FLAPPING TREMOS, HEMORRHAGE (5217)
  BLOOD, LIVER CIRRHOSIS, ANTIBIOTIC TREATMENT (9165)
  BLOOD, LIVER PATHOLOGY, DIAGNOSIS (8724)
  CHRONIC LIVER DISEASE, ARGININE AND ORNITHINE (7565)
  FECAL LEVEL, E. COLI, LACTOBACILLUS, INFANT (2495)
  FECAL LEVEL, FEEDING METHOD, INFANT (2778)
  FECAL LEVEL, INTESTINAL FLORA, LACTOBACILLUS PREPARATION, INFANT (2777)
  HEPATIC ENCEPHALOPATHY (6029)
  HYPERAMMONIEMIA, GASTRECTOMY, TRANSHEPATIC SHUNT, HEPATIC LESIONS (4950)
  HYPERAMMONIEMIA, LIVER, CIRRHOSIS, RENAL DISEASE, RESPIRATORY ALKALOSIS (5292)
  PERITONEAL FLUID, ACUTE, ABDOMEN (6572)
  TRANSPORT, METABOLISM, GASTROINTESTINAL TRACT (5634)
  UREA, GASTROENTERITIS, ELECTROLYTE (5385)

AMMONIA TOLERANCE TEST
  PORTAL HYPERTENSION, DIAGNOSIS, CHRONIC HEPATITIS, CIRRHOSIS (0186)*

AMPULLA OF VATER
  CANCER, PANCREAS, DUODENUM (4084)
  CARCINOID, VON RECKLINGHAUSEN'S DISEASE (6726)
  CARCINOMA (2178)
  CARCINOMA, PERIAMPULLA, PANCREATODUODENECTOMY (0297)
  DIAGNOSIS, TREATMENT (7662)
  DIAGNOSIS, X-RAY (1309)

  - DISCONNECTION, GASTRECTOMY (1076)
  - DISCONNECTION, GASTRIC RESECTION (6151)
  - DISEASE, DIAGNOSIS, RADIOGRAPHIC, WIRSUNG'S DUCT (0218)
  - DUODENOSTOMY, JEJUNOSTOMY, DUODENAL ULCER (6561)
  - ENDOSCOPY, PANCREATOGRAPHY, PANCREOZYMIN (6516)*
  - OBSTRUCTION, ABDOMINAL PAIN, PANCREAS (6916)
  - STENOSIS, SPHINCTERECTOMY, GALLBLADDER (4999)
  - TUMOR, DUODENUM (1320)
  - TUMOR, EXCISION (1320)

- AMYLASE
  - ACUTE PANCREATITIS, EDEMA, NECROSIS (8257)
  - ALPHA-, METABOLISM, URINE CONTENT, PANCREATIC SECRETION (8600)
  - ALPHA-, SERUM, URINE, DIAGNOSIS (4065)
  - CONCENTRATION, BILE (0144)
  - INTESTINE, RAT, ISOLATION, CHARACTERIZATION (6296)*
  - LIPASE, CONCENTRATION, OCCLUSION, SMALL INTESTINE, BILE DUCT (2943)*
  - PANCREAS, CHRONIC HEPATITIS (4082)
  - PANCREAS, SURGERY (3519)
  - PANCREATIC, PROPERTIES, STARCH, DIET (6418)
  - SERUM, POSTGASTRECTOMY, ACUTE PANCREATITIS (0276)
- AMYLOIDOSIS
  - ACHALASIA, ENLARGEMENT, SMALL INTESTINE, BANTU (0254)
  - GASTRIC, CELL, MORPHOLOGY (3346)
  - SCLERODERMA, GASTROINTESTINAL INVOLVEMENT (0699)
- ANALGESIC
  - ASPIRIN, ABSORPTION, PH, IN VITRO MODEL, SALICYLIC ACID (5487)*
  - ASPIRIN, ABSORPTION, SMALL INTESTINE, TAURINE, GLYCINE (5503)
  - ASPIRIN, GASTRIC HEMORRHAGE (7336)
  - ASPIRIN, GASTRIC LESION, 2-DEOXYGLUCOSE, HCI, VAGOTOMY, MUCOSAL EROSION, GASTRIC HEMORRHAGE (5763)*
  - ASPIRIN, GASTROINTESTINAL BLEEDING (6993)
  - ASPIRIN, STOMACH, MUCOSA, BLOOD FLOW, ALCOHOL (5382)
  - ASPIRIN INGESTION, PEPTIC ULCER (6661)
  - MORPHINE, PETHIDINE, GASTROINTESTINAL TRACT, MOTILITY, POSTOPERATIVE, MAN (3701)*
  - PANCREATITIS, CHOLELITHIASIS, ACUTE ABDOMINAL PAIN, SPASMOLYTICS, PYRAZOLONE DERIVITIVE (5369)
  - PENTAZOCINE, ABSORPTION, DISTRIBUTION, EXCRETION, ORAL AND INTRAVENOUS ADMINISTRATION (3113)
- ANAPHYLACTIC SENSITIVITY
  - ILEUM, RECOVERY AFTER DESENSITIZATION GUINEA-PIG (0905)*
- ANAPHYLAXIS
  - ANTIGEN, ILEUM, GUINEA-PIG (5053)
- ANASTOMOSIS
  - BILE DUCT, CYST, ATRESIA, JAUNDICE (5327)
  - BILE DUCT, JEJUNAL LOOP, HEPATICO-JEJUNO-DUODENOPLASTY (6020)
  - BILIARY-JEJUNAL BYPASS, PANCREATIC LESIONS, STENOSIS, CALCULI (5300)*
  - CHOLECYSTECTOMY, CHOLECYSTITIS, STENOSIS (2459)
  - CHOLECYSTOJEJUNOSTOMY, INTESTINAL ABSORPTION, PROTEIN, CARBOHYDRATE, FAT (4764)*
  - CHOLEDOCHODUODENOSTOMY, CHOLECYSTECTOMY, CHOLECYSTODUODENOSTOMY (7670)
  - CHRONIC PANCREATITIS, BILE DUCT, THORACIC SYMPATHECTOMY, SPLANCHIECTOMY (5162)
  - CHRONIC PANCREATITIS, BILIARY LITHIASIS, WIRSUNG'S CANAL, CHOLANGIOGRAPHY (5151)
  - COLON, ANUS, STRICTURE, SWENSON'S OPERATION (0436)
  - COLON, DRAIN, PERITONITIS (2708)
  - COLON, ESOPHAGUS, SUBSTERNAL, COMLICATIONS (2704)
  - COLON, HISTOPATHOLOGY, RABBIT (1218)*
  - COLON, RECTUM, CECAL FISTULA, TUMOR (5912)
  - COLON, TUMOR IMPLANTATION, RAT (1978)
  - COMMON BILE DUCT, MICROSURGERY, DOG (8404)
  - EDEMA, X-RAY, GASTRIC RESECTION (1050)
  - ENTERO-, JEJUNOGASTRIC INVAGINATION (4140)
  - ESOPHAGEAL, MOTILITY, HEMORRHAGE, ARTIFICIAL ESOPHAGUS (4964)
  - ESOPHAGEAL ATRESIA (6596)
  - ESOPHAGEAL PROSTHESIS, THORACIC SEGMENT, DOG (8056)
  - ESOPHAGOGASTRIC, RECONSTRUCTION, SINGLE-LAYERED, GASTRIC MUCOSA (6589)
  - ESOPHAGOGASTRO, REFLUX, CANCER, SURGERY, ESOPHAGITIS (2552)
  - ESOPHAGOJEJUNAL, GASTRECTOMY, RESECTION (6631)
  - ESOPHAGUS (6592)
  - ESOPHAGUS, ATRESIA (6597)
  - ESOPHAGUS, ATRESIA, LIPIODOL, BARIUM-OXIDE, RADIOLOGY (4956)
  - GASTRIC CERVICAL ESOPHAGUS, RECONSTRUCTION (7304)
  - GASTRODUODENAL, GASTRECTOMY (7341)
  - GASTRODUODENAL, GASTRECTOMY, PEPTIC ULCER (8893)
  - GASTRODUODENAL, VAGOTOMY, ANTRECTOMY, RADIOLOGY (6648)
  - GASTROINTESTINAL, REPAIR, SUBTOTAL GASTRECTOMY (7371)
  - GASTROJEJUNAL, DUMPING SYNDROME, STOMACH ACID (1045)
  - HEPATIC CIRRHOSIS, SPLENORENAL VENOUS PORTAL HYPERTENSION (1449)
  - ILEORECTAL, ULCERATIVE COLITIS (5950)
  - ILEUM, FALLOPIAN TUBE, SOW (0919)
  - INTESTINAL, HEALING, BACTERIA (7726)
  - INVERTING, EVERTING, BACTERIA, CONTAMINATION, PERITONITIS (1100)
  - LARGE INTESTINE, IMMERSION (1281)
  - LYMPHO-VENOUS, ESOPHAGEAL HEMORRHAGE (4125)
  - OESOGASTRIC, GASTRECTOMY, METALLIC

  - CLIP, P.K.S. 25, TERMINOLATERAL TECHNIQUE (5350)
  - PANCREATIC CANCER, METASTASES, BIOPSY (5141)
  - PANCREATIC CYSTS, DRAINAGE, ANASTOMOSIS, PRESSURE (5139)
  - PANCREATOCYSTOJEJUNOSTOMY, PSEUDOCYST, PANCREAS, POSTPANCREATITIS, POST-TRAUMATIC (2779)
  - P.K.S. 25, ESOINTESTINAL, HEMICOLECTOMY, ILEO-TRANSVERSE (5364)
  - PORTACAVAL, CIRRHOSIS (5297)
  - PORTACAVAL, CIRRHOSIS, ADHESIONS, PORTAL HYPERTENSION (6887)
  - PORTACAVAL, EMERGENCY, CIRRHOTICS (3657)
  - PORTACAVAL, INFECTION, FAILURE (8430)
  - PORTACAVAL, LIVER, WEIGHT, FOOD (6933)*
  - PORTACAVAL, LIVER CIRRHOSIS, HEMMORHAGE, PROGNOSIS (4940)
  - PORTACAVAL SHUNT, ESOPHAGUS, BLEEDING VARICES, CIRRHOSIS (6113)*
  - PORTACAVAL SHUNT, IRON ABSORPTION, CIRRHOSIS, DOG (6114)*
  - PORTACAVAL SHUNT, PORTAL HYPERTENSION, CIRRHOSIS, SURGERY (6028)
  - PORTACAVAL SHUNT, PROPHYLAXIS, LIVER ENCEPHALOPATHY, PEPTIC ULCER, ALCOHOLISM (6233)
  - PORTAL HYPERTENSION (6785)
  - PORTAL HYPERTENSION, SHUNT SURGERY, CIRRHOSIS (6784)
  - PORTAL SYSTEMIC SHUNT, HEPATIC CIRCULATION (6788)
  - POSTOPERATIVE RECTOCOLITIS, PROGNOSIS, MORTALITY RATE (5123)
  - RECTUM, TRIGONE (4867)
  - SPLENOPORTAL, BILIODIGESTIVE, HETEROTOPIC TRANSPLANTATIONS, PIGS (6012)
  - STOMACH, STENOSIS (1046)
  - SURGERY, IATROGENESIS, OBSTRUCTION, ULCER, GASTROINTESTINAL TRACT (2959)
- ANATOMOPATHOLOGY
  - CHRONIC PANCREATITIS, TRYPTIC NECROSIS PATHOGENESIS (9025)
  - CONGENITAL ESOPHAGEAL STENOSES, SURGERY (8810)
  - GASTRIC TERATOMA, SYMPTOMATOLOGY, NEWBORN (8847)
  - LIVER, LYMPHANGIOGRAPHY, SEMINOMAL METASTASIS (3552)
  - POSTHEPATITIC SYNDROMES, CLASSIFICATION, AGGRESSIVE AND PERSISTENT CHRONIC HEPATITIS (9146)
  - VESICOINTESTINAL FISSURE, SURGERY, CLINICAL VARIETIES (8978)
- ANATOMY
  - ANORECTAL (3503)
  - LIVER, MAN (2057)
- ANEMIA
  - APLASTIC, ACUTE VIRAL HEPATITIS (7605)
  - APLASTIC, HEMORRHAGE, GASTROINTESTINAL TRACT, HEPATITIS, PANCYTOPENIA (5266)
  - APLASTIC, HEPATITIS, VIRAL (2867)
  - APLASTIC, SERUM IRON, BINDING CAPACITY (4651)
  - BIAFRAN CHILDREN, MALNUTRITION, LIVER, SPLEEN, CARDIOPATHY (5340)
  - CHRONIC, MECKEL'S DIVERTICULUM (5870)
  - CHRONIC, NEUROFIBROMATOSIS, GASTROINTESTINAL TRACT, HEMORRHAGE (6245)
  - CROHN'S DISEASE, REGIONAL ILEOCOLITIS, SURGICAL TREATMENT (8927)
  - FANCONI'S, VIRAL HEPATITIS (4495)
  - GASTRIC, ADENOCARCINOMA, OSTEMEDULLARY BIOPSY, HEMOPATHIC, YOUNG ADULT (5016)
  - HEMOLYTIC, ACUTE CHYLOPERITONEUM, MALIGNANT LYMPHORETICULOSIS (7745)
  - HEMOLYTIC, HEMANGIOENDOTHELIOMA, LIVER (6819)
  - HEMOLYTIC, HEPATOCYTES, ERYTHROCYTES (0735)*
  - HEPATIC CIRRHOSIS, PATHOGENESIS (2897)
  - HIATAL HERNIA, ESOPHAGUS, ESOPHAGITIS, SURGERY (4091)*
  - HOOKWORM, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
  - HOOKWORM, IRON DEFICIENCY, VITAMIN B12 (2258)
  - HYPOCHROMIC, GASTRIC RESECTION, WEIGHT CONTROL, PEPTIC ULCER, HEMORRHAGIC ULCER (5783)
  - HYPOCHROMIC, THROMBOSIS, HERNIA, ULCER (6595)
  - ICTERUS, CHOLANGITIS, LIVER (4919)
  - IMERSLUND-NAJMAN-GRASBECK, MALABSORPTION, VITAMIN B12 (0419)
  - IRON, FOLIC ACID, THERAPY, PREGNANCY (2813)
  - IRON DEFICIENCY, GASTRIC MUCOSA (7329)*
  - IRON DEFICIENCY, MUCOSA, SMALL INTESTINE (4216)*
  - IRON EXCRETION INTO GASTRIC JUICE (3110)
  - IRON METABOLISM, WHOLE BODY COUNTER (3247)
  - MEGALOBLASTIC, DIVERTICULOSIS, INTESTINE (4222)
  - MEGALOBLASTIC, DUODENUM, JEJUNUM, MAST CELL, CROSBY-BIOPSY (3433)
  - NORMOCHRONIC, MULTIPLE MYELOMA LIVER, KAHLER'S DISEASE, PROTEINURIA, PROTEINEMIA (5275)
  - OCCULT BLOOD LOSS, PARTIAL GASTRECTOMY (3351)
  - PANCREAS, EXCRETION, EXOCRINE FUNCTION (1310)
  - PERNICIOUS, ADDISON, RADIOLOGY, VITAMIN B12, ATROPHIC GASTRITIS, ACHYLIA, GASTRICA (4132)*
  - PERNICIOUS, GASTRITIS, IMMUNOLOGY, ANTIBODIES, MUCOSA, INTRINSIC FACTOR (5005)
  - PERNICIOUS, IMMUNOGLOBULIN, GASTRIC ACID, INTRINSIC FACTOR (4130)*
  - PERNICIOUS, STOMACH, AUTOANTIBODIES, INTRINSIC FACTOR (3338)*
  - PERNICIOUS, ULTRASTRUCTURE, ATROPHIC GASTRITIS (7320)*
  - PERNICIOUS, VITAMIN B12 ABSORPTION, ACHLORHYDRIA (7275)

ANESTHESIA
- BLOOD FLOW, LIVER (5376)
- ESOPHAGUS, STOMACH, ULCER, DIAGNOSIS (4953)
- ETHANOL, LIVER FUNCTION (7183)
- HALOTHANE, ACUTE NON-VIRAL HEPATITIS, ERYTHROID APLASIA (6064)
- HALOTHANE, ACUTE NON-VIRAL HEPATITIS, IRRADIATION THERAPY, UTERINE CANCER (6076)
- HALOTHANE, EXPOSURE, LIVER, SULFOBROMOPHTHALEIN, CLEARANCE, RAT (5223)•
- HALOTHANE, FULMINANT HEPATIC NECROSIS (6847)
- HALOTHANE, HEPATIC NECROSIS (6074)
- HALOTHANE, HEPATITIS (7590)
- HALOTHANE, LIVER FUNCTION, SURGERY (9113)
- LIVER, CIRCULATION (6843)
- LIVER, DOG (5603)
- LIVER, HISTOCHEMISTRY, RNA (1584)
- LIVER, HYPOTENSION, HYPOTHERMIA, TOXIC (6840)
- POTENCY, GASTRIC SECRETION, CHLORIDE ION SOLUTIONS, FROG (1681)
- SMALL INTESTINE, SURGERY (2205)
- SUXAMETHONIUM, FASCICULATION, INTRAGASTRIC PRESSURE (1654)
- TOXICITY, LIVER, SURGERY (5244)
- TRACHIAL INTUBATION, PERFORATION, CERVICAL ESOPHAGUS, EMPHYSEMA (4975)
- TRANSPLEURAL SURGERY, ESOPHAGEAL CANCER (7315)

ANESTHETIC
- HALOTHANE, LIVER DAMAGE, SURGERY (3593)•
- METHOXYFLURANE, HALOTHANE, INHALATION, HEPATIC INJURY (3592)•
- METHOXYFLURANE, SENSITIVITY, FETAL, LIVER NECROSIS (3591)•
- METHOXYFLURANE, THIOPENTONE, ETHER, HEPATOTOXICITY (3544)•

ANEURYSM
- ARTERY, HEPATIC (6824)
- BILIARY TRACT, HEPATIC ARTERY, GASTRODUODENAL ARTERY, POSTOPERATIVE (6827)
- CAROTID ARTERY, SURGERY (2962)
- DISTAL ABDOMINAL AORTA, SALMONELLOSIS (2993)
- HEPATIC, ARTERY, BILIARY TRACT (6822)
- SPLENIC ARTERY, UPPER GASTROINTESTINAL BLEEDING, SURGERY (8476)

ANGIOGRAPHY
- ACUTE APPENDICITIS, DIAGNOSIS (0969)
- BILIARY TRACT, INTRAVENOUS, DRIP INFUSION (0221)
- CELIAC, MESENTERIC, SECRETIN, PANCREATIC DISEASE, DIAGNOSIS (2768)•
- CELIAC AXIS, LIVER, PANCREAS (4019)•
- CHOLECYSTOSIS, HYPERPLASIA (3663)•
- ENTERIC LESIONS, HEMORRHAGIC TELANGIECTASIS (4030)
- GALLBLADDER, RADIOLOGY, DIAGNOSIS, CANCER (1807)•
- GASTRIC CARDIA LESIONS, HYPERTROPHY (4055)
- GASTROINTESTINAL BLEEDING (2498)•
- HEMORRHAGE, GASTROINTESTINAL (3285)
- HEPATIC-PORTAL FISTULA, LIVER BIOPSY (4413)
- HEPATIC REGENERATION EVALUATION, SCINTILLATION SCANNING (3301)
- INDICATIONS, HEMORRHAGE (4588)
- LIVER, ABSCESS, AMEBA (4034)
- LIVER, ABSCESS, GRANULOMA (3560)
- LIVER, CYST, ARTERY, CIRRHOSIS, TUMORS (7219)•
- LIVER, TRANSPLANT, CIRCULATION (2466)
- MASSIVE OCCULT GASTROINTESTINAL BLEEDING (3725)
- PANCREATIC CARCINOMA, RETROSPECTIVE, PREOPERATIVE, DIAGNOSIS (8705)•
- PORTAL HYPERTENSION, BLOOD FLOW (1359)
- STOMACH, DIAGNOSIS, RADIOLOGY, MARKER STUDIES (1800)•
- VISCERAL, GASTROINTESTINAL BLEEDING (3292)

ANGIOTENSIN
- ADRENERGIC EFFECTS, ILEUM, PERFUSION, CAT (0776)•
- CIRRHOSIS, ANGIOTENSINASE, ENZYME ACTIVITY (1706)•

ANGIOTENSINASE
- ANGIOTENSIN, ENZYME ACTIVITY, EXPERIMENTAL CIRRHOSIS (1706)•

ANIONS
- ORGANIC, STOOL ANALYSIS, IN VIVO DIALYSIS, DIETARY EFFECTS (0942)•

ANOMALY
- ABDOMINAL, SITUS INVERSUS, CHOLELITHIASIS, NON-ROTATION (6216)
- ANORECTAL, CLASSIFICATION (7469)
- BONE, PANCREATIC INSUFFICIENCY, GRANULOPENIA (3523)
- CIRCULATION, MESENTERY, STOMACH (2961)
- CONGENITAL, ANNULAR PANCREAS, DUODENAL OBSTRUCTION (5956)
- CONGENITAL, ANORECTAL, SURGERY (6719)
- CONGENITAL, ANUS, RECTUM, SPHINCTER, SURGERY (5093)
- CONGENITAL, ATRESIA, SMALL INTESTINE, OBSTRUCTION, HEMANGIOMA, VOLVULUS, NEONATE (5860)
- CONGENITAL, BILE DUCT, ICTERUS (6033)
- CONGENITAL, CAVERNOUS HAEMANGIOMA, INFANTS, DIAGNOSIS (0573)
- CONGENITAL, DUODENUM, DIVERTICULA (7363)
- CONGENITAL, GALLBLADDER, MORPHOGENESIS, DIAGNOSIS (0226)
- CONGENITAL, HEMIHYPERTROPHY, EPITHELIAL HEPATOBLASTOMA (7561)
- CONGENITAL, PYLORIC, STENOSIS, SURGERY (5820)
- CONGENITAL, PYLORIC STENOSIS, PYLOROMYOTOMY (5770)
- CONGENITAL, RECTUM, DUPLICATION, SURGERY (5108)
- CONGENITAL DIAPHRAGMATIC OCCLUSION, DUODENUM (6650)
- CYSTIC DUCT, CHOLEDOCHAL CYST, HYPOPLASIA (4551)
- DUODENAL DUPLICATION, SURGERY, CYSTOJEJUNOSTOMY (5777)
- ESOPHAGO-CARDIAC FISTULA, EMBOLIC MENINGO-ENCEPHALITIS (7302)

- ECTOPIC ANUS, PATHOGENETIC FACTORS, TREATMENT, PROGNOSIS (3481)
- GALLBLADDER, DUPLICATION, CONGENITAL, CHOLECYSTOGRAPHY (5313)
- GALLBLADDER, MULTISEPTATE, EMBRYOGENESIS (5316)
- GASTRIC DUPLICATION (7355)
- GASTROSCHISIS, GASTROSTOMY, LAPAROTOMY (2954)
- HIRSCHPRUNG DISEASE, MALROTATION, PERITONITIS, ATRESIA, NEONATE, DIAPHRAGM (5058)
- LARYNGOTRACHEAL-ESOPHAGEAL CLEFT, CONGENITAL, SURGERY (3324)
- MALROTATION, DUODENUM, ATRESIA, STENOSIS (5013)
- MECKEL'S, DIVERTICULUM, SMALL INTESTINE (1197)
- MEGACOLON, HIRSCHPRUNG'S DISEASE, RADIOLOGY (7488)
- PYLORIC DUPLICATION, NEONATE, SURGERY (7354)
- SMALL INTESTINE, MALROTATION, VOLVULUS, RADIOLOGY (6949)
- TRACHEOESOPHAGEAL FISTULA, ESOPHAGEAL ATRESIA, SURGERY (6588)
- ULCER, PANCREAS, SURGERY, DIAGNOSIS, STENOSIS (2782)

ANORECTAL JUNCTION
- CARCINOMA, CLOACOGENIC, ENTEROGENOUS CYST (0470)

ANORECTUM
- MELANOBLASTOMA, HEMORRHOIDS, MALPIGHIAN, MUCOSA (6724)

ANOREXIA
- NERVOSA (7709)
- TREATMENT, PERIACTIN, 'GASTROENTEROLOGY (2991)

ANOREXIA NERVOSA
- TREATMENT, SERATONIN ANTAGONIST, HISTAMINE ANTAGONIST (2994)

ANOXIA
- ELECTRICAL POTENTIAL CHANGES, LIVER, SURGERY, RABBITS (0816)*
- SMALL INTESTINE, METABOLISM, SUGAR (3237)

ANTACID
- AMYLOPECTIN SULFATE, ULCER, DUODENUM (6658)*
- EUGASTRID, PEPTIC ULCER, ANTICHOLENERGIC, COMBINATION (2649)

ANTHELMINTIC
- ACTIVITY, BIOCHEMISTRY, LIVER FLUKE (4199)
- ASCARIASIS, I-TETRAMISOLE (4682)
- CHLORHYDROXYGUINOLIN, GIARDIASIS, SMALL INTESTINE (1548)
- CLONORCHIASIS CONTROL, NEW (4676)
- INTESTINAL, DICHLORVOS, MAN (1544)
- LIVER FLUKE, FASCIOLA HEPATICA, SGOT LEVEL (4661)*
- PYRANTEL PAMOATE, ASCARIASIS, CHILDREN (9259)*
- TAPEWORM, PAROMOMYCIN (2252)

ANTIBIOTIC
- ACTINOMYCIN D, INTESTINAL EPITHELIUM, RAT (8690)*
- ACTINOMYCIN D, RNA, SYNTHESIS, LIVER, RAT (2313)
- AMPICILLIN, COLONIC CANCER, SURGERY (7466)
- ANTHIOMALINE, ASTIBAN, NIRIDAZOLE, SCHISTOSOMIASIS, CAMEROON (2253)
- AZASERINE, FAT, LIVER, RAT (2856)*
- BACTERIAL INFECTION, IRAN, CHILDREN (2228)
- BILIARY TRACT, BACTERIA, EPIDEMIC HEPATITIS (2873)
- CEPHALORIDINE, SALMONELLOSIS, TREATMENT (0692)
- CHEMICAL THERAPY, INTESTINAL INFECTIONS (3760)
- CHLORAMPHENICOL, AMPICILLIN, ANTIBODY RESPONSE, THYPHOIDPARATHYROID FEVER (2974)
- CHLORAMPHENICOL, BETAMETHASONE, FURAZOLIDONE, TYPHOID FEVER, CHILDREN (2976)
- CHLORAMPHENICOL, METAMPICILLIN, TYPHOID FEVER (2995)
- CHLOROQUINE, GIARDIASIS, DUODENITIS, (1097)
- CHLOROQUINE, LIVER, LYSOSOMES, CAT (0844)*
- CHOLERA, DIARRHEA, VIBRIO (4584)
- COLICIN, SHIGELLA, SENSITIVITY, DYSENTERY (0479)
- COLITIS, PSEUDOMEMBRANOUS (7483)
- COLON, SURGERY, CARCINOMA (5118)
- CORTICOSTEROIDS, ESOPHAGUS, INJURIES CORROSIVE (0239)
- CYCLOHEXIMIDE, SODIUM FLUXES, CHOLERA, EXOTOXIN (6942)*
- DIARRHEA (2203)
- DOXYCYCLINE, AMEBIASIS, INTESTINE (2263)
- DYSBACTERIOSIS, INTESTINE, STREPTOMYCIN, TETRACYCLINE, PENICILLIN (6191)
- DYSBACTERIOSIS, LARGE INTESTINE, TOXIC DILATATION, ULCER, COLITIS (2748)
- E.COLI RESISTENCE, ENTERITIS, CHARACTERISTIC H-ANTIGEN (8721)
- EMETINE, LIVER, DRUG METABOLIZING ENZYME (4708)*
- ENTERIC FEVER (2226)
- ENTERITIS, DIARRHEA, NEONATE (5371)
- ESCHERICHIA COLI, DIARRHEA, INFANTILE (1519)
- FLORA, ENTEROPATHY, CHRONIC DIARRHEA (2960)
- FURAZOLIDONE, CHLORAMPHENICOL, SYSTEMIC SALMONELLOSIS (3717)
- GASTROINTESTINAL TRACT, CANDIDA ALBICANS, STEROIDS, CYTOSTATIC (6982)
- GENTAMYCIN, STERILIZATION, SURGERY, COLONIC FLORA, ANTIBACTERIAL ACTION (5941)
- INTESTINAL FLORA, CHEMOTHERAPY (4010)
- INTESTINAL FLORA, TETRACYCLINE, DOXYCYCLINE, BACTERIAL CULTURE, SIDE EFFECTS (5631)*
- INTESTINAL MICROFLORA, COLON, ILEUM (9224)
- INTESTOPAN, INTESTINE, CANDIDIASIS (3020)
- LITHOCHOLIC ACID, BILE ACID COMPOSI-

TION, CHOLESTEROL, BACTERIAL METABOLITES (5587)*
LIVER, ACTINOMYCIN, ENDOPLASMATIC NETWORK, POLYSOME, RIBOSOME (2819)
LIVER DYSFUNCTION, ABSORPTION, METABOLISM, ANIMAL (0582)*
LIVER PARENCHYMA, OVARIECTOMY, ORCHIECTOMY, RATS (0150)
MEPACRINE, METRONIDAZOLE, FURAZOLIDONE, TREATMENT, GIARDIASIS (3702)*
METRONIDAZOLE, AMEBIASIS, LIVER (3703)*
NEOMYCIN, COLON, SURGERY (1261)
NEOMYCIN, INFECTIOUS DIARRHEA, CHILDREN (9202)
NEOMYCIN, MALABSORPTION, JEJUNUM, MAN (2675)*
NEOMYCIN, PENICILLIN, COLON, IRRADIATION (6930)*
NYSTATIN, NEOMYCIN, FATTY ACID, CECUM, RAT (6512)
PAROMOMYCIN, MALABSORPTION, SMALL INTESTINE, MAN (2689)*
PAROMOMYCIN, TAENIA INFECTIONS, TREATMENT (3773)
PENICILLIN, SURGERY, COLON, BACTERIA (4881)
PENICILLIN G, WILSON'S DISEASE (7564)
PERITONITIS, DUODENAL FISTULA, DRAINAGE, PROTEASE INHIBITORS, BILLROTH RESECTION (4983)
PROTEIN SYNTHESIS, INHIBITION, HEPATECTOMY, DNA REPLICATION, CYCLOHEXAMIDE, PACTAMYCIN, SPARSOMYCIN (4831)*
PUROMYCIN, ULTRASTRUCTURE, POLYRIBOSOMAL DISAGGREGATION (6830)*
PYRAZINAMIDE, TOXICITY, HEPATITIS, HYPOLIPOPROTEINEMIA (2863)
RESISTANT SHIGELLA, EPIDEMIC, CENTRAL AMERICA (8463)
RIFAMPICIN, FECES, FLORA, BILIARY EXCRETION, RAT (2215)
SURGERY, BOWEL (3745)
TETRACYCLINE, FATTY LIVER (8333)
TETRACYCLINE, INTESTINE, ABSORPTION, RAT (4778)
TETRACYCLINE, PANCREAS, LIPASE (4814)
THERAPY, CAUSTIC BURNS, ESOPHAGUS (1826)*
TIRCINDAMYCIN, LIVER, MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, RAT (6469)
TREATMENT, BACTERIA, BILIARY TRACT, DIAGNOSIS (2176)
TRITHIOPARAMETHOXYPHENYL PROPENE, VITAMIN B-12, VIRAL HEPATITIS (1517)
UNEOMYCIN, COMBINATION, NEOMYCIN, BERBERINE, SULPHADIMIDINE, DIARRHEA, INFANTILE (2700)
UREACYCLE ENZYMES, RAT, LIVER (1760)

NTIBODY
ABO(H)-BLOOD GROUP, GASTROINTESTINAL ANTIGENS, ULCERATIVE COLITIS (8995)
ACID CELL, GASTRIC MUCOSA, CHRONIC GASTRITIS (8844)
ACTIVITY, IMMUNOGLOBULIN, SMALL INTESTINE, STOOL, ULTRACENTRIFUGATION, CHOLERA, CHROMATOGRAPHY (4573)*
AGGLUTINATING, VIBRIOCIDAL, CHOLERA, SENSITIVITY, 2-MERCAPTOETHANOL, DIARRHEA (4574)*
ANTITHYROID, THYROID, LIVER DISEASE (4499)
AUSTRALIA ANTIGEN, VIRAL HEPATITIS, CHIMPANZEES (0606)*
AUTO-, GEL PRECIPITATION METHOD, LIVER (4069)
AUTO-, INFECTIOUS HEPATITIS (7621)
AUTO-, STOMACH, INTRINSIC FACTOR, PERNICIOUS ANEMIA (3338)*
BILE CANALICULI, CHRONIC HEPATITIS (2125)*
CHOLERA, VIBRIO CHOLERAE, IMMUNOGLOBULIN ACTIVITY, RADIOIMMUNODIFFUSION (4572)*
CHOLERAGENIC, BLOOD, INTESTINAL INFECTION, INFANT, RABBIT (0929)
CHRONIC HEPATITIS, CHRONIC CIRRHOSIS, SERUM PROTEIN FRACTION (2819)
COPRO-, EL TOR VIBRIO, INTESTINE (4633)
COPRO-, HEMAGGLUTINATION, IMMUNOGLOBULIN (3040)*
DELOMORPHOUS CELLS, INTRINSIC FACTOR, GASTRECTOMY, ULCER, DIABETES MELLITUS (2952)
DESTRUCTION, INTESTINAL JUICE, PROTEINASE INHIBITOR (7983)*
ECHO VIRUS, NASO PHARYNX, SPINAL FLUID (6931)*
FECES, IMMUNIZATION, RABBIT (7985)*
FORMATION, ANTIGEN STORAGE, LYSOSOMES, LIVER, SPLEEN (0148)
FLUORESCENT, COLIENTERITIS, DIAGNOSIS, INFANTS (7287)
FLUORESCENT, SCHISTOSOMIASIS, EVOLUTION (8485)*
GAMMA GLOBULIN, IMMUNE RESPONSE, APPENDIX, RABBIT (3026)*
GASTRIC, CHRONIC GASTRITIS (2620)
GASTRIN, PRODUCTION, BEHAVIOR, USE (7050)
GASTRIN, SERUM, RADIOIMMUNOASSAY (2323)
GASTRIN TETRAPEPTIDE, SERUM PROTEIN CARRIERS (8506)*
GASTROINTESTINAL SECRETIONS, IMMUNOGLOBULINS (0903)*
HUMAN, AUSTRALIA ANTIGEN, HEPATITIS (7607)
HUMORAL, ISOANTIGEN, IMMUNOFLUORESCENCE, HEPATOMA CELLS (1581)*
ILEOSTOMY, ILEUM, SURGERY (2311)
IMMUNE SYSTEM, IGA, SECRETION (3828)
IMMUNOLOGY, HEMATOLOGY, HEMOLYTIC ANEMIA, VIRAL HEPATITIS (2875)
ISO-, ANTI-COLON, DIGESTIVE GROUP, AUTO-IMMUNE, HUMAN (5126)
ISO-, SPECIFIC GROUP ANTIGEN, DIGESTIVE (3085)
LIVER, HEPATOMA, LIVER ALDOLASE, MUSCLE ALDOLASE (1703)*
LIVER PATHOLOGY, MITOCHONDRIA, IMMUNOLOGY (2817)
PARIETAL CELL, GASTRITIS, SECRETION (3339)*

  - PARIETAL CELL, RHEUMATOID ARTHRITIS, VITAMIN B12, ABSORPTION (1625)*
  - PARIETAL CELL, STOMACH, GASTRITIS (2602)
  - PARIETAL CELL, THYROID, PREVALENCE (2372)*
  - RESPONSE, AMPICILLIN, CHLORAMPHENICOL, ENTERIC FEVER (2974)
  - SCHISTOSOMA MANSONI, PLACENTAL BARRIER, PASSAGE (3770)*
  - STOMACH, CARCINOMA, ACID, SECRETION, ANEMIA (3363)
  - STOMACH, INHIBITORY, GASTRIN (2370)*
  - TOXOCARA CANIA INFECTION, RESPONSE, BABOON (3774)
  - TREATMENT, AMEBIASIS (2261)
  - ULCERATIVE COLITIS, HYPERSENSITIVITY, DNA, SALAZOPYRINE, TISSUE DAMAGE, AUTOLOGOUS LEUCOCYTES (5132)
  - V. CHOLERAE, IMMUNIZATION, SERUM (4577)*
  - VIBRIOSIS, VIBRIO FETUS INTESTINALIS, VIBRIO FETUS VENEREALIS (2968)
  - VIRUS-SPECIFIC, CHRONIC HEPATITIS, IMMUNOSUPPRESSIVES, CIRRHOSIS, ACUTE INTOXICATION (5247)
- ANTICARCINOGEN
  - VINCRISTINE, HEPATOBLASTOMA, INFANT (2047)
- ANTICHOLINERGIC
  - ANTISPASMODIC, PENTAPEPTIDE, METHYLSULFATE (5523)
  - DISTAL COLON, MECHANISM OF ACTION, GUINEA-PIGS (0040)*
  - DUODENAL ULCER, SECRETION, GASTRIC ACID (1112)*
  - EXPERIMENTAL ULCER, PREVENTION, RAT (0307)
  - EXPERIMENTAL ULCER, STOMACH, RAT (1019)*
  - GASTROINTESTINAL PATHOLOGY (4640)
  - GLYCOPYRROLATE, GASTRIC SECRETION (3910)
  - METOCHLOPRAMIDE, STOMACH, DUODENUM (1661)
  - NACTON, ROBINUL, ACID, HISTALOG (6612)*
  - 1- HYOSCYAMINE, PENTAGASTRIN, SECRETION, ACID, PEPSIN, STOMACH, PEPTIC ULCER (3394)
  - PROPANTHELINE BROMIDE, ULCER, DUODENUM (6658)*
  - SECRETION, GASTRIC ACID, COMA (0783)*
  - SECRETION, GASTRIC ACID, STOMACH (0788)*
  - STOMACH, DUODENUM, ULCER (1828)
- ANTICONVULSANT
  - DIPHENYLHYDANTOIN, WATER, ELECTROLYTE, ABSORPTION, INTESTINE, RAT (2348)
- ANTICYTOLYTIC
  - LIVER, HEPATOCYTE (1729)
- ANTIEMETIC
  - CHOLINERGIC, METOCHLOPRAMIDE, GASTROINTESTINAL TRACT (1660)
- ANTIGEN
  - ACUTE VIRAL HEPATITIS, ADOLESCENT (6100)
  - ACUTE VIRAL HEPATITIS, EPIDEMIC (6099)
  - ACUTE VIRAL HEPATITIS, TEST (7230)
  - ASCARIS, HOST COMPONENTS, IMMUNITY (6268)
  - AUSTRALIA, ACUTE LIVER DISEASE, CHRONIC, LIVER DISEASE, CIRRHOSIS, HEPATITIS (6050)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS (6090), (7606), (7611), (7620), (7623), (8353)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, CIRRHOSIS (7630)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, IMMUNOLOGY, PARTICLES (5454)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, LIVER (6867)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, PRESYMPTOMATIC DIAGNOSIS (1418)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, SERUM HEPATITIS (5699)
  - AUSTRALIA, ACUTE VIRAL HEPATITIS, RADIOIMMUNOASSAY (5700)
  - AUSTRALIA, ANTIBODIES, CHIMPANZEES (0606)*
  - AUSTRALIA, ANTIBODIES, HEPATITIS (7607)
  - AUSTRALIA, BLOOD DONORS, VIRAL HEPATITIS (9116)
  - AUSTRALIA, CHILE, INCIDENCE, VIRAL HEPATITIS (9119)
  - AUSTRALIA, FAMILY, ACUTE VIRAL HEPATITIS, DIAGNOSIS, CARRIER (6087)
  - AUSTRALIA, HEMODIALYSIS CENTER, VIRAL HEPATITIS (9118)
  - AUSTRALIA, HEPATITIS (3624)*, (3629), (4480), (5272)
  - AUSTRALIA, HEPATITIS, CHRONIC (3641)*
  - AUSTRALIA, HEPATITIS, CIRRHOSIS, CANCER (6778)*
  - AUSTRALIA, HEPATITIS, EPIDEMIOLOGY, VIROLOGY, CARRIER STATE, DOWN'S SYNDROME, MENTAL RETARDATION (6864)
  - AUSTRALIA, HEPATITIS, INFECTIOUS DISEASE, ADAPTATION (3632)
  - AUSTRALIA, HEPATITIS, LEPROSY (2879)
  - AUSTRALIA, HEPATITIS, LEUKEMIA (7622)
  - AUSTRALIA, HEPATITIS, VIRAL (0621), (5268)
  - AUSTRALIA, HEPATITIS, VIRAL, ETIOLOGY (0624)
  - AUSTRALIA, HISTORY, HEPATITIS (5270)
  - AUSTRALIA, INCIDENCE, LIVER DISEASES, VIRAL HEPATITIS (9141)
  - AUSTRALIA, LIVER DISEASE (0536)*
  - AUSTRALIA, PLASMA, SERUM GLUTAMIC OXALACETIC TRANSAMINASE, HEPATITIS CARRIER (6862)
  - AUSTRALIA, TRANSFUSION, HEPATITIS (6863)
  - AUSTRALIA, VIRAL HEPATITIS (2114), (7612)
  - AUSTRALIA, VIRAL HEPATITIS, BLOOD TRANSFUSION, PROPHYLAXIS (9125)
  - AUSTRALIA, VIRAL HEPATITIS, DIAGNOSIS (2501)*
  - AUSTRALIA, VIRAL HEPATITIS, INCIDENCE, SICILY (9138)
  - AUSTRALIA, VIRAL HEPATITIS, INCUBATION, SERUM (1433)
  - AUSTRALIA, VIRAL HEPATITIS, LIVER

DISEASES, SYSTEMIC DISEASES (9139)
AUSTRALIA, VIRAL HEPATITIS, LIVER DISEASES, TRANSFUSION PATIENTS (9119)
AUSTRALIA, VIRAL HEPATITIS, PERIARTERITIS NODOSA, LIVER HISTOPATHOLOGY (9121)
AUSTRALIA-SH, ACUTE VIRAL HEPATITIS (6098)
AUSTRALIA-SH, CHRONIC LIVER DISEASE, DRUG ADDICTS, DENMARK (6101)
AUSTRALIA-SH, HEPATITIS (0607)*
AUSTRALIA-SH, HEPATITIS, HEMODIALYSIS (0609)*
AUSTRALIA-SH, LIVER DISEASE (2882)
AUSTRALIA-SH, VIRAL HEPATITIS, LONDON (3625)*
BLOOD GROUP A, GOBLET CELLS (6310)*
CARCINOEMBRYONIC, ULTRASTRUCTURAL LOCALIZATION, COLON (7456)*
CARCINOID, GASTROINTESTINAL TRACT, TUMOR, HUMAN, IN VITRO (3801)*
CHOLERA, IMMUNOLOGY, RAT FOOT EDEMA MODEL (6175)
CYST, AMEBIASIS, SERODIAGNOSIS (7279)
E.COLI, CULTIVATION, IMMUNOFLUORESCENCE (8720)
ENTAMEBA, SEROLOGY (5403)
GASTRIC CANCER, BLOOD GROUPS (5775)
GASTRIC MUCOSA (2380)
HEPATITIS, IMMUNOELECTROPHORESIS, OUCHTERLONY TECHNIQUE, SERUM PROTEIN, BLOOD TRANSFUSION (4945)
HEPATITIS ASSOCIATED, PREPARATION, SEROLOGICAL CHARACTERIZATION, IMMUNE RESPONSE (2000)*
ILEUM, ANAPHYLAXIS, GUINEA-PIG (5053)
ISO, IMMUNOFLUORESCENCE REACTION, HUMORAL ANTIBODY, HEPATOMA CELLS (1581)*
ISO-ANTIBODIES, DIGESTIVE JUICE (3085)
LIVER, CHRONIC HEPATITIS, ACUTE HEPATITIS (2133)*
LIVER CELLS, SUBCELLULAR FRACTIONS (0751)*
PROTEIN, IMMUNOLOGY, CHOLERA (5107)
SERUM HEPATITIS, INFECTIOUS HEPATITIS (5253)*
SH SERUM HEPATITIS, DRUG USERS (5695)
SH SERUM HEPATITIS, IMMUNOELECTROOSMOPHORESIS (6518)*
SH SERUM HEPATITIS, PREVALENCE (9114)*
SKIN REACTIVE, CANCER, COLON, RECTUM, TUMOR (6694)*
SOLUBLE, BIOCHEMISTRY, IMMUNOCHEMISTRY, COLIC MUCOSA (3086)
SPECIFIC FEATURES, FASCIOLA HEPATICA, LIVER ALTERATIONS (8539)
STIMULATION OF LYMPHOCYTES, IN VITRO, LIVER, CIRRHOSIS (9065)
STOMACH, MUCOSA, HUMAN, IMMUNOFLUORESCENCE, HETEROIMMUNSERA (3795)*
STORAGE, ANTIBODY FORMATION, LYSOSOMES, LIVER, SPLEEN (0148)
TUMOR, COLON (1254)
V. CHOLERAE, IMMUNIZATION, ANTIBODY, SERUM, BRUCELLA, CITROBACTER (4577)*
  VI-, TYPHOID FEVER THERAPY (6241)
  VIBRIO PARAHAEMOLYTICUS, EPIDEMIOLOGY (7699)
  VIRAL HEPATITIS, CROSSED ELECTROPHORESIS (7211)*
ANTI-HISTAMINE
  GASTRIC ULCER, GASTRIN, AMINOGUANIDINE (6615)*
ANTIHYPERTENSIVE
  BILIARY SECRETIONS, EXOCRINE, PANCREATIC SECRETIONS, RAT (2491)
ANTI-INFLAMMATORY
  BENZYLIDENEYOHIMBOL, LIVER, ULTRASTRUCTURE, RAT, DOG (3028)*
  FLUFENAMIC ACID, ULCEROGENESIS, SMALL INTESTINE (6671)*
ANTILYMPHOCYTE SERUM
  JEJUNUM, SMALL INTESTINE (1931)
ANTIMETABOLITE
  AZATHIOPRINE, CROHN'S DISEASE, STEROIDS (0399)
ANTIOXIDANT
  BUTYLATED HYDROXY TOLUENE, MICROSOME ENZYME, STIMULATION (1614)
  ETHANOL, FATTY LIVER, MECHANISM (3595)
ANTISEPSIS
  INTESTINAL, ANTIBIOTICS, MECHANICAL CLEANSING, FECAL FLORA (0424)*
ANTISEROTONIN
  DUMPING SYNDROME, GASTROENTEROSTOMY, PEPTIC ULCER, GASTRECTOMY METHYSERGIDE (5079)
ANTISPASMODIC
  PHLORO-GLUCINOL-TRIMETHYLESTER, BILIARY AND INTESTINAL DISEASES (1656)
ANTITHYMOCYTE GLOBULIN
  HEPATITIS, VIRUS (3626)*
ANTITUBERCULOUS DRUG
  ETHIONAMID, ISONIAZID, AMINOSALICYLIC ACID, ABSORPTION, GI TRACT (1899)
ANTRAL POUCH
  MOTILITY, STOMACH, DENERVATED (1645)*
ANTRUM
  PYLORIC, PREPYLORIC, ENDOSCOPY, MUCOSA (6638)
  PYLORUS, HETEROTOPIC PANCREAS, BLEEDING SYNDROME (9005)
ANUS
  ABNORMAL, DIARRHEA (4301)
  ANAL CANAL, SQUAMOUS CELL CARCINOMA, MELANOMA (8184)
  ANAL SPHINCTER, POST-HEMORRHOIDECTOMY PAIN (1988)
  ANATOMY, SURGERY, RECTUM (4729)
  ANORECTAL ANOMALIES, CLASSIFICATION (7469)
  ANORECTAL ANOMALIES, CONGENITAL, SURGERY (6719)
  ANORECTAL ANATOMY (3503)
  ANORECTAL FISTULA, MUCOID ADENOCARCINOMA (3501)
  ANORECTAL VENEREAL DISEASES, PROCTOLOGY, DETECTION (8982)
  CANCER, COLON, RECTUM, SURGERY (4193)
  CANCER, RADIOTHERAPY (2005)
  CANCER, RECTUM, COLON (4271)
  CARCINOMA, COLON, RECTUM (7475)
  CARCINOMA, TNM CLASSIFICATION (2011)

  - COLLOID CARCINOMA, RECTUM, MUCUS (5907)
  - COLON, STRICTURE, ANASTOMOSIS, SWENSON'S OPERATION (0436)
  - CONGENITAL MALFORMATIONS, ETIOLOGY, TREATMENT (1303)
  - DEFECATION, COLON, RECTUM (4802)
  - DIVERTICULITIS, DIVERTICULOSIS, SURGERY (2727)
  - ECTOPIC, PATHOGENETIC FACTORS, PROGNOSIS, OBSTETRIC TREATMENT (3491)
  - FENESTRATED CAPILLARIES, LAMINA PROPRIA, RABBIT, MOUSE (0706)
  - FISSURE, SURGERY (3484)
  - FISTULA (4278)
  - FISTULA, ANATOMOPATHOLOGY, TREATMENT (8943)
  - GRACILIS ANOPLASTY, INCONTINENCE (5911)
  - HEMORRHOID, RECTUM, PATHOGENESIS, ANATOMY (5939)
  - IMPERFORATE, ADULT, SURGERY (8195)
  - IMPERFORATE, ANO-RECTAL RINGS (6778)
  - IMPERFORATE, LATENT ANOMALIES (3493)
  - IMPERFORATE, SURGERY, EXTERNAL SPHINCTER, LOCALIZATION (1267)
  - IMPERFORATE, URINARY TRACT DISEASE (2709)
  - INTERNAL HEMORRHOIDS, RINGING (7486)
  - MALFORMATION, SPHINCTER, SURGERY, CLOACAL PARTITION (5093)
  - MALIGNANT MELANOMA, RECTUM (6727)
  - MELANOMA, SURGERY (1994)
  - MUSCLE, PHOSPHORYLATION, TESTOSTERONE, INSULIN, ANEROBIOSIS (3872)
  - PERIANAL PAGET'S DISEASE, RADIOGRAPHY, SURGERY (5908)
  - PROLAPSE, ULCERATIVE COLITIS, INTESTINAL COMPLICATIONS, LIVER, EYES, ABSCESS (5130)
  - RECTOSIGMOID RUPTURE, ILEAL EVISCERATION (5930)
  - RECTUM, FISTULA, SURGERY (5731)
  - RECTUM, INJURY, SURGERY (4269)
  - SCHISTOSOMA, INFECTION, PEDIATRICS (2254)
  - SPHINCTER, ELECTROMYOGRAPHY (6532), (6533)
  - SPHINCTEROTOMY, FISSURE-IN-ANO (7478)
  - SPHINCTER, INCONTINENCE, SURGERY, FASCIA PLASTIC, GRACILIS MUSCLE (4968)
  - SURGERY, HEMORRHOIDS (2725)
  - SURGERY, PRURITUS, GRAFT (2726)
  - SYPHILIS, PRIMARY AND SECONDARY, DIAGNOSIS (8984)
  - ULCERS, NECROTIZING ANORECTAL, PSUEDOMONAS INFECTION (0490)
- AORTA
  - FISTULA, COMMON ILIAC ARTERY, JEJUNUM (1174)
- AORTITIS
  - SALMONELLA, DISTAL ABDOMINAL AORTA (2993)
- APPENDECTOMY
  - AGED, DIAGNOSIS, PERFORATION, GANGRENE (2744)
  - AMPICILLIN, DOUBLE-BLIND STUDY (0440)
  - GAS GANGRENE, ABDOMINAL WALL (1251)
  - NORMAL APPENDIX, OBSTRUCTION, SMALL INTESTINE (1277)
  - URETHRAL RUPTURE, SURGICAL MANAGEMENT (8967)
- APPENDICITIS
  - ACUTE, AGED, DIAGNOSIS, PERFORATION, GANGRENE, SURGERY (2744)
  - ACUTE, ANGIOGRAPHY, DIAGNOSIS (0969)
  - ACUTE, DEATH, CHILDREN (2010)
  - ACUTE, DIAGNOSIS, RADIOLOGY (2754)
  - ACUTE, GERIATRICS, SURGERY (1996)
  - ACUTE, INFANCY, BRONCHOPULMONARY INFECTION (1231)
  - ACUTE, PERFORATION, ANTIBIOTICS (0482)
  - ACUTE, POLYMORPHONUCLEAR, LEUCOCYTE COUNT, DIAGNOSIS (1266)
  - CECUM, CARCINOMA (3485)
  - CHRONIC, ETIOLOGY, RADIOLOGY, ANATOMOPATHOLOGY (6700)
  - CHRONIC, LYMPHOCYTE, APPENDECTOMY (6721)
  - COLON, DIAGNOSIS (1977)
  - DIAGNOSIS, INFANCY, GAS PATTERN, SCOLIOSIS (0441)
  - FEMALE STERILITY (3473)
  - GERIATRICS (4295)
  - HEPATITIS, INFECTIOUS, DIAGNOSIS (0483)
  - ILEITIS, MAN (1175)
  - ILEUS, PERITONITIS (7495)
  - INFANCY, SURGERY (3487)
  - LARGE INTESTINE, INFANT (1276)
  - LEAD POISONING, OBSTRUCTION, FISTULA (3500)
  - LIVER ABSCESSES, PYLEPHLEBITIS (3494)
  - MUCOCELE, SMALL INTESTINE, OBSTRUCTION (3499)
  - NEONATE, PERITONITIS (4287)
  - PERFORATED, INFANTS, CHILDREN (0426),
  - PERITONITIS, CHRONICA FIBROSA ENCAPSULANS, ILEUS, DIAGNOSIS (8764)
  - PERITONITIS, MEGACOLON, NEONATE (4282)
  - PERITONITIS, MORBIDITY, MORTALITY (1226)
  - PSEUDO-CANCEROUS (4298)
  - PUERPERIUM, ACUTE, SURGERY, UTERUS (6702)
  - SHIGELLA SONNEI INFECTION (4592)
  - SUBHEPATIC GANGRENOUS, CALCIFIED COPROLITH, BILIARY CALCULUS (2749)
- APPENDIX
  - ABSCESS, HERNIA (5113)
  - ABSCESS, MECHANICAL ILEUS, TREATMENT (1252)
  - ACUTE APPENDICITIS, DIAGNOSIS, X-RAY (5704)
  - ACUTE APPENDICITIS, MORBIDITY, MORTALITY (5900)
  - ACUTE APPENDICITIS, PERITONITIS (5937)
  - ADENOCARCINOMA, ACUTE APPENDICITIS (5901)
  - ADENOCARCINOMA, INTUSSUSCEPTION (2716)
  - ADENOCARCINOMA, RIGHT HEMICOLECTOMY (0487)
  - APPENDECTOMY, AGE (6711)
  - APPENDECTOMY, APPENDICITIS, GERIATRICS (5928)
  - APPENDECTOMY, CANCER RISK (5927)

- APPENDECTOMY, TOTAL (5120)
- APPENDICITIS, ACUTE, CHRONIC, ILEOCECUM, CROHN'S DISEASE (5861)
- APPENDICITIS, CECUM, CARCINOMA (3485)
- APPENDICITIS, GAS GANGRENE, PERFORATION, FATAL, DRAINAGE (5097)
- APPENDICITIS, LEAD POISONING, OBSTRUCTION (3500)
- APPENDICITIS, PEPTIC ULCER, DIVERTICULITIS (6961)
- APPENDICITIS, PREGNANCY, OVARIAN SURGERY, PROGESTERONE, LABOR, ABORTION, ILEUS (5092)
- APPENDICITIS, SURGERY (3487)
- APPENDICULAR MUCOCELE, PSEUDOMYXOMA PERITONEI, CYST, PERITONEUM (2734)
- ASCENDING COLON, NEURONAL JUNCTION, INTRAMURAL PLEXUS (3802)*
- BLOOD SUPPLY, LYMPHOID TISSUE DEVELOPMENT (3992)*
- CANCER (2751)
- CARCINOID TUMOR (7479)
- CARCINOID TUMOR, ILEUM, RECTUM (6972)
- CARCINOMA, COLON (2410)
- CROHN'S DISEASE, REGIONAL ENTERITIS (5067)
- DIVERTICULITIS, APPENDICITIS, SURGERY (5103)
- DIVERTICULOSIS, APPENDICITIS, SURGERY (6718)
- DUPLICATION, ANOMALY (1262)
- ENDOMETRIOSIS, SURGERY (5104)
- GAMMA GLOBULIN, IMMUNE RESPONSE, RABBIT (3026)*
- LARGE INTESTINE, PERITONEUM, GELATIN DISEASE (4277)
- LOCALIZATION (4281)
- MALAKOPLAKIA, BACTERIA (2732)
- MALIGNANT NUCOCELE, THROMBOEMBOLIC MANIFESTATION (3497)
- MORBUS CROHN, ULCERATIVE COLITIS (7434)
- MUCINOUS ADENOCARCINOMA, PSEUDOMYXOMA PERITONEI NEURAMINIDASE (8208)
- MUCOCELE, APPENDICITIS (3499)
- MUCOCELE, CHOLECYSTITIS, DIAGNOSIS, SURGERY (2735)
- MUCOCELE, EXTRACECAL, ILEOCECAL, TUMOR (6726)
- PERFORATED, PERITONITIS, HYPERBILIRUBINEMIA, RH IMMUNIZATION (0442)
- POLYP, ANATOMICOPATHOLOGY, RADIOLOGY HISTOLOGY (0444)
- SHIGELLA, DYSENTERY, APPENDICITIS (3461)*
- SUBHEPATIC GANGRENOUS APPENDICITIS, CALCIFIED COPROLITH, BILIARY CALCULUS (2749)
- SURGERY, RADIOLOGY, PERFORATION (2713)
- TAENIA INFESTATION (7013)
- TUMOR, BENIGN, FIBROANGIOMA (1286)
- VERMIFORM, ADENOMA, PAPILLARY, VILLOUS (1979)
- VERMIFORM, BOECK'S DISEASE, SARCOIDOSIS, HISTOPATHOLOGY (0443)

ARGININE MALATE
- ALCOHOLIC, CIRRHOSIS, AMMONIEMIA (6884)

AROMATIC AMINE
- BENZIDINE, CANCER, BLADDER, OCCULT BLOOD, FECES (1522)
- CAPSAICIN, SKIN, LIVER, EPIDERMIS, LYSOSOME, MAN (2444)

ARTERIOGRAPHY
- ABDOMINAL, SAFEGUARDS AGAINST MISUSE (2532)
- ADENOMA, PANCREAS, DIAGNOSIS (4336)
- CANCER, RECTUM, DIAGNOSIS (0453)
- CELIAC, HEPATIC ARTERY ANEURYSM (4635)
- CELIAC AXIS, 99MTC SCANNING, STOMACH (4026)
- COLON, VIABILITY, ABDOMINAL PERFORATION (1976)
- DIAGNOSIS, GASTROINTESTINAL TRACT, HEMORRHAGE (0966)
- HEMORRHAGE, GASTROINTESTINAL TRACT (1080)
- HYDATID CYSTS, LIVER (4681)
- LIVER, HEPATOMA, CIRCULATION (7213)*
- LIVER, SCINTILLOGRAPHY, SPACE OCCUPYING LESIONS (1801)*
- PANCREAS, DISEASES (0505)
- SMALL INTESTINE, TUMORS, HISTOLOGY (8907)
- ULCERATIVE RECTOCOLITIS, LOWER MESENTERIC ARTERIO-VENOUS FISTULA SURGERY (8996)

ARTERY
- ABDOMINAL AORTA, ILIAC, SURGERY, AORTO-INTESTINAL FISTULAS (1938)
- CELIAC AXIS, EXTERNAL COMPRESSION (4590)
- COMMON ILIAC, FISTULA, JEJUNUM (1174)
- DISEASES, GASTROINTESTINAL TRACT (0707)
- GASTRODUODENAL, EROSION, PANCREAS, PSEUDOCYST (0503)
- HEPATIC, ANEURYSM (6824)
- HEPATIC, BLOOD RESTRICTION, LIVER ALLOTRANSPLANTATION (3182)
- HEPATIC, INFUSION CHEMOTHERAPY, HEPATIC CARCINOMA, SURGICAL BASIS (3571)
- HEPATIC, LIGATION, LIVER REGENERATION, RESECTION, RAT (1746)
- LIVER, HILUS (2497)
- MESENTERIC, ISCHEMIA, INTESTINE, EMBOLISM (3746)
- MESENTERIC, SMALL, GEOMETRY, MECHANICAL PROPERTIES (3064)
- NERVOUS CONTROL, PERFUSION STUDY (0930)
- PANCREATICODUODENAL, SPONTANEOUS RUPTURE, DIAGNOSIS, SURGERY (9222)
- PERARTERITIS NODOSA, DIGESTIVE MANIFESTATIONS (4609)
- SPIDERS, WIDESPREAD, LATENT HEPATITIS (3647)
- SPLENIC, LIGATION, HEPATIC ARTERY, CIRRHOSIS (3654)
- SUPERIOR MESENTERIC, CIRCULATION, LIVER EXCLUSION, GLUCAGON (2483)*
- SUPERIOR MESENTERIC, UPPER GASTROINTESTINAL OBSTRUCTION, SEVERE BURNS (2211)

ARTHRITIS
- ADJUVANT-INDUCED, DRUG METABOLISM, LIVER, RAT (3210)
- AMYLOIDOSIS, HEPATIC, REGRESSION, RENAL CANCER, NEPHRECTOMY, MUCOPROTEINS, LIVER BIOPSY (5185)
- FREUND'S ADJUVANT, STOMACH, SMALL INTESTINE, THYMUS (4578)
- POLY, CHRONIC, GOLD TREATMENT, CHOLESTASIS, MUCOSA, REVERSIBLE CHANGES, AURO-DETOXIN (5194)
- RHEUMATOID, LIVER, PATHOLOGY, SJOGREN'S SYNDROME (5206)

ARTHROPATHY
- LIVER, DISEASE (3553)

ASCARIASIS
- BILIARY CALCULUS (4665)
- EPIDEMIOLOGY, SOIL INFECTION, CHILDREN (7768)
- LEVAMISOLE, THERAPY, PARASITE (1558)
- LIVER, BILE DUCTS, SURGERY (7769)
- LUMBRICOIDES, PYRANTEL PAMOATE, CHILDREN (9259)*
- MAN (3014)*
- 1-TETRAMISOLE ANTHELMINTIC ACTION (4682)
- SCHWARTZMAN PHENOMENON, ASCARIDE TISSUE (7201)
- THIABENDAZOLE TREATMENT, IRAN (9262)
- TREATMENT, ENZYME (4669)

ASCITES
- ALCOHOLIC CIRRHOSIS, SURGERY, LIVER (6906)
- BILE (2932)
- CHRONIC, PANCREAS, PSEUDOCYST (8243)*
- CHYLOUS, DIAGNOSIS, SMALL INTESTINE, LYMPHATIC, TRIGLYCERIDE, FATTY ACID (6218)
- CHYLOUS, INGUINAL HERNIA, INFANT, LYMPHATICS (6207)
- CHYLOUS, MALIGNANT TUMORS, LIVER, STOMACH (7750)
- CIRRHOSIS, CORTICOIDS, DIURETICS, HEMODILUTION (6885)
- CIRRHOSIS, LIVER, EDEMA, COMPARTMENTALIZATION (6123)
- CIRRHOSIS, MANAGEMENT, HEPATIC COMA, DIURETICS (6901)
- CIRRHOSIS, PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION (6894)
- DIAGNOSTIC ERROR, PANCREATIC CYST, CHILDREN (3517)
- ECHINOCOCCOSIS, ABDOMEN (1538)
- EHRLICH, ANTITUMORUS DIPHENYLGLYOXAL, IMMUNOLOGY (3830)
- EHRLICH, CARCINOMA (2302)
- GLYCOGEN SYNTHETASE ACTIVITY, ALKYLATING AGENTS (7173)
- HEMORRHAGIC, HEPATOMA, OVARIAN CANCER (1450)
- HEPATIC, ALBUMIN, PORTAL HYPERTENSION, HYPOVOLEMIA, DIURETICS, SPIROLACTONE (5279)
- HYDATID CYST, CHOLECYSTECTOMY (7758)
- LAENNEC'S CIRRHOSIS, ALCOHOLISM (1447)
- LIVER, CIRRHOSIS, SURGERY (6797)
- LIVER, HEAVY METAL IONS (7544)
- LIVER HEPATOMA (3561)
- MASSIVE, GASTRIC ANTHRAX (7361)
- PORTAL HYPERTENSION, HEPATIC LYMPH, CIRRHOSIS, HYPOALBUMINEMIA (6217)
- TUMOR, METABOLISM (2450)
- TUMOR CELLS, GLYCOGEN PHOSPHORYLASE, ALKYLATING AGENTS (7172)

ASCORBIC ACID
- LIVER, CHOLESTEROL, METABOLISM (2439)

ASPIRATION
- GASTRIC, PERISTALTIC PUMP, SECRETION WASHOUT (0296)

ASPIRIN
- BLOOD LOSS, PERNICIOUS ANEMIA, GASTRIC MUCOSA (6614)*
- GASTROSCOPY, FECAL BLOOD LOSS (0971)
- HEMORRHAGE, GASTROINTESTINAL TRACT (1071)
- STOMACH, MUCOSA, BLOOD FLOW (3241)*

ASTHMA
- INTESTINE, PARASITE (2257)

ATAXIA
- TELANGIECTASIA, STOMACH, ADENOCARCINOMA (1093)

ATONIA
- SURGERY, ACUTE, LAPAROTOMY, MOTILITY (6977)

ATP
- HEPATOCARCINOGENESIS, MITOCHONDRIA, MICROSOME, ETHIONINE (6812)*
- LIVER, ENZYME (3061)

ATRESIA
- ANAL, RECTAL MALFORMATION, SKELETAL (7452)*
- ANUS, ADULT, SURGERY (8195)
- ANUS, RECTUM, DIAGNOSIS (8761)
- BILE DUCT, NEWBORN, SURGERY, CIRCULATION (2956)
- BILE DUCT, SURGERY, LIVER (4540)
- BILIARY, EXTRAHEPATIC, CONGENITAL (2930)
- BILIARY, LIVER DISEASE, JAUNDICE, INFANTS (2928)
- BILIARY PATHWAYS, CONGENITAL, SURGERY, PROGNOSIS (0668)
- COLON, DIAGNOSIS, TREATMENT (8979)
- CONGENITAL, BILE DUCT (4559)
- CONGENITAL, BILE DUCTS, STATISTICS (4560)
- CONGENITAL, BILIARY DUCT, INTESTINAL EXCRETION OF BILE PIGMENTS, CHILDREN (2171)
- CONGENITAL, BILIARY TRACT, SURGERY (4543)
- CONGENITAL, INTESTINE, CHILDREN (7689)
- CONGENITAL, INTRAHEPATIC BILE DUCTS, OBSTRUCTION (2062)
- ESOPHAGEAL, ASSOCIATED MALFORMATIONS, SURGERY, PROGNOSIS (8803)
- ESOPHAGEAL, INFANT, COLON, TRANSPLANT (6583)
- ESOPHAGEAL, MEMBRANOUS STENOSIS, THERAPY, ANATOMOPATHOLOGY (8801)
- ESOPHAGEAL, VARICES, REPLACEMENT, COLON (8809)
- ESOPHAGUS (0248)
- ESOPHAGUS, DIAGNOSIS (1829)
- ESOPHAGUS, SURGERY, INFANT (8794)
- ESOPHAGUS, SURGERY, MORTALITY (8802)

- ESOPHAGUS, SURGERY, STRICTURE (2564)
- ESOPHAGUS, SURGERY, TEMPORARY GASTRIC PARTITION (2577)
- ESOPHAGUS, TRANSVERSE COLON TRANSPLANT, ESOPHAGOSTOMY (8812)
- GASTRIC ANTRUM, SURGERY (8097)
- MULTIPLE, INTESTINAL OCCLUSION, NEONATE (4238)
- SMALL INTESTINE, MALFORMATION, SURGERY (4230)

ATROPHIC BORDER
- PYLORIC GLAND, FUNDIC GLAND, ENDOSCOPY, GASTRIC ANALYSIS, CHRONIC GASTRITIS (0302)

ATROPINE
- DUODENAL ULCER, STOMACH, SECRETION (2635)
- GALLBLADDER, MOTOR FUNCTION, CHRONIC CHOLECYSTITIS (2918)
- MESENTERIC, ARTERY POSTPRANDIAL, DILATION (6499)*
- MUSCLE RESPONSE, ESOPHAGUS (3317)
- SECRETION, GASTRIC (0064)*

AUTOIMMUNOLOGY
- HEPATITIS, CHRONIC, COLLAGEN DISEASE, CIRRHOSIS (6871)

AUTONOMIC GANGLIA
- BLOCKING AGENTS, STIMULANTS, SECRETORY RESPONSE, HEIDENHAIN POUCH, DOG (1677)
- LARGE, INTESTINE, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*

AUTONOMIC NERVOUS SYSTEM
- GRADED ELECTRICAL STIMULATION, REGIONAL COLONIC BLOOD FLOW EFFECTS (3258)
- STOMACH, TOAD (0805)

AUTORADIOGRAPHY
- CARBONTETRACHLORIDE POISONING, LIVER, MUCOPOLYSACCHARIDE (1714)*
- ENZYMES, LOCALISATION, LIVER (7037)*
- ERYTHROCYTE, LIVER (7049)
- HOOKWORM, PROTEIN, HEMOGLOBIN (3794)*
- METAL ISOTOPE, SMALL INTESTINE, PANETH CELL, COLON (5481)*
- MUCOSA, STOMACH, THYMIDINE-H3, INFILTRATION (0222)
- RNA, SYNTHESIS, LASIOCARPINE, LIVER (3817)*

AUTOTRANSPLANTATION
- CANCER DEVELOPMENT, PANCREAS (4532)
- CHOLEDOCHAL SUTURE CONSTRICTION (4547)
- LIVER, HETEROTROPIC, TECHNIQUES, RESULTS (2449)
- LIVER, METABOLISM, DNA, PROTEIN (0817)*

AZATHIOPRINE
- CHRONIC HEPATITIS (4500)
- CHRONIC, HEPATITIS, IMMUNOSUPPRESSIVE (6874)
- CIRRHOSIS, THERAPY (6681)*
- CROHN'S DISEASE, FISTULA, LARGE INTESTINE, ILEUM (0397)*
- CROHN'S DISEASE, STEROIDS (0399)

BACILLUS
- DYSENTERY, SHIGELLA (2225)
- DYSENTERY, SHIGELLA, DIARRHEA (4637)

BACTERIA
- AEROBIC AND ANEROBIC, PANCREATITIS (3538)
- AEROMONAS, HYDROPHILIA, ACUTE ENTERITIS (2266)
- AEROMONAS, HYDROPHILA, ENTERITIS, UNCOOKED, FOOD, TOURISTS (6904)
- AEROMONAS, HYDROPHILA, FECES, DNASE AGAR (7250)
- BALANTIDIUM COLI, COLITIS (7763)
- BALANTIDIUM COLI, DIARRHEA (7756)
- BILIARY TRACT, DIAGNOSIS, TREATMENT (2176)
- BLOOD, INFECTION, SMALL INTESTINE (7677)*
- CECUM, ANEROBIC, FUSOBACTERIUM, EUBACTERIA, CLOSTRIDIUM (6947)*
- CECUM, FATTY ACID, ANTIBIOTIC, RAT (6512)
- CHOLERA, FOWL, IMMUNOLOGY (5363)
- CLOSTRIDIAL INFECTION, CHOLECYSTECTOMY (3669)
- CLOSTRIDIUM, PERFRINGENS, FLORA, NORMAL INTESTINE (8695)*
- CLOSTRIDIUM, PERFRINGENS, INTESTINE, IMMUNOLOGY, LAMB (5396)
- CLOSTRIDIUM, PERFRINGENS, SMALL INTESTINE, FOOD POISONING, DIARRHEA (4884)
- CLOSTRIDIUM, PERFRINGENS, THYMIDINE KINASE, LIVER (3846)
- COLIENTERITIS, EPIDEMIOLOGY, NEONATE (7730)
- COLIENTERITIS, FLUORESCENT ANTIBODIES, DIAGNOSIS, INFANTS (7287)
- COLIENTERITIS, NEONATE (7731)
- COLIFORM, BILE CULTURE, BILIARY TRACT DISEASE, CHOLELITHIASIS, CHOLECYSTITIS, CHOLEDOCHOLITHIASIS (4525)*
- COLON RESECTION, ILEOSTOMY (5931)
- COLONIZATION, JEJUNAL JUICE, BILE, SALT HYDROLYSIS, GASTROINTESTINAL DISEASE (1152)*
- CORYNE-, WHIPPLE'S DISEASE, LYMPHANGIECTASIES, FROTHY HISTIOCYTES, PLASMODIA (5887)*
- DIAGNOSTIC PROCEDURE, FLUORESCENT IMMUNOTEST, ENTEROPATHOGENIC COLI (8017)
- DIARRHEA, E. COLI (3488)
- DIARRHEA, ENTERITIS, SHIGELLA (2971)
- DIARRHEA, SUDAN, CHILDREN (2200)
- DIARRHEA, VIBRIO/PARAHEMOLYTICUS (6181)
- DYSBACTERIOSIS, LARGE INTESTINE, TOXIC DILATATION, COLITIS, ULCER, ANTIBIOTIC (2748)
- DYSENTERY, DIAGNOSIS (5712)
- DYSENTERY, SALMONELLA, SHIGELLA, E.COLI, INFANT (6169)
- DYSENTERY EPIDEMIC, JAPANESE, SANITATION (2247)
- E. COLI, CHILDREN (7691)
- E. COLI, DIARRHEA, SALMONELLA, SHIGELLA (1525)
- E. COLI, DYSENTERY, SEROLOGY (7729)
- E. COLI, ENDOTOXIN, SMALL INTESTINE, OBSTRUCTION, MICE (3245)*

E. COLI, ENDOTOXIN SHOCK, HEPATIC CIRCULATION, ENZYMES (3551)*
E. COLI, ENTEROPATHOGENIC, DIARRHEA (8424)*
E. COLI, GASTROENTERITIS, ANTIBIOTICS, INFANTS (8435)
E. COLI, INFANTILE DIARRHEA, ANTIBIOTIC SENSITIVITY, CHEMOTHERAPEUTIC (1519)
E. COLI, INTESTINAL PENICILLIN RETENTION, GUINEA PIG (7848)
E. COLI, INTESTINAL STRANGULATION FLUID, OPSONIFICATION, P-RELEASING ACTIVITIES (2478)
E. COLI, INTESTINE, BIOCHEMISTRY, PATHOLOGY (2264)
E. COLI, RESISTANCE TYPE, INFANTS, STOOLS (6164)
E. COLI, VIBRIO CHOLERAE, TRAVELING WATER CONTAMINATION, DIARRHEA (2972)
ELECTRON MICROSCOPY, ALIMENTARY TRACT, INSECT (4876)
ENTEROCOLITIS, INTESTINE (4622)
ENTEROPATHOGENIC, DIARRHEA, HOUSING, INFANTS, PANAMA (1508)*
EPIDEMIC HEPATITIS, BILIARY TRACT, ANTIBIOTIC (2873)
ESCHERICHIA, PSEUDOMONAS, NEONATES, DIARRHEA (3711)
ESCHERICHIA COLI, ACUTE DIARRHEA, FATAL (3710)
FECES, BILE SALT DECONJUGATION (3944)*
FLORA, GAS CONTENT, SMALL INTESTINE (3256)
GAS-PRODUCING, EMPHYSEMATOUS CHOLECYSTITIS (4554)
GASTRIC ANTHRAX, MASSIVE ASCITES (7361)
GASTROINTESTINAL DISORDERS, SMALL INTESTINE, STEATORRHEA (3343)*
GASTROINTESTINAL TRACT FLORA, ZOOLOGICAL SPECIES (4001)
GRAM NEGATIVE, SEPSIS, PERITONITIS (8152)
H. INFLUENZAE, CYSTIC FIBROSIS (0500)*
ILEUM, JEJUNUM, COLON, SURGERY (1927)
IMMUNOLOGY, CHOLERA, FOWL (5362)
INFANTILE DIARRHEA (3476)
INFECTION, BILIARY TRACT, AMPICILLINE, JAUNDICE (5323)
INFECTION, IRAN, CHILDREN, ANTIBIOTIC (2228)
INTESTINAL, ANASTOMOSIS HEALING (7726)
INTESTINAL, BONE MARROW CELL PROLIFERATION (6503)
INTESTINAL, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
INTESTINAL MICROFLORA (7208)
INTESTINE, FECES (6230)
INTESTINE, ULCEROUS COLITIS, VITAMIN (2764)
KLEBSIELLA, LIVER, ABSCESS (2336)
KLEBSIELLA, PHAGE-TYPING, INFANTS, CHILDREN (2977)
LACTOBACILLUS, FECAL AMMONIA LEVELS, E. COLI, INFANTS (2495)
LACTOBACILLUS, FECAL AMMONIA, INTESTINAL FLORA, INFANT (2777)
LARGE INTESTINE, ANTIBIOTICS, CANDIDA-SPECIES, STREPTOCOCCUS, PROTEUS, PSEUDOMONAS, KLEBSIELLA (5631)*
MICROFLORA, GROWTH, X-IRRADIATION, ICR MICE (6932)*
MYCOBACTERIA, FECES, MAN (8000)
N2-FIXATION, INTESTINE, KLEBSIELLA (3700)*
PERIHEPATIC, ABSCESS, INTRAHEPATIC ABSCESS (3605)
PROLIFERATION, COLON, ANTIBIOTICS (6930)*
PROTECTIVE, SUBSTANCES, VIBRIO INFECTION (4006)
SALMONELLA (7202)
SALMONELLA, ENTERITIDIS, ENDOTOXIN, LIVER, SPLEEN, RAT, MOUSE (5983)*
SALMONELLA, ENTERITIDIS, TOXICITY (7751)
SALMONELLA, ENTEROCOLITIS. DIARRHEA, RAT (6247)
SALMONELLA, EPIDEMIOLOGY, TYPHOID FEVER, FOOD POISONING (6314)
SALMONELLA, EXCRETION, STRESS, PIG (5357)
SALMONELLA, FOOD POISONING (7706)
SALMONELLA, GASTROENTERITIS, EPIDEMIOLOGY (6249)
SALMONELLA, SALMONELLOSIS, TREATMENT (6174)
SALMONELLA, SEROTYPE (7719)
SALMONELLA, TYPHOID, PARATYPHOID, ANTIBIOTICS, ELECTROLYTES (5333)
SALMONELLA, TYPHOID, PARATYPHOID, EPIDEMIC, STOOL TESTS, ELIMINATION, GREEN SALAD (6159)
SALMONELLA PANAMA, DISEASE (7732)
SALMONELLA THOMPSON, EPIDEMIOLOGY (9245)
SALMONELLA TYPE, DIARRHEA, CHILDREN (1528)*
SALMONELLA TYPHINURIUM, INTESTINE, NON-NEOPLASTIC DISEASE (6969)
SALMONELLA VIRCHOW (7720), (7721)
SALMONELLAE, SHIGALLAE, DETECTION, HEALTHY CARRIERS (1798)
SALMONELLAE, MACROPHAGE INTERACTION (7209)
SALMONELLOSIS, INCIDENCE, ANTIBIOTICS (2008)
SALMONELLOSIS, INFANTS, CHILDREN (7710)
SCHISTOSOMA INTERCALATUM, TREATMENT, CAMEROON (2253)
SERRATIA MARCESCENS, PANCREAS, ABSCESS (1341)
SHIGELLA, SONNE DYSENTERY, EPIDEMIOLOGY, NEW ZEALAND (6274)
SMALL INTESTINE, FECES, MALABSORPTION (6184)
SMALL INTESTINE, PATHOPHYSIOLOGY, MAN (8466)
SMALL INTESTINE, SURGERY, GRAM-NEGATIVE (3733)
SYSTEMIC SALMONELLOSIS, FURAZOLIDONE, CHLORAMPHENICOL (3717)
TUBERCULOSIS, ESOPHAGUS, RADIOLOGY (6600)

- TUBERCULOUS ENTERITIS, COLON SURGERY (6987)
- TYPHOID FEVER, DIAGNOSIS, ETIOLOGY, TREATMENT, EPIDEMIOLOGY, SALMONELLA (6200)
- VIBRIO, STREPTOMYCIN-DEPENDENT, CHOLERA (3763)
- VIBRIO CHOLERAE, ANTITOXIC IMMUNITY, ILEUM (4632)
- VIBRIO CHOLERAE, ENTEROTOXIN, PURIFICATION, ASSAY (3999)
- VIBRIO CHOLERAE, EXO-ENTEROTOXIN, CHOLERAGEN, DIARRHEA (4004)
- VIBRIO CHOLERAE, EXOTOXIN, PURIFICATION (4007)
- VIBRIO CHOLERAE, PERMEABILITY FACTOR (3861)
- VIBRIO CHOLERAE, PERMEABILITY FACTOR, MEDIA (3998)
- VIBRIO CHOLERAE, TOXIN, PROPERTIES, PURIFICATION (3997)
- VIBRIO CHOLERAE, VASCULAR PERMEABILITY FACTOR (3996)
- VIRUS, GASTROENTERITIS, DIARRHEA, INFANTS, ANTIBIOTICS (1101)

BACTERIAL DISEASE
- SALMONELLOSIS, BACTRIM THERAPY, TYPHOID FEVER (9237)
- SALMONELLOSIS, DIAGNOSIS, CHICKEN (8769)
- SALMONELLOSIS, FOOD POISONING, HYGIENE (9236)
- SALMONELLOSIS, IMMUNOLOGY (6943)•
- SALMONELLOSIS, INTESTINE, IMMUNOLOGY (6944)•
- SALMONELLOSIS, PARATYPHOID FEVER, CARRIERS, SCHLESWIG-HOLSTEIN (9247)
- SALMONELLOSIS, SALMONELLA TYPHIMURIUM, ROUGH MUTANT (8422)•
- SHIGELLA SONNEI INFECTION, SULFONAMIDE THERAPY, ADULTS (9248)
- SHIGELLOSIS, CHILDREN, CONVULSIONS, COPROCULTURES, NEONATAL, SHIGELLA SONNEI, ANTIBIOTICS, MENINGITIS, SEPTICEMIA (5740)

BACTERIAL ENDOTOXEMIA
- RUNTING SYNDROME, GRAFT VS. HOST REACTION, LIVER, ELECTRON MICROSCOPY, MICE (1564)•

BACTERIOLOGY
- COLON, SURGERY, ANTIBIOTIC (2731)
- DIARRHEA, E.COLI, KLEBSIELLA (2227)
- MALAKOPLAKIA, APPENDIX (2732)
- SHIGELLOSIS, SALMONELLOSIS, RAETTIG'S VACCINE (4620)

BARBITURATE
- BARBITAL, ENZYME INDUCTION, LIVER (3049)
- CRIGLER-NAJJAR SYNDROME, THERAPY (3555)
- HEXOBARBITAL, HEPATIC METABOLISM, CORN OIL DIET (3192)
- NEONATAL JAUNDICE, PRE-ECLAMPTIC TOXEMIA, SYNERGISM (0540)

BELLADONNA THERAPY
- ACID-PEPTIC DISEASE, GASTRIC SECRETIONS, STOMACH (1137)

BENTONITE FLOCCULATION TEST
- AMEBIASIS, SEROLOGIC DIAGNOSIS (2267)

BENZIODARONE
- METABOLISM, BILIARY EXCRETION, SULFOBROMOPHTHALEIN (1765)

BERBERINE
- DIARRHEA, PEDIATRIC, GASTROENTERITIS (3743)

BETA RECEPTOR
- DRUG INTERACTIONS, ATRIUM, AORTA, STOMACH, TRACHEA, RABBIT (1796)

BICARBONATE
- CHLORIDE FLUXES, CO2, GASTRIC MUCOSA (2354)
- DUODENAL SECRETION, ASTRUP'S METHOD (4064)
- EXCRETION, ACIDOSIS, MALABSORPTION, PARATHORMONE (7430)•
- PANCREAS, OUTPUT, SECRETIN (7195)•
- PANCREATIC SECRETION (3925)
- SECRETION, NON-NA COMPONENT, COLONIC MUCOSA (2341)
- SECRETION, PANCREAS, DUODENUM (3289)
- SECRETION, TRYPSIN, PANCREOZYMIN, PANCREAS, MAN (0963)
- SMALL INTESTINE, SECRETION, TESTOSTERONE (3236)
- SODIUM, PANCREATIC SECRETION, BLOOD SUGAR (3924)

BIGUANIDE
- STEATOSIS, PLASMA, LIPIDS, LIPOPROTEIN (6800)

BILE
- ABNORMAL, CHOLESTEROL GALLSTONE, LIVER (7656)•
- ACETYLCHOLINE, REGULATOR MECHANISM (6416)
- ACID, CHOLESTEROL METABOLISM (5636)
- ACID, CIRCADIAN RHYTHYM, ENDOCRINE FACTOR, RIBOSOMAL PROTEIN, CHOLESTEROL-7-ALPHA-HYDROXYLASE (4853)
- ACID, CONCENTRATION, SERUM, INFECTIOUS HEPATITIS (5254)•
- ACID, EXCRETION, CONJUGATION, CONTAMINATION, EFFECT, RAT (5492)•
- ACID, KINETICS, MAN (7184)
- ACID, LIVER, JAUNDICE, HEPATIC COMA, HEMOLYTIC TOXINS (5256)
- ACID, LIVER, SMALL INTESTINE, CECUM, LITHOCHOLIC ACID, ANTIBIOTIC EFFECT (5587)•
- ACID, SALT, LIVER EXCRETION, PERFUSED LIVER (6362)
- ACUTE PANCREATITIS, PATHOGENESIS (8244)
- AMYLASE, CONCENTRATIONS, MAN (0144)
- ASCITES (2932)
- ATRESIA, OBSTRICTIVE JAUNDICE, CIRRHOSIS, CHOLESTYRAMINE (5218)
- BILE ACID, SULFOBROMOPHTHALEIN, FISTULA, HAMSTER (3936)•
- BILE ALCOHOL AND ANHYDRO DERIVATIVE, MASS-SPECTRUM, RESONANCE, CATOSTOMUS (3194)
- BILE DUCT, SURGICAL TECHNIQUE, JEJUNAL LOOP, HEPATICO-JEJUNO-DUODENOPLASTY (6020)
- BILE SALT, PHOSPHOLIPID, FATTY ACID, AVINE (3950)•
- BILIARY EXTERNAL FISTULA, SURGERY, RABBITS (0118)

BILIRUBIN, ABSORPTION, GALLBLADDER, DOG (3101)•
BILIRUBIN, BILIVERDIN, PHOTODECOMPOSITION (1724)•
BILIRUBIN, FETUS, SHEEP (6456)
BIOSYNTHESIS, TAUROCHOLIC ACID, GLYCOCHOLIC ACID, DESOXYCHOLIC ACID (7187)
BSP EXCRETION, PLASMA CLEARANCE, LIVER DISEASE (4523)
BSP EXCRETION, PROTEIN-FREE DIET, RAT (0821)•
CANALICULI, ACTIVE HETERO-ANTIBODY, CHRONIC HEPATITIS (2125)•
CHOLECYSTITIS, BENZOHEXONIUM (7671)
CHOLECYSTITIS, DIAGNOSIS, PROTEIN (2915)
CHOLEPHILIC DYES, CLINICAL CHEMISTRY (1747)
CHOLORRHEA, POST-ILEAL RESECTION, CHOLESTYRAMINE (4240)
CHROMATOGRAPHIC SEPARATION, GLUCURONIC ACID (2393)•
CIRRHOSIS, LYMPHOCYTE (6125)
COLLECTION TECHNIQUE, RAT (7182)
CONCENTRATION, SERUM, INFANCY (7567)
CONJUGATED ACID, GLYCOCHOLIC ACID, 7 ALPHA-DEHYDROXYLATION (6419)•
CONSTITUTENTS, BIOSYNTHESIS, CARP (0094)•
CORTICOSTERONE METABOLISM, SEX DIFFERENTIATION, RAT (4854)•
CULTURE, BACTERIA, CHOLIFORM, BILIARY DISEASE, CHOLECYTITIS, CHOLELITHIASIS, CHOLEDOCHOLITHIASIS (4525)•
DIET, CHOLESTEROL, GALLSTONE (5314)
DRAINAGE, INTERNAL, EXTERNAL, INDICATIONS, CHILD (4415)
DUCTAL, PROPERTIES, VAGOTOMY, CHOLECYSTECTOMY (0151)
DYSPEPSIA, GALLBLADDER (4621)
EFFUSION, ABDOMEN, TRANSHEPATIC CHOLANGIOGRAPHY (3306)
EXCRETION, ABSORPTION, CARDIOGLYCOSIDE (4779)•
EXCRETION, CONTRAST MEDIA, PLASMA PROTEIN BINDING (7826)•
EXCRETION, CURARE COMPOUNDS, LIPID SELUBILITY, PERFUSED LIVER, RAT (5485)•
EXCRETION, DISORDER, DUODENAL CATHETERIZATION (3673)
EXCRETION, FOREIGN COMPOUNDS, ENDOPLASMIC RETICULUM, DRUG EFFECTS (3165)•
EXCRETION, STEROID HORMONES, MAN (7837)
EXCRETION, SULFOBROMOPHTHALEIN, SHEEP (1771)
5 ALPHA-CHIMAEROL ISOLATION, CATOSTOMUS, MASS-SPECTRUM (3195)
FLOW, BILE ACID CONCENTRATION, BILOKINASE, SODIUM TAUROCHOLATE (2395)
FLOW, BODY TEMPERATURE, SKF-525-A, EXCRETION, INDOCYANINE GREEN (4860)•
FLOW, COMPOSITION, CHOLECYSTECTOMY (2907)•
FLOW, INTESTINAL PHASE, REGULATION (7883)•
FLOW, MOTILITY, STOMACH, DUODENUM (5526)
FLOW RATE, BARIUM, DICLOXACILLIN (5570)•
FLOW RATE, CHOLESTASIS, HEPATIC ULTRASTRUCTURE, CANALICULI (0820)•
GALLBLADDER, BSP-TEST (4089)
GALLBLADDER, COMMON BILE DUCT, ALKALINE PHOSPHATASE (9187)
GALLBLADDER, FISTULA, GALLSTONE (2922)
GALLBLADDER, VAGOTOMY, PYLOROPLASTY (3168)•
GLUTETHIONIDE, HUMAN, GALLBLADDER (5606)
HEMOBILIA, FALSE ANEURYSM, RIGHT HEPATIC ARTERY (9184)
HEMOBILIA, PANCREATIC PSEUDOCYST, HEMORRHAGE (7508)
HEMOBILIA, TUMOR, TRAUMA (5303)
HEMOBILIA, TUMOR, TRAUMA, ETIOLOGY (5303)
HYDROXY ACID, PRODUCTION, EXCRETION, GUINEA PIG, CHOLERETIC AGENT (2467)
HYMENOLEPIS MICROSTOMA, AMINO ACID (3023)
IMMUNOGLOBULIN, A, G, M, MONKEY (6939)•
INSULIN, REABSORPTION, INTESTINE, CAT (0033)•
LIPID, FATTY ACID, NUTRITIONAL FAT (3451)
LIPID CONTENT, MACROMOLECULAR ASSEMBLIES, BILE SALTS, CALCULOUS, ACALCULOUS, GALLSTOME (5436)•
LITHIASIS, BILE DUCT STENOSIS, DOG (3666)
LIVER, CHOLANGITIS, SCLEROSIS (5307)
LIVER, GALLBLADDER, GALLSTONES (7655)•
LIVER, HOMOTRANSPLANT, HOST (6826)
LIVER, LAENNEC'S, CIRRHOSIS (2130)•
LIVER FUNCTION, THYROID, HEPATIC BLOOD FLOW (6040)
METABOLISM, REGULATION, LIVER (7133)•
MICELLE UPTAKE, IMIPRAMINE, DESMETHYLIMIPRAMINE, METABOLISM (7944)
MUCOUS SUBSTANCES, HEXOSAMINE, INDUCED CHOLELITHIASIS, RABBITS (1457)•
OBSTRUCTIVE JAUNDICE, LAPAROSCOPY, DIAGNOSIS (2790)
PANCREATITIS, VASCULATURE (1325)
PEPTIC ULCER, SALIVA PROTECTION, GASTRIC JUICE, DUODENUM (5832)
PEPTIDES, CHROMATOGRAPHY (3185)
PERITONITIS (2081)
PERITONITIS, ETIOLOGY, CLINICAL ASPECTS (0681)
PIGMENT, HEPATIC SITE, HEPATITIS (4491)
PIGMENT, HEPATITIS, LIVER ULTRASTRUCTURE, DISSE-BILE CANALICULI (4476)•
PIGMENT, METABOLISM (7174)
PROTEIN, ELECTROPHORESIS, IMMUNODIFFUSION (0095)•
PROTEIN, GALLSTONES, ANTISERA (8396)•
REFLUX, GASTRITIS, MENTRIER'S DISEASE (3366)
RIBOFLAVIN EXCRETION, PHARMACOKINESIS (3122)

- SALT, ABSORPTION, SMALL INTESTINE, SULFAGUANIDINE (5477)•
- SALT, ADSORPTION, CHOLESTYRAMINE, TEMPERATURE, IN VITRO STUDIES (5486)•
- SECRETION, AMINES, TRANSPORT, RAT (0846)•
- SECRETION, BILE ACID, CHOLATE FORMATION (7120)
- SECRETION, CORTICOSTEROID (3221)
- SECRETION, LIVER, PITUITRIN (7163)
- SECRETION, PHOSPHOLIPIDS, BILE ACIDS, MAN (0102)•
- SECRETION, ROSE BENGAL, URANIN, BILE SALT-INDEPENDENT FRACTION (3957)
- SECRETION, VIRAL HEPATITIS, VEDRENAN, CHOLERETIC, CIRRHOSIS, MIGRAINE, LITHIASIS (5172)
- SPHINCTER OF ODDI, FLOW RESISTANCE, VAGOTOMY (6382)•
- STASIS, CHOLANGITIS, SCLEROSIS, ETIOLOGY, ASSOCIATED DISEASE (2921)
- STEROIDS, GLUCURONIDE, FISTULA, GALLBLADDER (5682)
- STOMACH, IMPLICATION (1879)
- STOMACH, POTENTIAL DIFFERENCE (3705)•
- STONES, GALLBLADDER, ULTRASONIC DETECTION (4893)•
- STORAGE, TRANSPORT, LIVER (4039)
- SUSPENSION, GALLSTONE (8395)•
- UNCONJUGATED SALTS, SMALL INTESTINAL MUCOSA, MORPHOLOGICAL CHANGE (7025)•
- VISCOSITY, GALLBLADDER CONTRACTION, FLOATING BILE STONES (9189)
- VITAMIN D METABOLITES, SEPARATION, IDENTIFICATION, RAT (1720)•

ILE ACID

- ABNORMAL METABOLISM, CIRRHOSIS (8381)
- ABSORPTION, CECUM, RAT (0765)•
- CHOLERETIC AGENTS, BILE SALT, SECRETION (2911)
- CHOLESTEROL, NEOMYCIN, COLCHICINE (8374)•
- CHOLESTYRAMINE, CHOLELITHIASIS, HAMSTER, MAN (1770)
- COMPOSITION, ESTRADIOL, CHOLESTEROL, THYROXINE (8632)•
- CONJUGATION, 7 ALPHA-DEHYDROXYLATION, GLYCOCHOLIC ACID (6419)•
- EFFECT, BILE SECRETION, CHOLATE FORMATION (7120)
- GLYCOCHOLIC ACID, METABOLISM, GASTRECTOMY (6608)•
- INTESTINAL BACTERIA, ENZYME (3945)•
- LIPID, FECAL EXCRETION, CHOLERESIS (8307)
- METABOLISM, DISORDER (4386)
- METABOLISM, SMALL INTESTINE SURGERY, SMALL INTESTINE MICROORGANISMS (2191)•
- PHOSPHOLIPID SECRETION, BILE, MAN (0102)•
- SPECTROPHOTOMETRY, BOTKIN'S DISEASE, CHOLECYSTITIS, HEPATITIS (2461)
- SYNTHESIS, LIVER, CHRONIC BILIARY DRAINAGE (7153)•

BILE DUCT

- ACTIVITY, CHOLEDOCHODUODENAL SPHINCTER, DRUG EFFECTS, TERBUTALINE, ISOPRENALINE (5513)•
- APT, ATRESIA, ANASTOMOSIS, JAUNDICE (5327)
- ASCARIASIS, PANCREATITIS, DIAGNOSIS, TREATMENT (8495)
- ATRESIA, CONGENITAL (4559)
- ATRESIA, CONGENITAL, STATISTICS (4560)
- ATRESIA, NEWBORN, SURGERY, CIRCULATION (2956)
- ATRESIA, SURGERY, LIVER (4540)
- AUTOLOGOUS, VENOUS PROSTHESIS, VENOUS DUODENAL ANASTOMOSIS, DOG (8403)
- BILIARY-JEJUNAL BYPASS, SURGICAL TECHNIQUE, JEJUNUM (5300)•
- BILIOJEJUNAL SHUNT, INDICATIONS, TECHNIQUE (1385)
- CANCER, ULCERATIVE COLITIS (5315)
- CARCINOMA, ANGIOGRAPHY, THORIUM DIOXIDE (2181)
- CARCINOMA, THOROTRAST (4398)
- CHOLANGIOGRAPHY, OPERATION (1366)
- CHOLANGIOGRAPHY, POSTOPERATIVE, INDICATIONS (0216)
- CHOLANGIOGRAPHY, SURGERY, SPHINCTER OF ODDI (2168)
- CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, GALLBLADDER (7215)•
- CHOLECYSTOCHOLANGIOGRAPHY, DRIP INFUSION (0220)
- CHOLEDOCHODUODENOSTOMY, SHPINCTEROTOMY, PAPILLOSTENOSIS (0375)
- CHOLEDOCHOLITHIASIS, PERFORATION, MECHANICAL JAUNDICE (0682)
- CHOLESTASIS, GALLBLADDER, LIVER (4420)
- CHOLESTASIS, PATHOPHYSIOLOGY (3694)
- CHOLESTASIS, PHOSPHOLIPID, LIPOPROTEIN, ANTIGEN, ALBUMIN (5310)
- CHOLESTASIS, RECURRENT, INTRAHEPATIC, JAUNDICE, MITOCHONDRIAL FLUORESCENCE (5195)
- CICATRICIAL STENOSIS, SURGERY, COMPLICATIONS (8409)
- COMMON, AVULSION, TRAUMA, ABDOMEN, CHILD (4581)
- COMMON, CALCULUS, ROUNDWORM (4665)
- COMMON, CANDIDIASIS, ANTIBIOTIC (2919)
- COMMON, CHOLECYSTECTOMY, CHOLECYSTITIS, STENOSIS, ANASTOMOSIS (2920)
- COMMON, CHOLEDOCHOSTOMY, T-TUBE, MAN (1503)•
- COMMON, DIAPHRAGM, CONGENITAL, SURGERY (2182)
- COMMON, DRAINAGE, ABSENT GALLBLADDER (4553)
- COMMON, DRAINAGE, GALLBLADDER REMOVAL, CYSTIC DUCT (6140)
- COMMON, DRAINAGE, LIVER INJURIES, CAT (0485)
- COMMON, EPITHELIUM, ELECTRON MICROSCOPE (4752)
- COMMON, FISTULA, RIGHT RENAL PELVIS, RADIOLOGICAL DEMONSTRATION (3693)
- COMMON, HYPOPLASIA, ANOMALY, CHOLEDOCHAL CYST (4551)
- COMMON, LIGATION, ANTIBIOTICS, ABSORPTION, METABOLISM (0452)

COMMON, LITHIASIS, SURGERY (6152)
COMMON, LIVER BIOPSY PUNCTURE, HEMATEMESIS, DUODENUM, ATELECTASIS (2518)
COMMON, OBSTRUCTION, INOPERABLE, TRANSHEPATIC INTUBATION (0659)
COMMON, OCCLUSION, GASTRIC TUMOR, JAUNDICE (5796)
COMMON, PRIMARY STONE, HYPOGENETIC GALLBLADDER (3690)
COMMON, SCLEROSIS, INFLAMMATION, SCLEROSING CHOLANGITIS (2921)
COMMON, SEVERANCE, BLUNT TRAUMA (4552)
COMMON, SYMPATHETIC BLOCK, CHOLEDOCHODUODENAL PASSAGE (6149)
COMMON, TRANSECTION, BLUNT TRAUMA, CHOLEDOCHODUODENOSTOMY (6133)
COMMON, ULTRASTRUCTURE, EPITHELIUM, RODENT (0006)•
CONCREMENT, LIVER, RUTIN, INFLAMMATION, SIDE EFFECT (5228)
CONGENITAL ATRESIA, SURGERY, PROGNOSIS (0668)
CONGENITAL MALFORMATION, CHRONIC JAUNDICE, HEPATOMEGALY, PORTAL HYPERTENSION, BILIARY CIRRHOSIS, HYPERPLASIA, PAIN (6131)
CONGENITAL MALFORMATION, ICTERUS (6033)
CONTROLLED DRAINAGE, EXTERNAL (0683)
CORRECTIVE BILIARY SURGERY, ACUTE PANCREATITIS, BILIARY DISEASE (1340)
CYST, DILATATION, INTRAHEPATIC DUCT (6136)
CYST, DUODENUM, STONE (5318)
DIGESTIVE TRACT ANASTOMOSES (4638)
DILATION, GALLBLADDER (4545)
DILATATION, PSEUDOCYST, PATHOGENESIS (9191)
DISEASES, EVALUATION, DIAGNOSIS, TREATMENT (0669)
DRAINAGE, LIPID METABOLISM, FIBRINOLYSIS, CHOLECYSTECTOMY (0578)
DUODENUM, CHOLEDOCHO-DIGESTIVE ANASTOMOSIS, COMPLICATIONS (0666)
DUODENUM, SPHINCTER OF ODDI, CHOLANGIOGRAPHY, MOTOR ACTIVITY, PANCREATITIS (2914)
EFFERENT DISEASE, DIAGNOSIS, AMINO ACID ARYLAMIDASE, ISOENZYMES (0182)•
ENDOSCOPY, GALLSTONES, HEPATOMA (6519)•
EPITHELIUM, ABNORMAL, CLINICAL HEPATITIS (3601)
EXPLORATION, CONVENTIONAL INDICATION, RELIABILITY (3298)
EXTRAHEPATIC, CARCINOMA, HISTOLOGY, SURVIVAL, SURGERY (1495)
EXTRAHEPATIC, CARCINOMA, RADIOLOGY (6138)
EXTRAHEPATIC, INCIDENCE, LOCATION (5474)
EXTRAHEPATIC, INNERVATION, NEUROMORPHOLOGY (0901)
EXTRAHEPATIC, NONSURGICAL TRAUMA, MANAGEMENT (0655)
EXTRAHEPATIC BILE DUCT, GALLBLADDER, ADENOMA (6914)
EXTRAHEPATIC-INTRAHEPATIC, BILE DUCT OBSTRUCTION (7231)
FASCIOLIASIS, HUMAN, IRAN (4668)
FIBRO-ANGIO-ADENOMATOSIS, FAMILIAL, CHRONIC ICTERUS (2183)
GALLBLADDER, BIOPSY, JAUNDICE (6575)
GALLBLADDER, POLYARTERITIS NODOSA (6915)
GILBERT'S DISEASE, HYPERBILIRUBINEMIA, PATHOGENESIS (2832)
HEPATIC, CALCULI, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)
HEPATIC, OCCLUSION, OBSTRUCTIVE JAUNDICE, OLD AGE (2172)
HEPATIC, VESICAL, DUODENAL CATHETERIZATION (3673)
IMPROVED DIAGNOSIS, CHOLECYSTOCHOLANGIOGRAPHY, CHRONIC LIVER DISEASE (0184)
INFECTION, TETRACYCLINE, THERAPY, EXCRETION (6922)
INTRAHEPATIC, ANEURYSMAL DILATION, SURGERY, CHILDREN (6808)
INTRAHEPATIC, BENIGN, CHOLANGIOMA, HAMARTOMA (6798)
INTRAHEPATIC, CONGENITAL ATRESIA, OBSTRUCTION (2062)
INTRAHEPATIC, FINE STRUCTURE, PRIMARY BILIARY CIRRHOSIS (0652)
INTRAHEPATIC, GIANT-CELL TRANSFORMATION, FAMILIAL INCIDENCE (0576)
INTRAHEPATIC, ICTERIC HEPATITIS (0601)
INTRAHEPATIC, PRIMARY STENOSIS, CHOLANGIOGRAPHY, ETIOLOGY (9176)
INTRAHEPATIC, UNDILATED, CHOLANGIOGRAPHY (3306)
INTRAHEPATIC CHOLEDOCHUS CYST, TREATMENT (0545)
LESIONS, PHLEGMONS (4537)
LIGATION, RAT, CHOLESTASIS, MICROSOMAL BIOTRANSFORMATION, LIVER (2908)•
LITHIASIS, POSTOPERATIVE (0672)
LIVER, ASCARIASIS, SURGERY (7769)
LIVER, DIGESTIVE TRACT, CHOLELITHIASIS, MIGRAINE, DYSKINESIA (5343)
LIVER, GROSS ANATOMY, DOG (3075)
LIVER, PORTAL FISSURE, SURGERY (4532)
MALIGNANT TUMORS, IDENTIFICATION (0563)
OBSTRUCTION, ALKALINE PHOSPHATASE, INDUCTION, LIVER, SERUM, RAT (3661)•
OBSTRUCTION, ASCARIS LUMBRICOIDES (1559)
OBSTRUCTION, COPPER DISTRIBUTION, SUBCELLULAR, LIVER, RAT (2277)•
OBSTRUCTION, DECOMPRESSION, SURGICAL (2934)
OBSTRUCTION, ESTRADIOL METABOLISM, STEROID (6130)
OBSTRUCTION, HETEROTOPIC PANCREAS, DUODENAL WALL (9178)
OBSTRUCTION, LIVER ALLOTRANSPLANTATION (3187)
OBSTRUCTION, RADIOLOGY, MANOMETRY (5708)
OBSTRUCTIVE JAUNDICE, LITHIASIS, ULCER, DYSPEPSIA (6547)
OCCLUSION, AMYLASE CONCENTRATION,

  - LIPASE CONCENTRATION, SMALL INTESTINE (2943)•
  - ODDI'S SPHINCTER, MORPHINE, RESIDUAL PRESSURE (6927)
  - PAPILLA DUODENI MAJOR, SURGERY (3386)
  - PERFORATION, NEONATE, SURGERY, CHOLANGIOGRAPHY (6148)
  - PRIMARY SCLEROSING, CHOLANGITIS (4556)
  - PYLORIC ANTRUM, ULCER, ECTOPIC JUNCTION (6667)
  - RADIOGRAPHY, TRANSPARENT VALVES (4074)
  - RADIOLOGY, CHOLANGIOCHOLECYSTOGRAPHY (4917)
  - RADIOLOGY, CHOLANGITIS, CARCINOMA (4526)•
  - RADIOLOGY, ORAL, INTRAVENOUS, SURGICAL, CHOLECYSTOGRAPHY, CHOLANGIOGRAPHY (4906)
  - RESIDUAL LITHIASIS, RELAPSE (4536)
  - RETROGRADE FILLING, CHOLANGIOGRAPHY, CATHETER, ANASTOMOSIS, DUODENUM (5676)
  - SPASM, MOTILITY (5570)•
  - SPHINCTER OF ODDI, SPHINCTEROTOMY (0665)
  - SPONTANEOUS PERFORATION, INFANT (3677)
  - STASIS, LIVER TUMOR, METASTASES, ECHINOCOCCOSIS (5407)
  - STONE, CHOLANGIOGRAPHY (5690)
  - STONES, PAPILLARY STENOSIS, CHOLECYSTECTOMY, EMPYEMA (6912)
  - STONE REMOVAL, EXTRAPERITONEAL PROCEDURE (8418)
  - STRICTURE, POSTOPERATIVE (4548)
  - SURGERY, DUODENUM, HEMATOMA, GALLBLADDER (5813)
  - SURGERY, ELDERLY (0677), (0678), (0679)
  - SURGERY, HEPATICO-JEJUNO-DUODENOPLASTY, TECHNIQUE, JEJUNAL LOOP (6020)
  - SURGERY, PAPILLOTOMY, TRANSDUODENAL SPHINCTEROTOMY (1956)
  - SURGICAL APPROACH, DUODENUM (1498)
  - TRACHEAL ALLOGRAFT (6917)
  - TUMOR, CYSTIC (0670)
  - WIRSUNG'S, AMPULLA OF VATER, DISEASE, DIAGNOSIS (0218)

- LE PIGMENT
  - BILIRUBIN, BILIRUBIN-GLUCRONIDE (2184)
  - UROBILIN, UROBILINOGEN, STERCOBILIN, CLOSTRIDRIA (8699)
- LE SALT
  - ABSORPTION, MICELLE, JEJUNUM (2338)•
  - BILE, LIVER CIRCULATION, SYNTHESIS, REABSORPTION, SMALL INTESTINE (2404)•
  - BILE ALCOHOL AND ANHYDRO DERIVATIVE, MASS-SPECTRUM, RESONANCE, CATOSTOMUS (3194)
  - BILE SECRETION, ROSE BENGAL, URANIN, INDEPENDENT FRACTION, HEPATOCYTES (3957)
  - CHOLERETIC AGENTS, BILE ACID, SECRETION (2911)
  - CHOLESTEROL, METABOLISM, LECITHIN (1698)•
  - DECONJUGATION, BACTERIA, INTESTINE, ENZYME (3944)•
  - DEOXYCHOLATE, REABSORPTION, DUODENUM, TERMINAL ILEITIS (3418)•
  - ENTEROHEPATIC CIRCULATION, INTESTINAL ABSORPTION, BILE ACID, BIOSYNTHESIS (8570)
  - FASTING, COMPOSITION, ILEUM, RESECTION (1153)•
  - 5 ALPHA-CHIMAEROL, ISOLATION FROM CATOSTOMUS, MASS SPECTRUM (3195)
  - INTESTINAL ABSORPTION, PYRIDOXINE ESTERS (2327)•
  - INTESTINE, CONJUGATION, FLORA, MONOSACCHARIDE ABSORPTION (0418)
  - JEJUNUM, TRANSPORT, INHIBITION, 3-O-METHYL GLUCOSE, RAT (3169)•
  - METABOLISM, INTESTINAL LIPID ABSORPTION, BLIND LOOP SYNDROME (8562)
  - PRODUCTION, EFFECT ON BILE FLOW, SULFOBROMOPHTHALEIN (2411)•
  - SECRETION, CIRRHOSIS, CHOLECYSTECTOMY, PANCREOZYMIN, CHOLECYSTOKININ, SECRETIN (4506)•
  - SODIUM TAURODEOXYCHOLATE, JEJUNUM, PERMEABILITY CHANGES, RAT (1634)•
- BILHARZIASIS
  - BILE PIGMENT, SCHISTOSOMIASIS (2244)
  - CONTRACEPTIVE PILLS, LIVER FUNCTION (0534)•
  - DIAGNOSIS, IMMUNOFLUORESCENCE (0231)
  - EPIDEMIOLOGY, PARASITE, METEORISM, HEMATURIA (7008)
  - IMMUNOFLUORESCENT DIAGNOSIS, PARASITOLOGY (4075)
  - INTESTINE, DETECTION, CHILDREN (9279)
  - PARASITE, SCHISTOMIASIS TARTAR EMETIC THERAPY (2255)
  - PARASITOLOGY, SCHISTOSOMA, AFRICANS (4684)
  - PHYSIOPATHOLOGY (3021)
  - SEROLOGIC DIAGNOSIS, IMMUNOFLUORESCENCE (4059)
  - SKIN CHEMICALS, CERCARIAE, PENETRATION (1547)
  - WOODY REGIONS, EPIDEMIOLOGY (9278)
- BILIARY TRACT
  - ACUTE EMPHYSEMATOUS CHOLECYSTITIS, SURGERY, PENCILLIN (7663)
  - AMPULLA OF VATER, CARCINOMA (2178)
  - ATRESIA, CONGENITAL (2930)
  - ATRESIA, SURGERY (4543)
  - BACTERIA, DIAGNOSIS, TREATMENT (2176)
  - BACTERIA, EPIDEMIC HEPATITIS, ANTIBIOTIC (2873)
  - BACTERIAL INFECTION, METAMPICILLINE, JAUNDICE, LITHIASIS, AMPICILLINE, ELIMINATION (5323)
  - BILE, CANALICULUS, RAT, DISSE'S SPACES, PERMEABILITY (0750)•
  - BILE DUCT, CANCER, SURGERY (7510)
  - BILE DUCT, CARCINOMA, ANGIOGRAPHY, THORIUM DIOXIDE (2181)
  - BILE DUCT, CONTROLLED EXTERNAL DRAINAGE (0683)
  - BILE DUCT, DISEASES, DIAGNOSIS (0669)
  - BILE DUCT, DUODEDUM, CHOLEDOCO-DIGESTIVE ANASTOMOSIS, COMPLICATIONS (0666)
  - BILE DUCT, LITHIASIS, POSTOPERATIVE (0672)

BILE DUCT, TUMOR, CYSTIC (0670)
BILE DUCT OBSTRUCTION, CHOLECYSTECTOMY, ELECTROLYTES (1496)
BILIFUGE ''PLAN'', CLINICAL IMPROVEMENT, HEPATIC DISEASE, PROPHYLAXIS (6005)
CAERULIN, RADIOLOGY (3124)*
CALCULI, FILLING DEFECT, DUODENUM (3692)
CALCULI, SURGERY (3688)
CALCULUS, ROUNDWORM (4665)
CANCER, INCIDENCE, SYMPTOMATOLOGY (2777)
CANDIDIASIS, ANTIBIOTIC (2919)
CARDIAC UPPER ABDOMEN SYNDROME, LIVER, STOMACH, PANCREAS (6198)
CHOLANGIOGRAPHY, CHOLECYSTOGRAPHY, INFUSION (1824)
CHOLANGIOGRAPHY, DIAGNOSIS, LIVER ABSCESS (2530)
CHOLANGIOGRAPHY, ERROR (5697)
CHOLANGIOGRAPHY, MAN (0945)*
CHOLANGIOGRAPHY, SURGERY, DIAGNOSTIC ERROR (0965)
CHOLANGITIS, ACUTE SUPPURATIVE, AMPULLARY FIBROSIS (9172)
CHOLANGITIS, IDIOPATHIC, TETRACYCLONE THERAPY (2927)
CHOLANGITIS, SCLEROSING, STEROID (8401)
CHOLECYSTITIS, PHYSIOPATHOLOGY (4260)
CHOLECYSTOCHOLANGIOGRAPHY (7286)
CHOLECYSTOCHOLANGIOGRAPHY, ANGIOGRAPHY (0221)
CHOLEDOCHAL CYST, HEPATOSCINTOGRAPHY (7292)
CHOLEDOCHODUODENOSTOMY (6143), (7667)
CHOLEDOCHOLITHIASIS, HEPATORENAL INSUFFICIENCY, OBSTRUCTIVE JAUNDICE (7658)
CHOLEDOCHOTOMY, TRANSDUODENAL ROUTE (6913)
CHOLELITHIASIS, INCIDENCE, SURGERY, FACILITIES (2165)
CHOLELITHIASIS, MYATONIA DYSTROPHICA, CONGENITAL (1481)
CHOLESTASIS, ACUTE VIRAL HEPATITIS, JAUNDICE, DIAGNOSIS (6097)
CHOLESTASIS, ESTROGEN INDUCTION, PREGNANCY (6783)
CHOLESTASIS, GOLD TREATMENT, ALLERGY, RHEUMATOID ARTHRITIS, MUCOSA, REVERSIBLE CHANGES, AURO-DETOXIN (5194)
CHOLESTASIS, INTRAHEPATIC, RECURRENT, IDIOPATHIC, JAUNDICE, PRURITIS (6016)
CHOLESTASIS, JAUNDICE, PRURITIS, XANTHOMA, PHOSPHATASE ACTIVITY, LAPAROSCOPY, RADIOGRAPHY (6118)
CHOLESTASIS, JAUNDICE, SURGERY, HEPATITIS (5179)
CHOLESTASIS, LIPOPROTEIN, PHOSPHOLIPID, ANTISERUM, ANTIGEN, ALBUMIN (5310)
CHOLESTASIS, RECURRENT, INTRAHEPATIC, JAUNDICE (5195)
CHOLIANGIOGRAPHY, OPERATIVE INTERPRETATION (0673)
CIRRHOSIS, CHRONIC CHOLESTASIS, NUTRITION (6120)
CIRRHOSIS, PARAGONIMIASIS, JAUNDICE (3659)
COMMON BILE DUCT, CHOLEDOCHOSTOMY, T-TUBE, MAN (1503)*
COMMON BILE DUCT, REPLACEMENT, SILICONE RUBBER (9171)
COMMON DUCT, NONOBSTRUCTIVE DILATATION, STONES (9185)
COMPRESSION, TUBERCULAR GANGLION, LIVER (4407)
CONGENITAL BILIARY DUCT ATRESIA, INTESTINAL EXCRETION OF BILE, PIGMENTS, CHILDREN (2171)
CYSTS, DIAGNOSIS, SURGICAL TREATMENT (2177)
CYSTS, SURGERY (4549)
DIAGNOSIS, ENZYMOLOGY, LIVER (7247)
DIAGNOSIS OF DAMAGE, PERCUTANEOUS TRANSHEPATIC CHOLIANGIOGRAPHY (1816)
DISEASE, BILE, CULTURE, CHOLIFORM BACTERIA, CHOLECYSTITIS, CHOLEDOCHOLITHIASIS, CHOLELITHIASIS (4525)*
DISEASE, CHRONIC PANCREATITIS, ALCOHOLISM (9016)
DISEASE, DIAGNOSIS, CHOLANGIOGRAPHY (8746)
DISEASE, DIAGNOSIS, SURGERY, LIVER (4393)
DISEASE, INFUSION CHOLECYSTOCHOLANGIOGRAPHY, IMPROVED VISUALIZATION (0180)*
DISEASE, SGPT, SGOT (0663)
DISEASE, TEST, VITAMIN A ABSORPTION (3267)*
DISEASE, TREATMENT, PHLORO-GLUCINOL-TRIMETHYLESTER (1656)
DISTENTION, BLOOD FLOW, AORTA (7665)
EXTRAHEPATIC, SURGICAL ANATOMY (3847)
EXTRAHEPATIC OBSTRUCTION, THORACIC DUCT LYMPH COMPOSTION, ENZYMES, PROTEINS, ELECTROLYTES (2164)*
EXTRAHEPATIC PATHWAYS, METAMPICILLIN, CHOLECYSTECTOMY (4535)
FISTULA, SPONTANEOUS, EXTERNAL, CHOLELITHIASIS (1482)
FISTULA, X-RAY, DIAGNOSIS (5706)
GALLBLADDER, CALCULOSIS, ENZYME, LIVER DAMAGE (2163)*
GALLBLADDER, CANCER (0664)
GALLBLADDER, CARCINOMA (1500)
GALLBLADDER, CHOLANGIOGRAPHY, TRANSHEPATIC (2180)
GALLBLADDER, CHOLECYSTITIS, TREATMENT (2926)
GALLBLADDER, CHOLECYSTOGRAPHY (1822)
GALLBLADDER, CHOLELITHIASIS, CHOLECYSTIS, PREGNANCY, SURGERY (2931)
GALLBLADDER, CHOLELITHIASIS, MUCUS MEMBRANE CHANGES (2175)
GALLBLADDER, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)*
GALLBLADDER, DISEASE (0667)
GALLBLADDER, EXCRETION, CHOLECYSTOKININ, MOTOR CONTROL (0175)
GALLBLADDER, FUNCTION, VAGOTOMY (2166)
GALLBLADDER, PYELOGRAPHY (1820)

GALLBLADDER, RADIOLOGY, CHOLANGIOGRAPHY (1819)
GALLBLADDER, RENOGRAPHIC, CONTRAST MEDIA (0964)
GALLSTONE, FATTY ACID-CALCIUM, HISTOCHEMISTRY (8398)*
HEMOBILIA, FALSE ANEURYSM, HEPATIC ARTERY (9184)
EMOBILIA, LIVER, NECROSIS (1399)
EPATIC DISEASE, INTESTINE, PHOSPHATASE (3675)
EPATOBILIARY DISEASE, SERUM PROTEOLYTIC ACTIVITY, ALPHA2-MACROGLOBULIN (7551)
EPATOBILIARY INSUFFICIENCY, CHOLERETIC AGENT, PHENOLPHTHALEIN, BELLADONNA EXTRACT (0663)
EPATOBILIARY PATHOLOGY, DIGESTIVE PATHOLOGY, STEA 16 (2847)
YDATIDOSIS, LIVER, SURGERY (5400)
YPERTENSION, HEPATIC INSUFFICIENCY, CIRRHOSIS, TUMOR, TREATMENT (6011)
NFLAMMATION, PANCREAS, LYMPHATIC SYSTEM, COMMUNICATION (2796)*
NTESTINAL FISTULA (7660)
NTRAHEPATIC, DILATATION, BILIARY, FIBROADENOMATOSIS (1486)
NTRAVENOUS CHOLANGIOGRAPHY (3295)
ITHIASIS, CHOLECYSTECTOMY, SUTURE, SURGERY (6137)
IVER, ACETYL COENZYME A, RAT (0864)
IVER, BLOOD FLOW, VASOPRESSIN, GALACTOSE UPTAKE, MAN (0863)
IVER, BROWN-PEARCE, CARCINOMA, RAT (1354)*
IVER, CARCINOGENS, RAT (0856)*
IVER, CARCINOGENESIS, RNA, RAT (0855)*
IVER, CARCINOMA, REGENERATION, MITOSIS, MICE (1354)*
IVER, CHLOROQUINE, LYSOSOMES, CAT (0844)*
IVER, ENZYMES, IRON DEFICIENCY, RAT (0834)*
IVER, FATTY ACIDS, BIOCHEMISTRY, RAT (0843)*
IVER, HORMONES, MITOCHONDRIA, CO 2 FIXATION, RAT (0862)
IVER, ISONIAZIDE (1944)
IVER, METABOLISM, DISULFIRAM, RAT (0860)
VER, MITOCHONDRIA, ALCOHOL, ALDEHYDES, OXIDATION, ENZYMES (0932)
VER, PHOSPHOLIPIDS, TRIGLYCERIDES, SYNTHESIS, MAN (0847)*
XASE, COLON, PANCREATITIS (5356)
DIFICATION, RE-OPERATION, GASTRECTOMY, NUTRITIONAL SYNDROME (1867)
STRUCTION, BILE DUCT, DECOMPRESSION, SURGICAL (2934)
STRUCTION, CHOLEDOCHOENTEROSTOMY, TRANSDUODENAL SPHINCTEROTOMY (7668)
STRUCTION, CHOLESTASIS, CYTOMEGALIC INCLUSION, NEONATE, HEPATITIS, JAUNDICE, HYPERLIPEMIA (5190)
STRUCTION, DUODENUM, DIVERTICULUM (5317)
STRUCTION, HEPATIC VASCULATURE (1348)*
OBSTRUCTION, JAUNDICE, LIVER HISTOLOGY (7652)*
OBSTRUCTION, PORTAL CIRCULATION, DOG (7675)
OBSTRUCTION, SGOT, LACTATE DEHYDROGENASE (8397)*
OBSTRUCTION, STONES, CHOLEDOCHALCYST, STRICTURE (6150)
OBSTRUCTIVE CIRRHOSIS, CASE REPORT (8372)*
OCCLUSION, OBSTRUCTIVE JAUNDICE, LAPAROSCOPY, DIAGNOSIS (2521)
PAIN, HYPERPLASTIC STATE, GALLBLADDER MUCOSA (3680)
PANCREATIC CYST, RADIOLOGY, GASTROINTESTINAL TRACT, JAUNDICE, SURGERY, DRAINAGE (5140)
PANCREATITIS, PERFORATION, PERITONITIS, NECROSIS (5149)
PATHWAYS, NEW PEPTIDE (4534)
PERCUTANEOUS CHOLANGIOGRAPHY, JAUNDICE, LIVER DECOMPRESSION (0957)
PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CARCINOMA, CHOLELITHIASIS (6554)
PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CONTRAST MEDIA (6556)
PERFORATION, PERITONITIS, OPISTHORCHOSIS (6250)
PHOSPHOLIPID SYNTHESIS, GALLSTONE, SECRETION (6129)
PHYSIOLOGY, DISEASE, RECENT ADVANCES (2245)
PRIMARY MALIGNANT TUMOR, OBSTRUCTIVE JAUNDICE, DIAGNOSIS (9179)
RADIOLOGY, DIAGNOSIS, PATHOLOGY (1806)*
RADIOLOGY, IODINIZED OPAQUE SUBSTANCES, ACCIDENT PREVENTION (3273)
RECURRENT CHOLESTASIS, CHOLESTYRAMINE, PREGNANCY (7553)
ROENTGENOLOGICAL DIAGNOSIS (1813)
SCLERODERMA, LIVER (6010)
SECRETION, ANTIHYPERTENSION AGENT, RAT (2491)
SINGLE AND MULTIPLE RE-INTERVENTIONS, OUTCOME (2459)
SPASTICITY, KETOSCILIUM (7749)
SPHINCTER OF ODDI, STENOSIS (2935)
SURGERY, ACUTE RENAL FAILURE, JAUNDICE (7657)
SURGERY, BIOLOGICAL GLUE (5312)
SURGERY, CHOLECYSTECTOMY, CHOLEDOCHOTOMY, PAPILLOTOMY, CHOLEDOCHODUODENOSTOMY (2941)
SURGERY, CHOLEDOCHODUODENOSTOMY, TRANSDUODENAL PAPILLOTOMY, BILE REFLUX (2906)*
SURGERY, CHOLELITHIASIS, BILE DUCT CANCER, SOUTH VIETNAM (8413)
SURGERY, GALLBLADDER, LIVER (5308)
SURGERY, GASTRIC DECOMPRESSION (6646)
SURGERY, LIVER, VAGOTOMY (0671)
SURGERY, MORTALITY RATE, PANCREATIC INVOLVEMENT (9181)
SURGERY, OPERATIVE RADIOMANOMETRICAL FLUX MEASUREMENT, OPERATIVE CHOLANGIOGRAPHY (8752)

  - SURGERY, TELECHOLANGIOSCOPY, MANOMETRY, RADIOLOGY (0937)•
  - TERMINAL BILE DUCT, JAUNDICE, SIBLINGS (7554)
  - YEASTS, CANDIDA ALBICANS, LAMBLIASIS (6919)
- BILIARY TREE
  - RADIOLOGY (2503)•
- BILIRUBIN
  - ABSORPTION, GALLBLADDER, SURGICAL TECHNIQUE, DOG (3101)•
  - ALBUMIN, BINDING (6770)•
  - BLOOD, HYPODYSTROPHIC NEWBORN (4389)
  - BLOOD, PHENOBARBITAL ACTION, NEONATE (4401)
  - BLOOD LEVEL, COMMENCEMENT OF FEEDING, PREMATURE INFANT (3213)
  - CARBON MONOXIDE, HEME CATABOLISM, RAT (4825)•
  - CHOLERESIS, CHOLERETICS, SODIUM DEHYDROCHOLATE (6429)•
  - CHOLESTASIS, CONJUGATED, UNCONJUGATED, KUPFFER CELLS (7532)•
  - CHOLESTASIS, PLASMA LIPID, LIVER (4472)
  - CIRRHOSIS, ALBUMIN, ASCITES, PROGNOSIS (6899)
  - CONJUGATION, ESTROGEN, BREAST-MILK JAUNDICE (6772)•
  - CONJUGATION, LIVER, HUMAN, RAT (4844)•
  - CONTRAST MEDIA, LIVER FUNCTION, CHOLESTEROL, ALKALINE PHOSPHATASE (2465)
  - DISTRIBUTION, TOXICITY, ALBUMIN (7072)
  - EARLY FEEDING, FLUIDS, WEIGHT, PREMATURE INFANTS (1762)
  - FECAL EXCRETION, UROBILINOGEN, BILIRUBIN (7063)•
  - FETUS, SHEEP (6456)
  - FRACTIONS, CHRONIC HEPATITIS, ACUTE HEPATITIS, LIVER CIRRHOSIS (7627)
  - GLUCURONIC ACID, LIVER DAMAGE, BILE DAMAGE (1744)
  - GLUCURONIDE, BILE (2184)
  - GLUCURONYL TRANSFERASE, LIVER, ETHANOL, PARTIAL HEPATECTOMY, RAT (8650)
  - HEPATITIS, METABOLISM (4490)
  - HIGH BLOOD LEVEL, POST-HEPATIC, PATHOGENESIS (3670)
  - HUMAN BILE, CHROMATOGRAPHIC ANALYSIS (2393)•
  - HYPERBILIRUBIN, NUCLEAR ICTERUS (2846)
  - HYPERBILIRUBINEMIA, ALBUMIN, FREE FATTY ACIDS (7889)•
  - HYPERBILIRUBINEMIA, CONGENITAL, LIVER, GILBERT'S SYNDROME (5205)
  - HYPERBILIRUBINEMIA, ETHANOL, PREVENTION, INFANT (1355)•
  - HYPERBILIRUBINEMIA, NEONATAL JAUNDICE, PHENOBARBITAL (6220)
  - HYPERBILIRUBINEMIA, NEONATE, LUMINAL TREATMENT (5220)
  - HYPERBILIRUBINEMIA, PHENOBARBITAL, ENZYME INDUCTION (8679)
  - HYPERBILIRUBINEMIA, THERAPY, ENZYME INDUCTION (5469)
  - ICTERUS, OBSTRUCTION, HEMATOIDIN (3685)
  - JAUNDICE, STEROID, NEONATE (4424)
  - LIVER, ATRIOVENTRICULAR BLOCK, ENZYME (2826)
  - LIVER, IRON, JAUNDICE (2131)•
  - LIVER, MITOCHONDRIA, METABOLISM (5241)
  - LIVER, SECRETION, PIGMENT (1734)
  - LIVER FUNCTION, DYE UPTAKE, RIFAMYCIN SV (6454)•
  - LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)•
  - METABOLISM, NEONATAL ICTERUS (4406)
  - METABOLISM, TRANSFER, CONJUGATION, GLUCURONYL TRANSFERASE DEFICIENCY (7956)
  - NEONATAL, ALCOHOL INFUSION, LABOR (0552)
  - PHENOBARBITAL, DICOPHANE, NEONATAL JAUNDICE (0551)
  - PROTEIN BINDING, SERUM ALBUMIN, HUMAN, BOVINE, OPTICAL DENSITY (4859)
  - RHESUS INCOMPATIBILITY, NEWBORN INFANT, HEMOLYTIC JAUNDICE, FREE BILIRUBIN (6003)
  - SECRETION, GALLBLADDER, VAGOTOMY (3951)•
  - SECRETION, LIVER, SHEEP (4781)
  - SERUM, ASSAY, SPECTROPHOTOMETRY (4849)
  - SERUM, JAUNDICE, AFRICA (2167)
- BIOPSY
  - CROSBY, MAST CELL, DUODENUM, JEJUNUM, MEGALOBLASTIC ANEMIA (3433)
  - DIRECT VISION, GASTROSCOPY, ENDOSCOPY (1823)
  - DUODENAL MUCOSA, DUODENITIS, GASTROINTESTINAL DISEASES (7321)•
  - GASTRIC PUNCTURE, MAXIMAL HISTAMINE TEST, MOTILITY, HYPERTHYROIDISM (3275)
  - INTESTINE, TUBERCULOSIS, CHILD (9249)
  - LIVER, CANCER (3280)
  - LIVER, CENTRILOBULAR SINUSOIDAL, CONGESTIVE HEART FAILURE (6929)•
  - LIVER, CULTURE, HEPATITIS, DIAGNOSIS (2527)
  - LIVER, MENGHINI, LEUKEMIA, LAPAROTOMY, HEMORRHAGE, SHOCK (5344)
  - MENGHINI'S, LIVER, TECHNICAL IMPROVEMENTS, CHILDREN, INFANTS (8778)
  - PERORAL, SMALL INTESTINE, DIAGNOSIS, LESIONS, ATROPHIES (2532)
  - SMEARS, PORPHYRIA CUTANEA TARDA, FLUORESCENT MICROSCOPY (2802)•
  - STOMACH, ANTRUM, CHRONIC GASTRITIS (7243)
  - SUCTION, GASTRITIS, ATROPHIC, SUPERFICIAL, METAPLASIA (6609)
  - SUCTION, RECTAL MUCUS, HISTOCHEMISTRY, CYSTIC FIBROSIS, PANCREATIC DISEASE (4329)•
- BLEEDING
  - DUODENAL ULCER, SURGERY, NEONATE (4200)
  - GASTRIC AND DUODENAL ULCER, INCIDENCE, CHILDREN (8890)
  - GASTROINTESTINAL, ANGIOGRAPHY, DIAGNOSIS (2498)•
  - GASTROINTESTINAL, MASSIVE OCCULT,

- VASCULAR OPACIFICATION STUDIES (3725)•
- GASTROINTESTINAL, VISCERAL ANGIOGRAPHY (3292)
- HEMORRHOID, LIGATURE, NODULAR HEMORRHOIDS (8959)
- OCCULT, CAUSE, GASTROINTESTINAL TRACT (3724)
- PEPTIC ULCER, AGE EFFECT, ABO BLOOD GROUP EFFECT (3404)
- PROCTORHAGIA, COLON, DIVERTICULUM (4274)
- ULCERATIVE COLITIS, BLOOD AND IRON LOSS (1293)•

OOD
- ACTIVITY, INFECTIOUS HEPATITIS (1369)
- ACUTE HYPERSIDERINEMIA, GASTRIC SECRETION, HYDROCHLORIC ACID, GASTRIC MUCOSA (2382)
- ACUTE PANCREATITIS, CHOLEPANCREATITIS, TRYPSIN, PROTEIN (2787)
- ALBUMIN, METABOLISM (3980)
- ALBUMIN, TRANSFERRIN, FIBRINOGEN, HEPATIC SYNTHESIS (3968)
- ALPHA-AMYLASE, COMPARATIVE URINE VALUE (4065)
- ALTERATIONS, LIVER DISEASE, VITAMIN B12 (8291)
- AMMONIA, ACID-BASE EQUILIBRIUM, LIVER (3558)
- ANTICOAGULANTS, PANCREATITIS (3535)
- BILIRUBIN, HYPODYSTROPHIC NEWBORN (4389)
- BILIRUBIN, PHENOBARBITAL, NEONATE (4401)
- BRADYKININ LEVEL, ENDOTOXIC SHOCK, DOG (3243)•
- CA LEVEL, MG LEVEL, BIOTIN DEFICIENCY, HEPACTECTOMY (3186)
- CANCER, STOMACH, PROTEIN (2589)
- CELL, ULTRASTRUCTURE, ENDOTOXIC, SHOCK (6928)•
- CELLS, INCREASE, LEUCOGENENOL, LIVER (3193)
- CERULOPLASMIN, ACUTE CHOLECYSTITIS, COPPER (2972)
- CLOTTING FACTORS, PROTEIN, CIRRHOSIS (8389)
- COAGULATION, HEPARIN-RELIEVED ANURIA, PANCREATITIS (3540)
- DONORS, AUSTRALIA ANTIGEN, INCIDENCE (9116)
- DONOR, HEPATITIS VIRUS, EPIDEMIOLOGY (3631)
- ENZYMATIC TOXEMIA, ACUTE PANCREATITIS, THROMBOSIS, HEART, LUNG, LIVER, KIDNEY (2789)
- ENZYMATIC TOXEMIA, MYOCARDIAL INFARCTION, ACUTE PANCREATITIS (2791)
- ENZYME CHANGES, MORPHINE, LIVER DISEASE (4391)
- EOSINOPHIL, GASTROENTERITIS, MALABSORPTION (3890)•
- ESOPHAGOPLASTY, GRAFT, THERMOMETRY (0240)
- ESOPHAGOSTOMOSIS, COLON (4662)•
- FLOW, COLON, MOTILITY, NERVOUS SYSTEM (3898)
- FLOW, INTRAHEPATIC DISTRIBUTION (4001)
- FLOW, LIVER, DOG (4079)
- FLOW, LIVER, PARTIAL HEPATECTOMY, COLLOID CLEARANCE (2486)•
- GLYCOGEN STORAGE, HEPATOMEGALY (4365)•
- GROUPS, INFECTIOUS HEPATITIS, INCIDENCE, AGE PATTERN (0626)
- GROUP ABO, GROUP ABH, ACIDITY TITRATION, SECRETION, HISTAMINE, GASTRIC ULCER, DUODENAL ULCER (2594)
- HEMORRHAGE, FECAL LOSS, ASPIRIN (0971)
- HEPARIN, INFECTIOUS HEPATITIS, LIVER (2874)
- HEPATIC CIRRHOSIS, CHRONIC HEPATITIS, DIAGNOSIS, DRUG EFFECT (2888)
- HEPATIC CIRRHOSIS, HEPATITIS, WORK CAPACITY, RESPIRATION (2889)
- HEPATIC CIRRHOSIS, PATHOGENESIS, ANEMIA (2897)
- HEPATIC FLOW, INTRAHEPATIC DISTRIBUTION (4002)
- HYPERGLOBULINEMIA, INTESTINAL LYMPHOID HYPERPLASIA (3498)
- HYPERLIPOPROTEINEMIA, ANTISECRETORY PANCREATITIS (4359)
- LIPID, CHOLESTASIS, BILIRUBIN, LIVER (4472)
- LIPID, FRACTIONS, FECES (4009)
- LYMPHOCYTE SYSTEM, HEPATITIS (3604)
- MESENTERIC, WATER IN RED BLOOD CELLS AND PLASMA (3257)
- MINERALS, EXPERIMENTAL CHOLECYSTITIS (2913)
- PANCYTOPENIA, BONE MARROW APLASIA, INFECTIOUS HEPATITIS, PATHOGENESIS (0623)
- PLASMA, GROWTH HORMONE, FREE FATTY ACID (7322)•
- PLASMA, SKIMMING, INTESTINAL WALL (3246)
- PLASMA CELLS, INFILTRATION, GRANULOMA (3378)
- PLASMA CLEARANCE, BILE BSP, LIVER DISEASE (4523)
- PROTEINS, ESOPHAGOPLASTY, LARGE INTESTINE, CANCER, CICATRICAL STENOSIS (0237)
- PROTHROMBIN, HEPATIC SYNTHESIS, VITAMIN K (3963)
- SCREENING, AUSTRALIA ANTIGEN, VIRAL HEPATITIS (8363)
- SERUM, BIOCHEMISTRY, LIVER, JAUNDICE (3674)
- SERUM, FRUCTOSE PHOSPHATE ALDOLASE, LIVER TUMOR (3081)
- SERUM, IRON BINDING, TEEPOL (4000)
- SERUM ADENOSINE DEAMINASE, TYPHOID FEVER (4610)
- SERUM ALBUMIN, RADIO-IODINATED, DIAGNOSIS, HEPATIC TUMOR (3302)
- SERUM BILIRUBIN, TRANSAMINASE, ELECTROCARDIOGRAM, VIRAL HEPATITIS (1431)
- SERUM GUANASE, LIVER DISEASE (3572)
- SERUM PEPSINOGEN, GASTRIC SECRETION, POLAROGRAPHY, HISTAMINE (2384)
- SILICA TRANSPORT, INTESTINE, ADRENALECTOMY (3878)

- SMALL INTESTINE, RESECTION, MICROELEMENT (2661)
- STRING TEST, GUAIAC TEST (2525)
- SUGAR, FATTY ACID, TRIGLYCERIDE, LIVER, LIPID, GLUCAGON (3967)
- SUGAR, PANCREATIC SECRETION, BICARBONATE (3924)
- TRANSFUSION, SERUM HEPATITIS, EPIDEMIOLOGY, GAMMA GLOBULIN CONTROL (8361)
- TRANSFUSION, UPPER INTESTINAL TRACT HEMORRHAGE, TREATMENT (9231)
- URINE, COMPOSITION, FOOD RESPONSE, GASTRIC FUNCTION (0178)

BLOOD FLOW
- CELIAC ARTERY, SUPERIOR MESENTERIC ARTERY (6611)*
- ILEUM, INTRALUMINAL PRESSURE, ACETYLCHOLINE (6498)*
- INTESTINE, CAPILLARY AND NEURO-CELLULAR RELATIONS, MATHEMATICAL ANALYSIS (8002)
- LIVER, GLUCAGON, DOG (1790)*
- MESENTERIC, POST-PRANDIAL (6499)*
- PERITONEUM, OXYGEN CONSUMPTION, SPLANCHNIC FLOW (3739)
- SUPERIOR MESENTERIC ARTERY, ACETYLCHOLINE, VENOUS EFFLUENT (6500)*

BLOOD VESSEL
- ABDOMINAL SPLANCHNIC ARTERIES, COMMUNICATION, OCCLUSION (6953)
- ABDOMINAL VENA CAVA PRESSURE, PORTAL HYPERTENSION (7638)
- AORTA, RENAL ARTERY, BILIARY TRACT DISTENTION (7665)
- ARTERIAL SPIDERS, LATENT HEPATITIS, TREATMENT (3647)
- ARTERY, LIGATION, LIVER, RIGHT LOBE METASTASES, COLONIC CANCER (8450)
- CAPILLARIES, OMENTUM, PRESSURE PERMEABILITY (3250)
- CAPILLARY BED, MESENTERY, GRADIENT PERMEABILITY (3251)
- CAPILLARY PERMEABILITY, LIVER FLUKE HOMOGENATE ACTIVITY (3787)
- CELIAC ARTERY, NONATHEROMATOUS STENOSTENOSIS, PHYSIOPATHOLOGY (8427)
- CELIAC ARTERY, SUPERIOR MESENTERIC, INFERIOR MESENTERIC, FAT, ABDOMEN (6189)
- CELIAC OCCLUSION, HEMORRHAGE, MELENA, DIAGNOSIS, ANGIOGRAPHY, PRE-OPERATIVE DIAGNOSIS (5674)
- CHANGES, LIVER, HEPATECTOMY, RAT (2304)
- CORONARY VEIN, LIGATION, BLEEDING ESOPHAGEAL VARICES (3327)
- FLOW, LYMPH VESSEL, BODY FLUID, LIVER (3254)
- FUNCTIONAL MESENTERIC OCCLUSION, NECROSIS OF COLON, SURGERY (9251)
- GASTRIC, BLOOD FLOW, NEUROHORMONAL CONTROL (4003)
- HEPATIC ARTERY, ANGIOGRAPHY, PORTAL HYPERTENSION (6526)
- HEPATIC ARTERY, LIGATION, COLLATERAL CIRCULATION, DEARTERIALIZATION, ANGIOGRAPHY (5981)*
- HEPATIC ARTERY, PERFUSION, ANTIMETABOLITES (6852)
- HEPATIC ARTERY, PORTAL VEIN, FLOW, RESISTANCE (5630)*
- HEPATIC ARTERY LIGATION, HEMANGIOMATOSIS (7570)
- HEPATIC ARTERY LIGATION, METASTATIC TUMOR (7571)
- HEPATIC AND CYSTIC ARTERIES, ABERRANT HEPATIC BRANCHES (0926)
- HEPATIC AND SUPERIOR MESENTERIC ARTERIES, OCCLUSION, LIVER, BLOOD FLOW (9255)
- INFERIOR VENA CAVA, HEPATIC PORTION, MEMBRANOUS OBSTRUCTION, SURGERY (6178)
- INTERNAL ILIAC ARTERY, LIGATION, HYSTERECTOMY, LYMPHADENECTOMY (6225
- LIVER, CIRCULATION (4626)
- LIVER, GROSS ANATOMY, DOG (3075)
- LIVER ARTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)
- MESENTERIC ARTERY, HYPERTENSION, NORADRENALINE, RAT (6226)
- MESENTERIC ARTERY, HYPERVASCULARIZATION, CROHN'S DISEASE, ANGIOGRAPHY (5066)
- MESENTERIC ARTERY, OCCLUSION, EMBOLECTOMY (5332)
- MESENTERIC ARTERY, OCCLUSION, PERISTALSIS, DOG (6170)
- MESENTERIC VEIN, INFARCT, SMALL INTESTINE, RESECTION (8456)
- MESENTERY, VASOCONSTRICTOR INFUSION, GASTROINTESTINAL BLEEDING (8441)
- PANCREATICODUODENAL ARTERY, SPONTANEOUS RUPTURE, DIAGNOSIS (9222)
- PERIPHERAL ARTERITIS, CHRONIC PANCREATITIS, ETIOLOGY (9037)
- PORTAL VENOUS SYSTEM, PNEUMATOSIS, PROGNOSIS (9214)
- SMALL ARTERIES, MESENTERY, GEOMETRY, MECHANICAL PROPERTIES (3064)
- SPLENIC ARTERY ANEURYSM, UPPER GASTROINTESTINAL BLEEDING, SURGERY (8476
- STOMACH, CARDIOVASCULAR DISEASES (3384)
- UMBILICAL VEIN, HEPATOGRAPHY, LIVER (4058)
- VASOMOTOR CHANGES, MESENTERY (4611)
- VEIN, BILE DUCT REPLACEMENT, DOG (8403)
- VENOUS OCCLUSION, LIVER, CIRRHOSIS, ETIOLOGY (9063)
- VISCERAL ARTERIES, STENOSIS, OBSTRUCTION (8431)

BOECK'S DISEASE
- SARCOIDOSIS, APPENDIX, VERMIFORM, HISTOPATHOLOGY (0443)

BONE MARROW
- APLASIA, PANCYTOPENIA, INFECTIOUS HEPATITIS, PATHOGENESIS (0623)
- DEPRESSIONS, VIRAL HEPATITIS, ANATOM PATHOLOGY, CHILDREN (6056)*
- ERYTHROPOIESIS, SUPPRESSION, ALCOHOL FOLIC ACID (3547)*
- FUNCTION, LEUCOCYTIC RESISTANCE, CHRONIC LIVER DISEASES (9156)

LIBRARY U. OF I. URBANA-CHAMPAIGN

  - HEMATOPOIESIS, HEPATOSPLENIC SYNDROME, CHILDREN, HEPATITIS (4629)
  - HEPATITIS VIRUS MHV-3 (4481)
  - MALNUTRITION, CHILDREN (1391)
  - PANCYTOPENIA, INFECTIOUS HEPATITIS (0629)
  - PROLIFERATION, VIRAL HEPATITIS, CHILDREN (9130)
- OWEL
  - DISEASE, INFLAMMATORY ENTERITIS, MAGNESIUM DEFICIENCY, ULCERATIVE COLITIS (8921)•
  - FUNCTION, ILEOSTOMY, DIET (7413)•
  - HABITS, SPINA BIFIDA, CHILDREN, TREATMENT (2721)
  - HERNIA, FORAMEN OF WINSLOW (3429)
  - MOTILITY, DROPERIDOL, MUSCLE, FENTANYL (6385)
  - PSYCHIATRIC, CROHN'S DISEASE, STEATORRHEA (7438)•
  - SPONTANEOUS PNEUMOPERITONEUM, RESECTION (6974)
  - SURGERY, ANTIBIOTIC (3745)
- OWEL RESECTION
  - GROWTH INCREMENT, COLITIS, ENTERITIS (3435)•
  - VOLVULUS, TUMOR, INTESTINAL OBSTRUCTION (1188)
- RACHYESOPHAGUS
  - TRAUMA, NECROTIC ESOPHAGITIS, PERIESOPHAGITIS, PULMONARY INFLAMMATION (0247)
- RILL-SYMMERS DISEASE
  - CANCER, LYMPHOMA (0448)
- URNS
  - CAUSTIC, ESOPHAGUS, ANTIBIOTIC, STEROID, THERAPY (1826)•
  - CUTANEOUS, ELECTRICAL POTENTIAL CHANGES, ACUTE SURGICAL CONDITIONS, LIVER, KIDNEY (0816)•
  - THERMAL, GASTRIC SECRETION, DOG, MAN (2584)•

- ERULIN
  - BILIARY TRACT, RADIOLOGY (3124)•
- LCIFICATION
  - CARCINOMA, PANCREAS, ALCOHOLISM, ENZYME TESTS (9015)•
  - PANCREATIC, DETECTION, RADIOLOGY (2503)•
  - PROTEIN MALNUTRITION, NIGERIA (1319)
- LCIUM
  - ABSORPTION, INTESTINE, VITAMIN D3 (6355)•
  - ABSORPTION, LIVER DISEASE, CHRONIC PANCREATITIS, PEPTIC ULCERS (0035)
  - ABSORPTION, PROXIMAL GASTRIC RESECTION, GASTRIC AND PANCREATIC FUNCTION (1020)•
  - ABSORPTION, SECRETION, PARATHYROIDECTOMY (6350)•
  - ABSORPTION, SMALL INTESTINE, MAGNESIUM, JEJUNUM (1631)•
  - ABSORPTION, SMALL INTESTINE, RICKETTS, VITAMIN D DEPENDENT (3420)•
  - BLOOD LEVEL, BIOTIN DEFICIENCY, PARTIAL HEPATECTOMY (3186)
  - CALORIC DEFICIENCY, SURGERY, GASTROINTESTINAL (1088)
  - CHILDREN, ELECTROLYTE BALANCE, GASTRIC ACID EXCRETION (2386)
  - DEFICIENCY, MALABSORPTION, VITAMIN B12 (8174)
  - DUODENAL ABSORPTION, CHRONIC RENAL DISEASE, RATS (0037)
  - DUODENUM, VITAMIN D (3239)
  - INTESTINAL ABSORPTION, FASTING PATIENTS (3111)
  - LARGE INTESTINE, COLON, CARCINOMA (1969)•
  - LIVER, TRANSPORT, RAT, SODIUM, POTASSIUM (2343)•
  - MALABSORPTION, HYPOCALCEMIA, HEMOCHROMATOSIS, HYPOPARATHYROIDISM (2803)•
  - METABOLISM, ULCER, HISTAMINE, GASTRIC MUCOSA (2640)
  - PERITONEUM, DTPA, PLUTONIUM (3252)
  - TAENIA COLI, POTASSIUM, TENSION (2332)•
- CALCULUS
  - APPENDIX, BILIARY TRACT, CALCIFIED COPROLITH (2749)
  - BILE DUCT, CHOLANGIOGRAPHY (5690)
  - BILIARY, DETECTION, RADIOLOGY (2503)•
  - BILIARY OBSTRUCTION, CHOLEDOCHAL CYST, STRICTURE (6150)
  - BILIARY TRACT, SURGERY (3688)
  - CONCREMENT, LIVER, ANIMAL STUDY, RUTIN, BILE DUCT (5228)
  - CYST, BILE DUCT, DUODENUM (5318)
  - DUODENUM, DIVERTICULUM, PERFORATION (4997)
  - GALLBLADDER, AGE FACTOR, NUTRITION, GALLBLADDER PERFORATION, SEX FACTOR (5325)
  - GALLBLADDER, BILE, DIET, CHOLESTEROL (5314)
  - GALLBLADDER, BILE, LIPID CONTENT, CALCULOUS, ACALCULOUS, BILE SALTS (5436)•
  - GALLBLADDER, CHOLECYSTOGRAPHY (4918)
  - GALLBLADDER, ICTERUS, CARCINOMA, DIAGNOSIS (5306)
  - GALLBLADDER, ILEUS (5047)
  - GALLBLADDER, ILEUS, RADIOLOGY, DUODENUM, JEJUNUM (5857)
  - GALLSTONE, ILEUS, SMALL INTESTINE (7426)
  - GALLBLADDER, ILEUS, SURGERY (5054)
  - GALLBLADDER, OBSTRUCTION, DUODENUM (5330)
  - GALLBLADDER, X-RAY, ORAL TRIJOBIL, I.V. CYSTOGRAPHY, STOMACH, DUODENUM, SEX DIFFERENCE (5041)•
  - GALLSTONES, PANCREATITIS, SURGERY, NECROTIC LESION, PERITONEAL DIALYSIS (5152)
  - HEPATIC DUCT, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)
  - RECTUM, MILK OF MAGNESIA (5098)
- CALORIC DEFICIENCY
  - CALCIUM, SURGERY, GASTROINTESTINAL TRACT (1088)
- CANCER
  - ACUTE LEUKEMIA, LIVER BIOPSY, SHOCK,

HEMORRHAGE, MENGHINI (5344)
ADENOCARCINOMA, ATAXIA, TELANGIECTASIA (1093)
ADENOCARCINOMA, COLON, RECTUM (1989)
ADENOCARCINOMA, INTUSSUSCEPTION, APPENDIX (2716)
ADENOCARCINOMA, RECTAL AMPULLA, RECTOSIGMOID, ABDOMENO-PERINEAL RESECTION (1263)
ADENOCARCINOMA, STOMACH, METASTASIS, MUCOSA, MOUTH (1099)
ADENOCARCINOMATA, COLON, PROTEOLYTIC ENZYMES (2809)*
AMEBIC GRANULOMA, CARCINOMA, RECTUM, MAN (0474)
AMPULLA OF VATER, PANCREAS DUODENUM (4084)
ANAL CARCINOMA, TNM CLASSIFICATION (2011)
ANUS, ANAL CANAL, SQUAMOUS CELL, MELANOMA (8184)
APPENDIX (2751)
BILE DUCT, ULCERATIVE COLITIS (5315)
BLADDER, BENZIDINE, OCCULT BLOOD, FECES (1522)
CALCIFIED, DIAGNOSIS, MAN (0333)
CARCINOID, SECRETORY GRANULES, MASTOMYS (1032)
CARCINOID SYNDROME, SMALL INTESTINE (1936)
CARCINOID SYNDROME, TUMOR OF MECKEL'S DIVERTICULUM, ILEAL TUMOR (1934)
CARCINOID TUMOR (2985)
CARCINOID TUMOR, DIAGNOSIS, TREATMENT (1182)
CARCINOMA, AMPULLA OF VATER (2178)
CARCINOMA, ANGIOGRAPHY, THORIUM DIOXIDE, BILE DUCT (2181)
CARCINOMA, CLOACOGENIC, ANORECTAL JUNCTION, CYST (0470)
CARCINOMA, COLON, CHILDREN (1273)
CARCINOMA, COLON, POLYPOSISIS, GENES (2930)
CARCINOMA, COLON, SECOND-LOOK OPERATION, FLUOROURACIL THERAPY (3492)
CARCINOMA, COLON, SURGERY (2719)
CARCINOMA, DYSPHAGIA, TREATMENT, MOUSSEAU-BARBIN TUBE (0982)
CARCINOMA, ESOPHAGUS, HYPERTROPHIC OSTEOARTHROPATHY (1013)
CARCINOMA, ESOPHAGUS, SURGERY (2561)
CARCINOMA, ESOPHAGUS, SURGICAL PROBLEMS (2566)
CARCINOMA, EXTRAHEPATIC BILE DUCT, HISTOLOGY, SURGERY (1495)
CARCINOMA, GALLBLADDER (1500)
CARCINOMA, GALLBLADDER, DIAGNOSIS, SURGERY (2185)
CARCINOMA, GASTRIC STUMP (2664)
CARCINOMA, GASTROINTESTINAL TRACT, METHOTREXATE, THERAPY (2246)
CARCINOMA, HEPATOCELLULAR, DELTA 1-FETOPROTEIN TEST (2528)
CARCINOMA, HOSPITAL INCIDENCE (2241)
CARCINOMA, HYPOGLYCEMIA, SPONTANEOUS (0502)
CARCINOMA, JEJUNUM, RECURRENT GASTROINTESTINAL HEMORRHAGE (3426)
CARCINOMA, LIVER, REGENERATION, MITOSIS, MICE (1354)*
CARCINOMA, NON-OPERABLE, COLONIC OBSTRUCTION, COLOSTOMY AVOIDANCE (3502)
CARCINOMA, PANCREAS, CHRONIC PANCREATITIS (2031)
CARCINOMA, PHARYNOESPHAGEAL DIVERTICULUM (1008)
CARCINOMA, PITUITARY GLAND, METASTASIS TO LIVER AND BONES (2051)
CARCINOMA, RECTO-SIGMOID, SURGICAL TECHNIQUE (1975)
CARCINOMA, REGIONAL ENTERITIS (3715)
CARCINOMA, SARCOMA, SMALL INTESTINE (1177)
CARCINOMA, STOMACH, CAMERA, DIAGNOSIS (0309)
CARCINOMA, STOMACH, HISTOGENESIS, DEVELOPMENT (1880)
CARCINOMA, STOMACH, HISTOLOGY (0635)*
CARCINOMA, STOMACH, HYDROCARBONS, POLLUTANTS, AIR, FEEDING, PETROCHEMICAL AREA, MICE (3340)*
CARCINOMA, STOMACH, METAPLASIA, INTESTINAL, COLUMBIA, MIGRANTS (3344)
CARCINOMA, STOMACH, POST-SURGERY FOLLOW-UP (2616)
CARCINOMA, STOMACH, RADIATION THERAPY (0308)
CARCINOMA, THORACIC ESOPHAGUS, LAPAROTOMY (1952)
CARDIA, ESOPHAGUS, RESECTION, RADIOTHERAPY (5756)
CARDIOESOPHAGEAL, ENDOPROSTHESIS (1018)
CECUM, MUCOSA (5943)
CECUM, SURGERY (3483)
CELLS, CYTOLOGY, HISTOLOGY, STOMACH (3365)
CELLS, STOMACH, BLOOD GROUPS, ANTIGEN (5775)
CERVIX, IRRADIATION, GASTROINTESTINAL LESION (9200)*
CHEMICAL, NUCLEAR I-RNA, LIVER (3567)
CICATRIX, CAUSTIC STENOSIS, ESOPHAGUS (0246)
COBALT, THERAPY (0450)
COLON, ANUS, RECTUM (4271)
COLON, APPENDECTOMY (7490)
COLON, DIAGNOSIS (5904)
COLON, GLYCOGEN CONTENT, GLYCOGENESIS RATE, BENIGN TUMOR (0469)
COLON, LIVER METASTASIS, LONG-TERM SURVIVAL (0433)
COLON, POLYP, RADIOLOGY (6714)
COLON, RECTUM, ANTIGEN, TUMOR (6694)
COLON, RECTUM, ANUS, SURGERY (4193)
COLON, RECTUM, INCIDENCE (1986)
COLON, RECTUM, PALLIATIVE RADIATION THERAPY (3504)
COLON, STOMACH, LACTASE DEHYDROGENASE (0062)*
COLON, SURGERY (5107)
COLON, SURGERY, AMPICILLIN (7466)
COLON, SURGERY, PROGNOSIS (3475)
COLON, SURVIVAL, SURGERY (5909)

COLON, ULCERATIVE COLITIS (0497)•
COLONIC PERFORATION, DIVERTICULA, PERITONITIS (7493)
COLORECTAL, CHEMOTHERAPY (4294)
COLORECTAL, COLON RESECTION (5932)
COMMON BILE DUCT, PERITONEUM, PSEUDOMYXOMA PERITONEI (2734)
CYSTICERCOSIS, MADAGASCAR (4678)
DELAYED INTESTINAL OBSTRUCTION (3714)
DIAGNOSIS, DIFFICULTY (0571)
DIAGNOSIS, LIVER INVOLVEMENT, GAMMA-GLUTAMYL TRANSPEPTIDASE (3268)•
DIAGNOSIS, RIGHT COLON, OBSTRUCTION, STOMACH, APPENDICITIS (2520)
DIAGNOSIS, STOMACH, CYTOLOGY, ENDOSCOPY (0268)•
DIAGNOSIS, STOMACH, INTESTINE, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
DIFFUSE CARCINOSIS, COLON, ULCERATIVE COLITIS (3515)
DIGESTIVE CARCINOMA, METASTASES, PARTIAL HEPATECTOMY (2076)
DIGESTIVE TRACT, CHEMOTHERAPY (4650)
DIGESTIVE TRACT, LARGE INTESTINE (3474)
DNA POLYNERASE, RNA POLYMERASE (7137)•
DUODENAL PAPILLA, RADICAL SURGERY (5803)
DUODENUM, DIAGNOSIS, TREATMENT (0330)
DUODENUM, DUODENOSCOPY, SCOPIC BIOPSY (6645)
DUODENUM, PAPILLA, SURGERY (5814)
EARLY DIAGNOSIS, EARLY, STOMACH, COLON PANCREAS (0204)
EARLY MANIFESTATION, STOMACH, ULCER, POLYP, INTESTINE (5367)
EHRLICH CARCINOMA, YOSHIDA SARCOMA, CYCLOPHOSPHAMIDE ACTIVATION (7177)
ELECTRO-DESTRUCTION RECTUM (0451)
ESOPHAGOGASTRO-ANASTOMOSIS, ESOPHAGITIS, SURGERY, REFLUX (2552)
ESOPHAGUS, ALCOHOLISM, CIRRHOSIS (4122)
ESOPHAGUS, BILIARY TRACT, SMALL INTESTINE, INCIDENCE, SYMPTOMATOLOGY (2777)
ESOPHAGUS, BLEOMYCIN (6603)
ESOPHAGUS, CARDIOSPASM (1003)
ESOPHAGUS, CICATRIX (1830)
ESOPHAGUS, CLINICAL COURSE, DIAGNOSIS, TREATMENT (1843)
ESOPHAGUS, CYTO-DIAGNOSIS (5665)
ESOPHAGUS, DRUG EFFECT, RADIOLOGY, SURGERY (2553)
ESOPHAGUS, FISTULA (1837)
ESOPHAGUS, INFILTRATING (0245)
ESOPHAGUS, RADIOLOGY, BRONCHOESOPHAGEAL, INVESTIGATION, SURGERY (2551)
ESOPHAGUS, RECONSTRUCTION, COLON INTERPOSITION (3329)
ESOPHAGUS, STOMACH, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
ESOPHAGUS, STOMACH, HIATAL HERNIA, DIAPHRAGM (0997)
ESOPHAGUS, SURGERY (1001), (4108)
ESOPHAGUS, SURGERY, TREATMENT (1002)
ESOPHAGUS, SURGICAL TECHNIQUES (1840)
ESOPHAGUS, TRANSPLEURAL SURGERY, ANESTHESIA (7315)
GALLBLADDER, EPITHELIAL ALTERATIONS (8408)
GALLBLADDER, STATISTICAL DATA (0664)
GASTRIC, CHEMOTHERAPY (7379)
GASTRIC, DIAGNOSIS, MICROGASTROFIBERSCOPE (4049)
GASTRIC, DUODENAL, DEVELOPMENT, ANASTOMOSIS, ULCER (2627)
GASTRIC, EARLY, PROGNOSIS (4144)
GASTRIC, EARLY AND ADVANCED, JAPAN (4173)
GASTRIC, EARLY SURGERY, GASTRECTOMY (5816)
GASTRIC, ENDOSCOPY (7277)
GASTRIC, 5-FLUOROURACIL PERIPHERAL BLOOD MORPHOLOGY (8125)
GASTRIC, GASTRECTOMY, INDICATION (4139)
GASTRIC, GASTRO-FIBERSCOPE, BIOPSY (6545)
GASTRIC, INTESTINAL, HEPATIC METASTASES, DIAGNOSIS, PORTOHEPATOGRAPHY (0195)•
GASTRIC, LIVER MORPHOLOGY (7340)
GASTRIC, PARTIAL RESECTION (7381)
GASTRIC, POSTOPERATIVE SURVIVAL (4175)
GASTRIC, RESECTION (5822)
GASTRIC, SODIUM BALANCE (0283)
GASTRIC, THIAMINE METABOLISM (5812)
GASTRIC, ULCER (6617)
GASTRIC ACANTHOMA, NUCLEIC ACIDS, HISTOMORPHOLOGY, FLUOROMICROSCOPY (0019)
GASTRIC JUICE, PRECANCEROUS STATE, DIAGNOSIS, LACTATE DEHYDROGENASE (2517)
GASTRIC STUMP, GASTRECTOMY, ULCER (1145)
GASTROINTESTINAL, CHEMOTHERAPY, 5-FLUOROURACIL (8436)
GASTROINTESTINAL, COMBINATION CHEMOTHERAPY (8443)
GASTROINTESTINAL, NUTRITION (3759)
GASTROINTESTINAL TRACT, CHEMOTHERAPY (2216)
GASTROINTESTINAL TRACT, EPIDEMIOLOGY (4624)
HEMATOMA, DUODENUM, TRAUMA (0587)
HEMORRHAGE, ULCER, SURGERY (5372)
HEPATIC METASTASIS, BENIGN CHOLANGIOMA, DIFFERENTIAL DIAGNOSIS, HISTOLOGICAL EXAMINATION (0952)•
HEPATOBLASTOMA, ANTICARCINOGEN THERAPY, INFANT (2047)
HEPATOCARCINOGENESIS, CHEMICAL, EPIPHYSECTOMY, RAT (0152)
HEPATOCELLULAR CARCINOMA, POSTNECROTIC CIRRHOSIS, VIRAL HEPATITIS (1429)
HEPATOMA, AFLATOXIN DIET (0146)
HEPATOMA, CYTOSTATIC AGENTS, METHOTREXATE, RADIOTHERAPY (7531)•
HEPATOMA, OVARIAN, ASCITES, HEMORRHAGIC (1450)
HEPATOMA, SYMPOSIUM (1378)
ILEUM, COLON, LYMPHOSARCOMA (0390)
INCIDENCE, COLON, RECTUM, STOMACH, PANCREAS, MULTIHIT THEORY (4265)•
INTESTINE, DIAGNOSIS, SERUM CHEMISTRY, MAN (0179)•

ISLET CELL TUMOR, VATER'S PAPILLA, ADENOCARCINOMA (6744)
KUPFFER-CELL SARCOMA (3566)
LARGE INTESTINE, ADHESION (5938)
LARGE INTESTINE, CARCINOEMBRYONIC ANTIGEN, RADIOIMMUNOASSAY (1219)*
LARGE INTESTINE, CHRONIC OBSTRUCTION (7467)
LARGE INTESTINE, DETECTION, RADIOLOGY (0188)*
LARGE INTESTINE, OCCLUSIONS, PHYSIOPATHOLOGY, DIAGNOSIS (0466)
LARGE INTESTINE, SURGERY (7459)
LEIOMYSARCOMA, ILEUM, TESTIS (1946)
LEUKEMIA, AUSTRALIA ANTIGEN, HEPATITIS (7622)
LEUKEMIA, COLON, TYPHLITIS, CHILDHOOD (7485)
LIP, STOMACH DISORDERS (1885)
LIVER, ALPHA-FETOPROTEIN (3261)*
LIVER, ALPHA-FETOPROTEIN, SEROLOGICAL DIAGNOSIS (5651)*
LIVER, BIOPSY (3280)
LIVER, CHEMOTHERAPY, RADIOISOTOPES, INTRA-AORTA, INTRA-HEPATIC ARTERY, MORTALITY RATES (4369)*
LIVER, CIRRHOSIS, SCANNING (1803)*
LIVER, COPPER, ZINC, POTASSIUM (5698)
LIVER DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, CIRRHOSIS (9040)*
LIVER, DI-FETOPROTEIN, REGIONAL DIFFERENCES (1350)*
LIVER, ENZYMES (0538)*
LIVER, ETIOLOGY, EPIDEMIOLOGY, CIRRHOSIS, AGE FACTOR, ENVIRONMENTAL FACTOR, ETHANOL, CARCINOGENS (4376)
LIVER, FETOPROTEIN, SERUM (2073)
LIVER, 4-DIMETHYLAMINOAZOBENZENE, METABOLISM, COPPER ACETATE (2422)
LIVER, GLYCOGEN, HISTOCHEMISTRY (6316)
LIVER, HEPATOMEGALY, SCINTIGRAPHY, ALCOHOLIC STEATOSIS (5661)
LIVER, LOBECTOMY, LIVER FUNCTION TESTS, METABOLISM, REGENERATION (4362)*
LIVER, METASTASES, SERUM ENZYMES (2035)*
LIVER, NEEDLE BIOPSY, METASTASIS, STOMACH, SCANOGRAPHY (2524)
LIVER, OROTIC ACID, ETHIENINE, N-2-FLUORENYLACETAMIDE, 3'-METHYL-DIMETHYLAMINEAZOBENZENE (6060)*
LIVER, PATHOLOGY, SYMPTOMATOLOGY (2851)
LIVER, PRIMARY, INCIDENCE, IVORY COAST (4441)
LIVER PROTHROMBIN, CIRRHOSIS, FIBRINOLYSIS (5646)*
LIVER, STOMACH, MITOCHONDRIA, DNA (3549)*
LIVER, SURGERY (7542)
LUNG, JEJUNUM (5043)
LYMPHOMA, BRILL-SYMMERS DISEASE, RECTUM (0448)
LYMPHOSARCOMA, DUODENUM (1091)
LYMPHOSARCOMA, STOMACH (3367)
MALIGNANT, LIVER, BILE DUCTS, PANCREAS (0563)
MALIGNANT, SECONDARY HEPATIC DEPOSITS EXCISION (2050)
MALIGNANT STRICTURES, ESOPHAGUS, PALLIATIVE INTUBATION (2572)
MEDIASTINAL TUMOR, ESOPHAGUS, RADIOLOGY, EPITHELIOMA (4962)
MELANOMA, STOMACH, SMALL INTESTINE, LUNG (0334)
METASTASES, COLON, RECTUM, LIVER, CHEMOTHERAPY (5198)
METASTASES, LIVER, GAMMA-GLUTAMYL-TRANSPEPTIDASE, ALKALINE PHOSPHATASE, OBSTRUCTIVE JAUNDICE (4936)
METASTASES, LIVER, METABOLISM, 5-FLUOROURACIL, PANCREATIC CARCINOM (6014)
METASTASES, LIVER SCAN, RADIOALBUMIN (5673)
METASTATIC, PRIMARY, SECONDARY, LIVER (4378)
MOUTH, THROAT, ESOPHAGUS, STOMACH, BETEL CHEWING, NATAL INDIANS (2944)
MUCOID ADENOCARCINOMA, ANORECTAL FISTULA (3501)
MULTIPLE POLYPOSIS, RETAINED BOWEL SEGMENT (3472)
NEOPLASTIC, POLYP, STOMACH, PYLORIC ANTRUM, MUCOSA, SUBMUCOSA (5006)
PANCREAS, BIOPSY, DIAGNOSIS (1313)
PANCREAS, DIABETES (2024)
PANCREAS, DIAGNOSIS, RETROPERITONEAL GAS STUDY (2023)
PANCREAS, SCANNING, RADIOACTIVE SELENIUM (0208)
PANCREAS, SYMPTOMS, RISING INCIDENCE (0501)
PANCREATIC, METASTASES, ANASTOMOSIS, BIOPSY (5141)
PANCREATIC, SURVIVAL (4331)
PANCREATITIS, DIAGNOSIS (2522)
PARENCHYMATOUS CARCINOMA, PANCREAS, PALLIATIVE SURGERY (1317)
PEPTIC ESOPHAGITIS, ULCER, STENOSIS, OPERATION, SECRETION, DIAGNOSIS (2555)
PHARYNGOESOPHAGEAL FISTULA, LARYNGECTOMY, PHARYNGOESOPHAGOSTOMA (255
POLYPOID CARCINOMA, DUODENUM, DIAGNOSIS, TREATMENT (1891)
PRIMARY, DUODENUM, DIAGNOSIS, TREATMENT (1890)
PRIMARY, LIVER, AGE, SEX (6048)
PRIMARY, LIVER, CIRRHOSIS, ALCOHOLIS ETIOLOGY, EPIDEMIOLOGY (4374)
PRIMARY, LIVER, DIAGNOSIS (5183)
PRIMARY, LIVER, GALLBLADDER, ORTHOTOPIC AND HETEROTOPIC LIVER HOMOGRAFTS (8302)
PRIMARY, LIVER, HEPATOMA, CHOLANGIOM (8310)
PRIMARY, LIVER, HEXAMETHYLMELAMINE (6796)
PRIMARY, LIVER, POLYCYTHEMIA (4441)
PRIMARY MALIGNANT TUMOR, JEJUNUM (1945)
PROSTATIC, RECTAL OCCLUSION, EPITHEL OMA, DYSURIA, ESTROGEN THERAPY (5111)
PSEUDO-, APPENDICITIS (4298)

- PULMONARY, LIVER FUNCTION (7594)
- RADIATION, LARGE INTESTINE, MICROORGANISM, MAN (3708)*
- RADIOTHERAPY, FLUOROURACIL (1089)
- RECTAL, SIGMOID, SURGERY, URINARY APPARATUS (4297)
- RECTUM (3495)
- RECTUM, ARTERIOGRAPHY DIAGNOSIS (0453)
- RECTUM, COLON, RADIATION THERAPY (5112)
- RECTUM, COLON, SURGERY (1268), (7458)
- RECTUM, LARGE BOWEL, UNDIAGNOSED, RACE DIFFERENCES (5921)
- RECTUM, LYMPHOGRAPHY (7266)
- RECTUM, RECTOSIGMOIDOSCOPY, POLYPS, OCCULT BLOOD (6520)*
- RECTUM, RESECTION (5936)
- RECTUM, SURGERY, DIAGNOSIS (2738)
- RECTUM, SURGERY, LARGE INTESTINE (1279)
- RECTUM, SURGERY, PERINEOABDOMINAL OPERATION (5917)
- RECTUM, SURGERY, TECHNIQUE (8970)
- RECTUM, SURGICAL TREATMENT (0447)
- RECTUM, SYNCHRONOUS EXTIRPATION (7464)
- RECTUM, TREATMENT (0452), (7463)
- RECTUM, TREATMENT, POLYP (2707)
- RENAL, HEPATIC, REGRESSION, MUCOPROTEINS, NEPHRECTOMY, LIVER BIOPSY, AMULOIDOSIS (5185)
- RETICULUM SARCOMA, STOMACH (1894)
- RHODAMINE SARCOMA IMPLANT, DELTA 4-STEROID HYDROGENASE, RAT LIVER (2279)*
- RISK, POSTAPPENDECTOMY (5927)
- SARCOMA, IMPLANTATION, ANASTOMOSIS, COLON, RAT (1978)
- SARCOMA, OSTEOGENIC, LIVER, HEMOCHROMATOSIS (2839)
- SERUM ZINC LEVEL, HEPATOMA, MAN (1347)*
- SIGMOID, VISCERA, COLLAGENOSES, IMMUNOLOGY (8472)
- SMALL INTESTINE, MAN (0386)
- SMALL INTESTINE, REGIONAL ENTERITIS (1960)
- SOUTTAR TUBE, SURGERY (0998)
- STOMACH (1896), (1897)
- STOMACH, AMINO ACID, SURGERY (2606)
- STOMACH, AMINO ACID, ULCER (2611)
- STOMACH, ANALYSIS (4143)
- STOMACH, CELL PROLIFERATION, AUTORADIOGRAPH (5788)
- STOMACH, CELIACOGRAPHY (5710)
- STOMACH, CHARACTERISTICS, DIAGNOSIS (0324)
- STOMACH, COLLAGENOLYTIC ACTIVITY, GASTRIC ULCER (7346)
- STOMACH, COLON, THORAX, RADIOGRAPHY (4947)
- STOMACH, CYTODIAGNOSIS (4890)*
- STOMACH, CYTODIAGNOSIS, FLUORESCENCE, LAVAGE (7534)*
- STOMACH, DEVELOPMENT (7342)
- STOMACH, DIABETES MELLITUS (7383)
- STOMACH, DIAGNOSIS, GASTROSCOPE, GASTRO-CAMERA (5720)
- STOMACH, DIAGNOSIS, SURGERY (4929), (5709)
- STOMACH, DIET, ELECTROLYTE BALANCE (1055)
- STOMACH, DUODENUM, RELAPSE, GASTRECTOMY (7356)
- STOMACH, DUODENUM, THROMBOEMBOLISM, HEMORRHAGE (3413)
- STOMACH, ENZYME, INHIBITION, ACTIVATION (1868)
- STOMACH, ESOPHAGUS, SURGERY (4928)
- STOMACH, FORMIC ACID DERIVATIVE (7330)*
- STOMACH, GASTRIC RESECTION, RADIATION THERAPY (1081)
- STOMACH, IMMUNOLOGY (4991)
- STOMACH, INCIDENCE, SURGERY, MORTALITY RATE (8110)
- STOMACH, LIVER, DIAGNOSIS, ANGIOGRAPHY (5729)
- STOMACH, LYMPH NODE, GASTRECTOMY (4979)*
- STOMACH, LYMPHOSARCOMA, MULTIPLE ULCERATION (0315)
- STOMACH, MESENCHYMAL, LYMPHORETICULOSARCOMA, POLYPOID (6655)
- STOMACH, METASTASIS (1861)
- STOMACH, MORPHOLOGY (1061)
- STOMACH, MORTALITY (7380)
- STOMACH, MUCOSA (1057), (3837)
- STOMACH, MUSCLE, TUMOR, POTENTIAL (4154)
- STOMACH, PREPYLORIC, DIAGNOSIS FIBROSCOPE (0319)
- STOMACH, PROTEIN, BLOOD (2589)
- STOMACH, PROXIMAL RESECTION, GASTRIC AND PANCREATIC FUNCTION, ABSORPTION (1020)*
- STOMACH, RADIOLOGY, DIAGNOSIS (5009)
- STOMACH, RESECTION (7382)
- STOMACH, SUPERFICIAL, DIAGNOSIS (1090)
- STOMACH, SURGERY (5823)
- STOMACH, THROMBOCYTOPENIA PURPURA, GERIATRIC (1077)
- STOMACH, VAGOTOMY, RESECTION, ULCER, POLYP (5805)
- STOMACH, X-RAY DIAGNOSIS (7267)
- SURGERY, EFFECTS (0445)
- SURGERY, TREATMENT (0449)
- THORACIC, ESOPHAGUS, SURGERY (3318)
- TUMOR, ABDOMINAL, DIAGNOSIS, GAS INSUFFLATION (4897)*
- TUMOR, CARCINOID, SMALL INTESTINE, DIAGNOSIS, MAN (0385)
- TUMOR, DUODENUM, MAN (0336)
- ULCER, MORTALITY, COMPARISON (1096)
- VILLOUS TUMOR, EXUDATIVE GASTROPATHY HYPOPROTEINEMIA, GASTRECTOMY (1887)

CANDIDIASIS
- ESOPHAGITIS, MALIGNANT, CHILDREN (6935)*
- INTESTINE, INTESTOPAN, THERAPY (3020)

CAPILLARY
- FENESTRATED, DIGESTIVE SYSTEM, RABBIT, MOUSE (0706)
- MESENTERIC, GRADIENT VASCULAR PERMEABILITY (3251)
- OMENTUM, PRESSURE PERMEABILITY (3250)

  PANCREATITIS, VASODILATATION, BRADYKININE, SEROTONIN (6753)
  PERMEABILITY, LIVER FLUKE HOMOGENATE ACTIVITY (3787)
CAPSAICIN
  ILEUM, ISOLATED, AURICLE, GUINEA PIG (1652)
CARBOHYDRATE
  ABSORPTION, BLOOD CALCIUM LEVEL, MAN (8563)
  ABSORPTION, INTESTINE, GLUCOSE, TANNIC ACID, BUTYRIC ACID, METHIONINE (4780)
  ABSORPTION, LACTOSE INTOLERANCE (7448)
  ASCITES HEPATOMA, AH 13, AH 39, GLYCOGENESIS, GLYCOGENOLYSIS, ENZYME ACTIVITY (5987)•
  CARDIOGLYCOSIDE, METABOLISM, ABSORPTION, BILE, EXCRETION (4779)•
  CIRRHOSIS, DISACCHARIDE INTOLERANCE, MALTOSURIA, AMINOACIDURIA (5898)
  CONGENITAL LACTOSE MALABSORPTION, DUODENUM (6691)
  D-FRUCTOSE, LIVER, METABOLISM (5211)
  DIGESTION, ABSORPTION (1638)
  DISACCHARIDE, INTESTINE, RAT, LACTASE, SUCRASE, MALTASE, MALNUTRITION (5622)
  DISACCHARIDE INTOLERANCE, MALABSORPTION (6690)
  GLUCOCORTICOID, LIVER GLYCOGEN PHOSPHORYLASE (7142)•
  GLUCOCORTICOID, LIVER, GLYCOGEN SYNTHETASE (7146)•
  GLUCOSE, GALACTOSE, FRUCTOSE, METABOLISM, MALABSORPTION, CHILDREN (2686)•
  GLUCOSE, INTESTINAL SECRETION, GLUCAGON, DOG (5614)•
  GLUCOSE, INTESTINE, WORM (5404)
  GLUCOSE, MALABSORPTION, ERYTHROCYTE, MEMBRANE TRANSPORT (5084)
  GLUCOSE, METABOLISM, INSULIN, CIRRHOSIS, DIABETES, POTASSIUM CHLORIDE (6121)
  GLUCOSE, METABOLISM, LIVER, TOLDUTAMIDE TEST (4916)
  GLUCOSE, METABOLISM, OBESITY, INSULIN, JEJUNOILEOSTOMY (5865)
  GLUCOSE, PERFUSION, LIVER, ENZYME, ACTIVITY, RAT (4745)
  GLUCOSE, SECRETION, EXOCRINE, PANCREAS, ENZYME, GLUCAGON (5552)•
  GLUCOSE, XYLOSE, LIVER MICROSOME, DEHYDROGENASE (6465)
  GLUCOSE TRANSPORT, METABOLISM, FASTING (5491)•
  GLUCOSE TRANSPORT, SMALL INTESTINE, O2 AVAILABILITY (6361)
  GLUCOSYLATION, ACCEPTOR-LIPID, DOLICHOL (6307)•
  GLYCOGEN, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS, CORTISOL, HEPATOCYTES (5461)
  GLYCOGEN, LIVER, DAV CARCINOGENESIS HISTOCHEMISTRY (6316)
  GLYCOGEN STORAGE DISEASE, GARGOYLISM, LIVER BIOPSY, ENZYMATIC DIAGNOSIS (6531)
  GLYCOGEN SYNTHESIS, BIOTIN DEFICIENCY, DIURNAL CYCLES (4836)•
  GLYCOGEN SYNTHESIS, INHIBITION, LIVER (6470)
  GLYCOGEN SYNTHESIS, LIVER, RADIOACTIVITY, PRECURSOR, GLUCOSE INCORPORATION, MICE, GLUTAMIC ACID (4861)
  HYDROLYSIS, MALTASE, INTESTINE (7024)•
  HYPERGLYCEMIA, GASTRECTOMY, HYPERINSULINISM, PREDISPOSITION, DIABETES MELLITUS (4982)
  INTESTINAL TRANSPORT, AMINO ACID (6363)
  LACTOSE, INTOLERANCE, ADULT, JEJUNAL MUCOSA (5896)
  LACTOSE, INTOLERANCE, MALABSORPTION, MILK TREATMENT, ZYMIL (5897)
  LACTOSE, INTOLERANCE, MILKING, CULTURE (7446)
  LACTOSE, IRON UTILIZATION, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
  LACTOSE, MALABSORPTION, LACTOSE TOLERANCE, GASTROINTESTINAL SYMPTOMS (5886)•
  LACTOSE TOLERANCE, CALCIUM, PHOSPHORUS METABOLISM (5612)•
  LACTULOSE, CIRRHOSIS, HEPATOPORTAL ENCEPHALOPATHY (7631)•
  LIVER GLYCOGEN, ISOLATION, SODIUM IOTHALAMATE (6331)
  LOW LACTOSE, MILK, ZYMIL, MALABSORPTION (6202)
  MALABSORPTION, ENZYME DEFECT (3458)
  MARASMUS, ETIOLOGY, TREATMENT (6179)
  METABOLISM, ACUTE NON-VIRAL HEPATITIS, MUSHROOM POISONING (6066)
  METABOLISM, GLYCEROL, GLYCERIDE (5935
  METABOLISM, GLYCOLYSIS, PENTO PHOSPHATE SHUNT, HEPATOMA (8295)
  METABOLISM, HEPATECTOMY, GLUCOSE, FATTY ACID (7148)•
  METABOLISM, LIPID METABOLISM, CHOLINOMIMETICS, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)•
  METABOLISM, LIVER, NICOTENAMIDE (6421)•
  METABOLISM, LIVER, PATHOLOGY (5180)
  METABOLISM, LIVER, STARVATION (5635)
  METABOLISM, MALNUTRITION, JAMAICA, CHILDREN (2213)
  METABOLISM, MUCOPOLYSACCHARIDE, INBORN ERRORS, HURLER'S SYNDROME, HUNTER SYNDROME, SANFILIPPO SYNDROME (6211)
  OVERLOAD, LIVER, GLYCOGENOSIS, GALACTOSEMIA, FRUCTOSEMIA (9070)
  PROTEIN BOUND, HEXOSES, LIVER DAMAGE (9093)•
  SIMPLE SUGAR, ABSORPTION, SMALL INTESTINE, WATER (4784)
  SORBITOL, SMALL INTESTINE, RADIOLOGY, DIAGNOSIS (4913)
  STARCH HYDROLYSIS, STOMACH, AMYLOLYTIC ACTIVITY (5544)
  SUCROSE, HEPATIC ENZYMES, PARTIAL HEPATECTOMY, ALCOHOL, GLYCOGENESIS, GLYCOGENOLYSIS, RAT (5999)
  SUCROSE, SODIUM CYCLAMATE, SACCHARIN, CARCINOGENESIS (6515)

- CARBO-QUINOLINE DERITIVE
  - ENTEROCOL, TREATMENT, DIARRHEA SYNDROMES (3721)
- CARBON TETRACHLORIDE
  - DISTRIBUTION, SKF 525A, RAT, TISSUE (7061)*
  - FATTY LIVER, METABOLISM, ATP (3167)*
  - HEPATIC VEIN THROMBOSIS, CIRRHOSIS, RAT (3606)
  - HEPATOTOXIC ACTION, MECHANISM (3187)
  - LIPID, LIVER, ORGANELLE (3937)*
  - LIVER, ENZYME, KIDNEY (3855)
  - LIVER, METABOLISM (3217)
  - LIVER, NECROSIS, INTRACYTOPLASMIC LIPOSIS, MICE (0126)
  - LIVER, ULTRASTRUCTURE, HYPOTHERMIA, RAT (3825)
  - LIVER DAMAGE, FRUCTOSE PHOSPHATE ALDOLASE (3608)
  - LIVER DAMAGE, TRIGLYCERIDE, FAT MOBILIZATION, RAT (0123)
  - POISONING, HEPATIC COLLAGEN (6448)*
  - POISONING, HEPATIC COLLAGENOLYTIC ACTIVITY, RATS (1750)
  - POISONING, LIVER, MUCOPOLYSACCHARIDE SYNTHESIS, AUTORADIOGRAPHIC STUDIES (1714)*
  - POISONING, LIVER, MUCOPOLYSACCHARIDE SYNTHESIS, PASSIVE BINDING (1715)*
  - TOXICITY, HEPATIC CELLS, MEMBRANE POTENTIAL (4447)*
  - VITAMIN, LIVER DAMAGE, PROTECTION, RAT, ENZYME, MITOCHONDRIA (2822)
- CARCINOGEN
  - AROMATIC HYDROCARBONS, ANTHRACENE, DIHYDRODIOL, LIVER METABOLISM, RATS (5571)*
  - AZO DYE, BASOPHILIA, RNA (6303)*
  - BETEL-CHEWING, UPPER ALIMENTARY TRACT, CANCER, NATAL INDIANS (2944)*
  - B-PROPIOLACTONE, HAPATOMA, SUCKLING MICE (8637)*
  - DIMETHYLNITROSAMINE - 3H, LIVER, RAT (0856)*
  - HEPATIC LESION, SEX, AGE, RAT (6057)*
  - HEPATOCARCINOGENESIS, MECHANISM (4436)
  - HEPATOCYTE, TUMOR (4367)*
  - HYDROCARBONS, PETROCHEMICAL AREA, FEEDING, CARCINOMA, STOMACH, MICE (3340)*
  - LIVER, ENZYME REGULATION, GLYCOLYSIS (6079)
  - LIVER, 4-DIMETHYLAMINOAZOBENZENE, HISTOCHEMISTRY (8282)
  - M-TOLUYLENEDIAMINE, LIVER, RAT (6827)
  - NADPH2-DEPENDENT NITRO-REDUCTASE, LIVER MICROSOME (3058)
  - N-HYDROXY-2-ACETYLAMINOFLUORENE, LIVER, DNA, BINDING, RAT (0107)
  - N-HYDROXY-2-FLUORENYLACETAMIDE, ADDUCT, LIVER PROTEIN (8671)
  - NITRITES, METHEMOGLOBIN, NITROSAMINES, PH, BASICITY, STOMACH (5550)
  - N-2-FLUORENYLACETAMIDE, HEPATIC NODULE, METABOLISM (7536)*
  - O-TOLUIDINE, HEMATEST, FECAL BLOOD TEST, AMIDOPYRINE (8704)*
  - SODIUM CYCLAMATE, SACCHARIN, SUCROSE (6515)
  - STOMACH, FORMIC ACID DERIVATIVE (7330)*
  - TANNIC ACID, POLYRIBOSOME DISAGGREGATION, LIVER, RAT (3620)
  - 2-ACETYLAMINOFLUORENE, LIVER ULTRASTRUCTURE (8639)*
  - 2-FLUORENYLACETAMIDE, AFLATOXIN B1, HYPERPLASTIC LIVER NODULES, IN VITRO GROWTH, RAT (1754)
- CARCINOGENESIS
  - DIACETAMIDOFLUORENE, LIVER, RESERPINE INHIBITION, MOUSE (8305)
  - GASTRIC, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE (7328)*
  - HEPATIC, DIETARY AMINO-AZO DYE, RESISTANCE (3615)
  - HEPATIC METASTASIS, TREATMENT (3563)
  - HEPATOMA, ANAEROBIC GLYCOLYSIS (7533)*
  - LIVER, ADRENALECTOMY, MOUSE (8678)
  - LIVER, CELL SPECIFIC GRAVITY (2093)
  - LIVER, DIETHYLNITROSAMINE, SORBITOL DEHYDROGENASE, RAT (8297)
  - LIVER, DNA SYNTHESIS, AZO DYE (7902)*
  - LIVER, PRECANCEROUS STAGE, MORPHOLOGY (8683)
  - LIVER, REGENERATION, NUCLEAR DNA TRANSFER (7974)
  - LIVER, RNA, RAT (0855)*
  - N-HYDROXY-2-ACETYLAMINOFLUORENE SULFOTRANSFERASE, PROTEIN-(METHION-S-YL) BINDING (6433)*
  - STOMACH ADENOCARCINOMA, MUCOSA (3837)
- CARCINOMA
  - ADENO-, APPENDIX, ACUTE APPENDICITIS (5901)
  - ADENO-, COLON, RECTUM (7480
  - ADENO-, PRIMARY, JEJUNUM (8900)
  - ADENO-, STOMACH, HEMOPATHIC, ANEMIA, YOUNG ADULT (5016)
  - ADRENOCORTICAL, EXTRA-PANCREATIC, HYPOGLYCEMIA, MESODERMAL (6747)
  - ANAPLASTIC, INTESTINE, STOMACH, PANCREAS (6970)
  - ANUS, TNM CLASSIFICATION (2011)
  - ARGENTAFFIN, MESENTERIC CIRCULATION, SCLEROSIS (9151)
  - ARGENTAFFIN CELL, RECTUM, SURGERY (5912)
  - BILE DUCT, ANGIOGRAPHY, THORIUM DIOXIDE (2181)
  - BILE DUCT, RADIOLOGY (4526)*
  - BILE DUCT, THOROTRAST (4398)
  - BILIARY TRACT, WHIPPLE RESECTION (9193)
  - BROWN-PEARCE, LIVER, IMPLANTATION, RAT (1352)*
  - CARCINOGEN, LIVER, SEX FACTOR, AGE FACTOR, RAT (6057)*
  - CECUM, ABDOMINAL WALL, PROGNOSIS (8276)
  - CECUM, APPENDICITIS (3485)
  - CELL BIOCHEMISTRY, HYDROGEN ION TRANSPORT, OXIDATIVE PHOSPHORYLATION (1774)
  - CERVICAL ESOPHAGUS, TRANSPOSED STOMACH REPLACEMENT (1849)
  - CERVIX UTERI, JAUNDICE, HALOTHANE (6833)*

COLLOID, ANUS, RECTUM, MUCUS-SECRETING (5907)
COLON, ADENOMA, POLYP (4915)
COLON, EXTENSIVE, SURGERY (8971)
COLON, 5-FLUOROURACIL (3489)
COLON, GARDNER'S SYNDROME, LIVER (3486)
COLON, 1-B-D-ARABINOFURANOSYLCYTOSINE (7455)•
COLON, RECTUM, ANUS (7475)
COLON, RECTUM, POLYPS (8202)
COLON, RECTUM, HEPATIC INFUSION (2730)
COLON, RECTUM, JAMAICA (4284)
COLON, RECTUM, SEX, GENETICS, INCIDENCE (4263)•
COLON, RETROPERITONEAL, RADIOTHERAPY (7461)
COLON, SECOND-LOOK OPERATION, FLUOROURACIL THERAPY (3492)
COLON, SURGERY (2719)
COLON, SURGERY, ANTIBIOTIC (5118)
COLON, SURGERY, GERIATRICS (1981)
COLON, SURGERY, SUBCUTANEOUS EMPHYSEMA (8185)
COLON, VAGINAL METASTASIS (1248)
COLON PERFORATION, RADIOGRAPHY, COLOSTOMY (8201)
COLORECTAL, METASTASIS, LYMPH NODES (8196)
DETECTION, SIGMOIDOSCOPY (2499)
DIAGNOSIS, LAPAROTOMY, BENIGN LESION, CYTOLOGY (8709)•
DISSEMINATED, LIVER, INFUSION CHEMOTHERAPY, SURGICAL BASIS (3571)
DUODENAL BULB, SURGERY (5800)
DUODENUM, INFRAPAPILLARY, PARATHYROID ADENOMA (6621)
DUODENUM, POLYPOID, DIAGNOSIS TREATMENT (1891)
DUODENUM, PRIMARY TUMOR (1049)
EARLY, STOMACH, GASTROCAMERA (5819)
EHRLICH'S, IMMUNOLOGY, ASCITES, SPLEEN, MOUSE (2821)
ENZYME ASCITES (2302)
EPIDERMOID, ESOPHAGUS, SURGERY (4104)
ESOPHAGEAL, AFTER GASTRIC SURGERY (3336)
ESOPHAGEAL, GASTRIC, SURGERY (4117)
ESOPHAGEAL, RADIATION THERAPY (3315)
ESOPHAGEAL, ROTATORY IRRADIATION, PERFORATION, HEMORRHAGE (6580)•
ESOPHAGOGASTRIC JUNCTION, ESOPHAGOGASTROSTOMY (7360)
ESOPHAGUS, ACHALASIA OF CARDIA (3322)
ESOPHAGUS, BETEL CHEWING, CEYLON (6598)
ESOPHAGUS, CARDIA, OBSTRUCTION, DYSPHAGIA (0261)
ESOPHAGUS, CARDIOSPASM (1003)
ESOPHAGUS, EXCISION, SURGERY, DIAGNOSIS (0264)
ESOPHAGUS, GASTRIC SURGERY (4113)
ESOPHAGUS, HEMATOLOGY, SURVIVAL TIME, THERAPY, RADIATION (8791)•
ESOPHAGUS, RADIATION THERAPY, ESOPHAGOGASTRECTOMY (8083)
ESOPHAGUS, RADIOTHERAPY, SPLIT-COURSE (1825)•
ESOPHAGUS, STENOSIS, PERFORATION, SURGERY (4965)
ESOPHAGUS, SUBSTITUTION, ACID BURNS (4204)
ESOPHAGUS, SURGERY (2561)
ESOPHAGUS, SURGERY, DYSPHAGIA (0092)
ESOPHAGUS, SURGICAL PROBLEMS (2566)
ESOPHAGUS, X-RAY THERAPY (5746)
EXTRAHEPATIC BILE DUCT, HISTOLOGY, SURGERY (1495)
EXTRAHEPATIC BILE DUCT, RADIOLOGY (6138)
GALLBLADDER (4530)
GALLBLADDER, DIAGNOSIS (4024)
GALLBLADDER, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
GALLBLADDER, DIAGNOSIS, SURGERY (2185)
GALLBLADDER, EXTRAHEPATIC BILE DUCT (8402)
GALLBLADDER, GALLSTONE (3684)
GALLBLADDER, LIVER (4541)
GALLBLADDER, SURGERY (5309)
GASTRECTOMY, GASTRIC ULCER (1075)
GASTRIC, BENIGN POLYP (6622)
GASTRIC, DIAGNOSIS, FIBEROPTIC ENDOSCOPY, DIRECT VISION CYTOLOGY (0293)
GASTRIC, ENZYMES, PROGNOSIS (8087)•
GASTRIC, ESOPHAGUS, MOTILITY, SPASM (5790)
GASTRIC, FIBROMYOMA, BILLROTH-II-RESECTION, ULCER (4980)
GASTRIC, GASTRITIS (4163)
GASTRIC, GASTROCAMERA, MUCOSA (6537)
GASTRIC, GASTROSCOPY, CYTOLOGY (6546)
GASTRIC, HISTOLOGY (7344)
GASTRIC, TOTAL GASTRECTOMY (4600)
GASTRIC STUMP (2614)
GASTRIC STUMP, GASTROJEJUNOSTOMY, DUODENAL ULCER (0288)
GASTRIC STUMP, ULCER, GASTRECTOMY (4167)
GASTROINTESTINAL TRACT, HOSPITAL INCIDENCE (2241)
HEPATIC, AMINO ACID, ENZYME SYNTHESIS (3941)•
HEPATIC, BILE DUCT, HILUM, SURGERY (6825)
HEPATIC METASTASES, PARTIAL HEPATECTOMY (2076)
HEPATOCELLULAR, AUSTRALIA ANTIGEN, VIRAL HEPATITIS, POSTNECROTIC HEPATITIS (0547)
HEPATOCELLULAR, DNA-LIKE RNA, CYTOPLASM (8265)•
ILEUM (7421)
INTESTINE, THERAPY ETIOPATHOLOGY, HUMORAL FACTORS (0392)
JEJUNUM, RECURRENT GASTROINTESTINAL HEMORRHAGE (3426)
LARGE BOWEL, MAMMARY, RENAL, CHEMOTHERAPY (6708)
LARGE INTESTINE, COLON, HEPATIC FLEXURE, DUODENAL LOOP, CHANGE (3469)
LARGE INTESTINE, RESECTION, POLYPOSIS (2737)
LIVER (2058)
LIVER, ANGIOGRAPHY, SPLENOPORTOGRAPHY, ARTERIOGRAPHY (4952)

LIVER, CARBON TETRACHLORIDE, CIRRHOSIS; RAT (3543)•
LIVER, CIRRHOSIS, HEPATITIS, AFRICA (6027)
LIVER, DIAGNOSIS, ALPHA-FETOPROTEIN TEST, BANTU (0544)
LIVER, HEPATOBLASTOMA (7556)
LIVER, METASTASES, ULTRASONIC SCANNING, PARENCHYMAL DAMAGE (4892)•
LIVER, MOTOL VIRUS, LIVER PATHOLOGY, DIETHYLINTROSAMINE (2036)•
LIVER, VASCULAR ANATOMY (6322)
LIVER CELL, HISTOLOGIC CLASSIFICATION, INFANCY, CHILDHOOD (3588)
LIVER SARCOMA, THOROTRAST (9076)
LIVER SCANS, DIAGNOSIS (2034)•
LUNG, METASTASIS, LIVER (7558)
MALIGNANT, AMPULLA OF VATER, VON RECKLINGHAUSEN'S DISEASE (6726)
MEDULLARY, THYROID, DIARRHEA, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)
METASTATIC, LIVER (2041)
MICRO, CIRRHOSIS, ESOPHAGEAL VARICES, SURGERY, MORTALITY (4966)
NON-OPERABLE, COLONIC OBSTRUCTION, COLOSTOMY AVOIDANCE (3502)
OBSTRUCTIVE, COLON, CECOSTOMY (8182)
PANCREAS, BILE DUCT, DUODENAL, SECRETION (7221)•
PANCREAS, BIOPSY, DIAGNOSIS (1313)
PANCREAS, DIAGNOSIS, RETROPERITONEAL GAS STUDY (2023)
PANCREAS, EARLY DIAGNOSIS, SURGERY (8239)
PANCREAS, ECHOGRAPHY, PANCREATITIS (7216)•
PANCREAS, 5-FLUOROURACIL, TELECOBALT (5136)•
PANCREAS, HEAD, OBSTRUCTION, GASTRECTOMY, DUODENECTOMY (5955)
PANCREAS, PALLIATIVE SURGERY (4340)
PANCREAS, PANCREATITIS, CHRONIC, ACUTE, PSEUDOCYST, ABDOMINAL PAIN (5144)
PANCREAS, PANCREATODUODENECTOMY, SURGERY, BYPASS OPERATIONS (5953)
PANCREAS, STEATORRHEA, GLUTEN-FREE DIET (6739)
PARENCHYMATOUS, PANCREAS, PALLIATIVE SURGERY (1317)
PHARYNOESPHAGEAL DIVERTICULUM (1008)
PITUITARY GLAND, METASASIS TO LIVER AND BONES (2051)
POLYP, STOMACH, POLYPOGENESIS, MALIGNANT DEGENERATION (5785)
PRIMARY, APPENDIX, COLON (2703)
PRIMARY, DUODENUM (1898), (5000)
PRIMARY, DUODENUM, DIAGNOSIS, TREATMENT (1890)
PRIMARY, GALLBLADDER (4562), (7664)
PRIMARY, GALLBLADDER, CHOLELITHIASIS (2933)
PRIMARY, HEPATIC, CIRRHOSIS, HISTOPATHOLOGY (7524)•
PRIMARY, HEPATIC, CIRRHOSIS, LAPAROSCOPY, AUTOPSY (7538)•
PRIMARY, LIVER (4409)
PRIMARY, LIVER, CHILDREN (3570)
PRIMARY, LIVER, CIRRHOSIS (6806)
PRIMARY, LIVER, CIRRHOSIS, JAPAN (6789)
PRIMARY, LIVER, CIRRHOSIS, SURGERY (9151)•
PRIMARY, LIVER, RESECTION (6031)
PRIMARY, SECONDARY, METASTASIS, LIVER (4378)
PRIMARY HEPATIC, ASCITES, JAUNDICE (6828)
PRIMARY HEPATIC, PATHOLOGIC ANATOMY (4379)
PRIMARY MULTIPLE, SMALL INTESTINE (5872)
PRIMARY STUMP, ULCER, RESECTION (1073)
RECTOSIGMOID, IRRADIATION (1997)
RECTOSIGMOID, PREGNANCY (5924)
RECTOSIGMOID, SURGERY, UROGENITAL TRACT (1232)
RECTOSIGMOID, SURGICAL TECHNIQUE (1975)
RECTUM (7476)
RECTUM, AMPUTATION, PROGNOSIS (1236)
RECTUM, RADIOTHERAPY, MEGAVOLT THERAPY, RADIO-ACTIVE COBALT (5915)
RECTUM, SURGERY, ENDORECTAL RESECTION (8183)
RECTUM, SURGERY, POSTOPERATIVE (2739)
REGIONAL ENTERITIS (3715)
SIGMOID, PERIDIVERTICULITIS, STENOSIS (6703)
SMALL INTESTINE, DIAGNOSIS, MAN (0385)
SMALL INTESTINE, REGIONAL ENTERITIS (1960)
SMALL INTESTINE, SARCOMA (8149)
SMALL INTESTINE, SPINE (1162)
SQUAMOUS CELL, COLON, ADENOCANTHOMA (5905)
SQUAMOUS CELL, PHARYNGOESOPHAGEAL DIVERTICULUM (0265)
STOMACH, ACID PRDUCTION (5769)
STOMACH, DEATH (7377)
STOMACH, ESOPHAGEAL STENOSIS, PROSTHESIS (8060)
STOMACH, GASTRIC JUICE, LACTIC ACID (6613)•
STOMACH, HISTOGENESIS, DEVELOPMENT (1880)
STOMACH, HISTOPATHOLOGY, SECRETION (8086)•
STOMACH, METAPLASIA, INTESTINAL, COLUMBIA, MIGRANTS (3344)
STOMACH, MORPHOLOGY, SURGERY, LIFE EXPECTANCY (8127)
STOMACH, OBSTRUCTION, DUODENAL ULCER TUBERCULOSIS (6634)
STOMACH, POST-SURGERY FOLLOW-UP (2616)
STOMACH, RADIATION THERAPY (6625)
STOMACH, RADIOGRAPHY (6555)
STOMACH, SECRETION, ANTIBODY, ACID, ANEMIA (3363)
STOMACH, SQUAMOUS-CELL, ADENOSQUAMOUS-CELL (0280)
STOMACH, SQUAMOUS-CELL, LIVER METATASIS (0285)
STOMACH, SURGERY (4988), (4992), (6629)
STOMACH, SURGERY, GASTRECTOMY (5008)

- STOMACH, THROMBOCYTOPENIA PURPURA, GERIATRIC (1077)
- THORACIC ESOPHAGUS, LAPAROTOMY (1852)
- TRANSVERSE COLON, DESCENDING COLON (1968)*
- ULCERATIVE COLITIS (4315)

CARCINOSIS
- COLON, ULCERATIVE COLITIS (3515)

CARDIA
- CANCER, CYTOLOGY, DIAGNOSIS (4042)
- INCOMPETENCE, REFLUX ESOPHAGITIS, SURGERY (7306)
- SURGERY, OBSTRUCTION (7299)

CARDIOMEGALY
- AMOEBIC LIVER ABSCESS, BLOOD CIRCULATION (1545)

CARDIOSPASM
- CARCINOMA, ESOPHAGUS (1003)
- CHILDREN, SYMPTOMOLOGY, BRONCHOPULMONARY CONDITIONS (0243)
- ESOPHAGO-ESOPHAGEAL FISTULA (2562)

CAROTENE-BETA
- BLOOD, CLEARANCE, INTESTINAL MALABSORPTION, LIPIDS, PANCREATITIS, CELIAC DISEASE, ILEO-COLIC SHUNT, REGIONAL ENTERITIS, GASTRIC RESECTION, DIAGNOSIS (3276)

CASEIN
- HYDROLYSATE, STARVATION, L-SERINE DEHYDRATASE, LIVER (7120)*
- LIVER, SELENIUM (3216)

CATABOLISM
- PROTEIN, GASTROINTESTINAL TRACT, X-RAY, MICE (2538)

CATALASE
- LIVER, MICROBODY (3576)

CATECHOLAMINE
- ADRENALINE, NORADRENALINE, ISOPRENALINE, SMOOTH MUSCLE CONTRACTION, COLON, RELAXATION, ALPHA RECEPTORS, BETA RECEPTORS (5509)*
- CIRRHOSIS, RENAL FUNCTION, RENIN ACTIVITY (6126)
- EPINEPHRINE, AMINO ACID TRANSPORT, LIVER SLICES (5493)*
- EXCRETION, URINE, PEPTIC ULCER (2641)
- HEPATOCYTE, TRANSMEMBRANE POTENTIAL, NICOTINE (4782)
- JEJUNUM, TRANSMURAL STIMULATION (0727)*
- MOTILITY, SMALL INTESTINE, ILEUM, SMOOTH MUSCLE, ADRENALINE, NORADRENALINE, ADRENOCEPTORS (5517)*
- NORADRENALINE, HYPERTENSION, MESENTERIC ARTERY, RAT (6226)
- NOREPINEPHRINE, EPINEPHRINE, STOMACH, ULCER, VAGOTOMY (5020)*
- NOREPINEPHRINE, TYROSINE TRANSAMINASE, RAT (5591)*
- POTENTIATION, HEPATOXICITY, CARBON TETRACHLORIDE (0581)*
- RESERPINE, ADRENALINE, HISTAMINE, STOMACH, MUCOSA, RAT (0796)*

CATION
- DRUG TRANSPORT, INTESTINE, RAT (2328)
- SODIUM, CALCIUM, MAGNESIUM, ADENYL CYCLASE (6428)*

CECUM
- ANEROBIC, CULTURES, PATHOGEN-FREE MOUSE (6497)*
- BACTERIA, FATTY ACID, ANTIBIOTIC, RAT (6512)
- BILE ACID ABSORPTION, RAT (0765)*
- CANCER, MUCOSA (5943)
- CANCER, SURGERY (3483)
- CARCINOMA, ABDOMINAL WALL, PROGNOSIS (8276)
- CARCINOMA, APPENDICITIS (3485)
- CECAL-APPEDICULAR NEURONAL JUNCTION (3802)*
- COLON, PARASITE, GRANULOMA, SHISTOSOMIASIS (2250)*
- CONTAMINATION, RAT (4790)*
- DIVERTICULUM (4273)
- DIVERTICULUM, INNERVATION, RABBIT (0220)
- EROSION, HEMORRHAGE (2715)
- FIBERCOLONOSCOPE, ILEOCECAL VALVE (6559)
- GRANULOMA, INFLAMMATORY, DIAGNOSIS (0475)
- ILEOCECAL VALVE, ADENOCARCINOMA (0430)
- ILLUMINATION, ULTRASTRUCTURE, GLYCOPROTEINS (0025)
- INFILTRATE, CHOLECYSTITIS, DIAGNOSIS (1471)
- LEIOMYOSARCOMA (4291)
- MESENCHYMOMA (7465)
- MICROBIAL, FLORA, BETA-GLUCURONIDASE, N-HYDROXY-N-2-FLURENYL-ACETAMIDE (3230)
- PERFORATION, ADYNAMIC ILEUS, INTESTINAL DISTENSION (8194)
- PERFORATION, INFANT (1990)
- PERFORATION, PERITONITIS (1253)
- RECTUM, URINE, ROADRUNNER (6506)
- SOLITARY, ULCER, SURGERY (5902)
- SULPHATASE, GLUCURONIDASE, MICROBIAL HYDROLYSIS, RAT (3227)*
- SURGERY, MESOCAVAL SHUNT (3000)
- TENIA TONE, STIMULATION, INNERVATION GUINEA-PIG (0053)
- TYROSINE, DEGRADATION, RAT (1274)
- VOLVULUS (2745)
- VOLVULUS, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (8193)
- VOLVULUS, PATHOGENESIS, SURGERY (1382)
- VOLVULUS, SIGMOID COLON (4292)
- WALL, WATER TRANSPORT, RAT (4759)*

CELIAC AXIS
- ANGIOGRAPHY, LIVER, PANCREAS (4019)*
- CHRONIC STENOSIS, AORTOGRAPHY, SURGERY (8453)
- DISEASE, STEATORRHEA, JEJUNUM, MUCOSA (5085)
- EXTRINSIC STENOSIS, SURGERY, MOTILITY (8452)
- HYDATID CYSTS, LIVER, ARTERIOGRAPHY, CYSTECTOMY (4934)
- STENOSIS, DUODENOPANCREATECTOMY (9227)
- STENOSIS, LIGAMENT CONSTRICTION, AORTOGRAPHY, ANATOMOPATHOLOGY (9225)
- STENOSIS, SMALL INTESTINE, ENTERITIS (5069)
- STENOSIS, VISCERAL ANGIOGRAPHY, SURGERY (8451)
- VASCULARIZATION, PANCREAS, LIVER, COLON (5145)

CELIAC DISEASE
- ADOLESCENTS (0405)*
- BULLOUS PEMPHIGOID, CHILD (0416)
- CHRONIC ENTEROPATHY, IMMUNOLOGIC DEFICIENCY, CHILDREN (3442)*
- DEPEPTIDASE, DISACCHARIDASE, SMALL INTESTINE (8929)*
- DIABETES MELLITUS (0468)
- DIABETES MELLITUS, GLUTEN-FREE DIET (1217)
- DIAGNOSIS, ASSAY TECHNIQUE, ALKALINE PHOSPHATASE (3036)*
- GLUCOCORTICOIDS, STEROID (0702)
- GLUTEN, WHEAT, RYE, CHILDREN (2691)
- GLUTEN ANTIBODIES, IMMUNOGLOBULIN LEVEL, LYMPHOCYTE (0417)
- HYPOSPLENISM (1966)
- INTESTINAL PEPTIDASES, CHILDREN (1216)*
- INTESTINE, MALABSORPTION (4256)
- MALABSORPTION, GLUTEN SENSITIVITY, SMALL INTESTINE (1961)*
- OPHTHALMOPLEGIA, SENSORY-MOTOR NERVE DEGENERATION (3456)
- OSTEOMALACIA, DIAGNOSIS (6685)*
- PRECIPITIN DETECTION, AQUEOUS EXTRACTS OF FLOUR, CHILDREN (1965)
- PULMONARY DISEASE, TRANSFER DEFECT (2684)*
- SERUM-IMMUNOGLOBULINS, ADULT (0407)
- SERUM LEVEL, RED CELL FOLATE LEVEL, CHILD (3454)

CELIAC TRUNK
- FIBROSIS, PANCREATITIS (5160)

CELL
- ACINAR, PANCREAS, PENTAGASTRIN, RAT (8309)
- ACINAR, PANCREATITIS (8260)
- AUTOPHAGY, ATROPHY, GLYCOGEN (6774)*
- CANCER, CYTOLOGY, HISTOLOGY, STOMACH (3365)
- CHANG'S, LIVER, GLUTAMATE DEHYDROGENASE (2308)
- DAMAGE, LIVER, RAT, RABBIT (8339)
- ENDOCRINE, DUODENUM, ULTRASTRUCTURE (6284)*
- GROWTH INHIBITION, LIVER EXTRACT, MAN (7955)
- HEPATIC, CLASSES, NUCLEAR CLASSES, RELATIONSHIP, MICROCELL STUDY (3057)
- ISOLATED INTESTINAL, METABOLISM (7986)*
- LIVER, CARCINOMA, SPECIFIC GRAVITY (2093)
- LIVER, CHROMATIN, ETHIONINE (6345)
- LIVER, MORPHOLOGY, HYALOPLASM, PARACRYSTALLINE, GASTRIC, MITOCHONDRIA, ULCER (2815)
- MEMBRANE POTENTIAL, IONIC CONCENTRATIONS, PERFUSED LIVER (7838)
- METAMORPHOSIS, GASTRIC AMYLOIDOSIS (3346)
- MUCOUS, PARIETAL, CHIEF (6304)*
- NUCLEAR HISTONE SYNTHESIS, LIVER REGENERATION, RAT (7954)
- PROLIFERATION, ESOPHAGUS, STOMACH (3812)*
- REGENERATION, RECTUM, ULCERATIVE COLITIS, AUTORADIOGRAPHY (6731)*
- TRANSPORT, ENZYME, CALCIUM, INTESTINE (3118)

CELL CULTURE
- L929 CELLS, GROWTH, PARTIALLY HEPATECTOMIZED RAT SERA, RNA (0119)
- PARTIAL HEPATECTOMY, RADIOLOGY, PROTEIN SYNTHESIS, RAT (2462)
- TRACER TECHNIQUE, LIVER, RAT, PROTEIN (2463)

CELL DIVISION
- G-2 POPULATION CELL, KIDNEY, DUODENUM, MOUSE (2479)
- LIVER, PARENCHYMAL CELLS, REGENERATION, MOUSE (0327)

CELL EXTRUSION
- JEJUNUM, VILLI (0027)*

CELL PREPARATION
- FAT, CHOLERA ENTEROTOXIN, ANTITOXIN (4008)
- INTESTINAL EPITHELIAL, MICROVILLUS MEMBRANE, MOLECULAR STRUCTURE (2269)*
- LIVER, MECHANICAL PREPARATION, ENZYMATIC PREPARATION, METABOLIC ACTIVITY, RAT (0091)*
- LIVER NUCLEI, ISOLATION, LOW HEAVY METAL LEVEL (3065)
- NUCLEAR FRACTION, 65ZN UPTAKE, LIVER (2425)

CELLULAR REGENERATION
- PARTIAL HEPATECTOMY, FUNCTIONAL MORPHOLOGY (0003)*

CERCARIA
- PENETRATION, SKIN CHEMICALS (1547)

CEREBELLUM
- POSTERIOR, LESION, GASTRIC ULCER (2645)

CEROID
- DEPOSITION, SMALL INTESTINE MUSCULARIS, REGIONAL ENTERITIS, DIFFUSE MALABSORPTION, VITAMIN E (0400)

CERULOPLASMIN
- COPPER, METABOLISM, LIVER (0156)
- LIVER, SECRETION, COPPER (1702)*

CHAGAS DISEASE
- CHRONIC, MEGACOLON, MANOMETRIC STUDY, ESOPHAGUS (0987)
- MEGACOLON, MEGASIGMOID, MEGARECTUM, MEGAESOPHAGUS (3769)*

CHEMICAL CARCINOGEN
- ACETYLAMINOFLUORENE, PHENOBARBITAL, LIVER (4396)
- LIVER, RIBONUCLEIC ACID, RADIOACTIVE COMPOUNDS (1776)

CHIEF CELLS
- GASTRIC MUCOSA, ULTRASTRUCTURE, RABBIT (0012)*

CHILDREN
- ELECTROLYTE BALANCE, GASTRIC ACID EXCRETION, CALCIUM (2386)

CHLORAMPHENICOL
- METAMPICILLIN, CLINICAL COMPARISON, TYPHOID FEVER (2995)

CHLOROFORM
- TOXICITY, LIVER, ENZYME (3607)

CHLORORGANIC POISON
- PROLONGED EXPOSURE, GASTRIC FUNCTION SECRETION, PROPHYLAXIS (0328)

- CHOLAGOGUE
  - XYLITE, CHOLELITHIASIS, THERAPY (7672)
- CHOLANGIOGRAM
  - CYSTIC DUCT (2505)*
- CHOLANGIOGRAPHY
  - AMPULLA OF VATER, DISEASE, DIAGNOSIS WIRSUNG'S DUCT (0218)
  - BARIUM SULFATE, GALLBLADDER, SPHINCTER OF ODDI (4036)
  - BILE DUCT, DUODENUM, SPHINCTER OF ODDI, MOTOR ACTIVITY, PANCREATITIS (2914)
  - BILE DUCT, GALLBLADDER BIOPSY, JAUNDICE (6575)
  - BILIARY TRACT, MAN (0945)*
  - BILIARY TRACT, RADIOLOGY, DIAGNOSIS, PATHOLOGY, DIAGNOSTIC TECHNIQUES (1806)*
  - BILIARY TRACT DISEASE, DIAGNOSIS (8746)
  - CERULEIN, GUINEA PIG, CONTRAST MEDIA (2519)
  - CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, GALLBLADDER (7215)*
  - CHOLECYSTO-, BILIARY TRACT, DRIP INFUSION, INTRAVENOUS (0221)
  - CHOLECYSTO-, BILIVISTAN, TOLERANCE, CHOLELITHIASIS (4043)
  - CHOLECYSTO-, DRIP INFUSION (0220)
  - CHOLECYSTO-, INFUSION (0207)
  - CHOLECYSTO-, INTRAVENOUS, BILIVISTAN (4050)
  - CONTRAINDICATIONS, SURGERY (4048)
  - CYSTIC DUCT, PROCEDURE (2505)*
  - DIAGNOSTIC PROCEDURE, GALLBLADDER, GALLSTONE (8018)
  - GALLBLADDER, BILIARY TRACT (1819)
  - HEPATIC REGENERATION, SCINTILLATION SCANNING (3301)
  - INFUSION (1824)
  - INFUSION, CONTRAST MATERIAL, PLASMA EXPANDERS, BIOCHEMISTRY (0139)
  - INFUSION CHOLECYSTO-, CHRONIC LIVER DISEASE, CIRRHOSIS, HEPATITIS (0184)*
  - INFUSION CHOLECYSTO-, IMPROVED VISUALIZATION, OPTIMUM CONTRAST MEDIA (0180)*
  - INTRAOPERATIONAL (0684)
  - INTRAVENOUS (3295)
  - INTRAVENOUS, DRIP INFUSION TECHNIQUE, BILIGRAFIN FORTE (8036)
  - INTRAVENOUS, SORBITOL (4022)
  - LIVER, HEPATITIS, SURGERY (4078)
  - OPERATION, BILE DUCT (1366)
  - OPERATIVE, CHOLEDOCHOPANCREATIC REFLUX, CHRONIC CHOLECYSTITIS (8041)
  - OPERATIVE, DIAGNOSIS, LIVER ABSCESS (2530)
  - OPERATIVE, INTERPRETATION (0673)
  - OPERATIVE, METHOD, CHOLECYSTECTOMY (4550)
  - PERCUTANEOUS, TRANSHEPATIC (0209)
  - PERCUTANEOUS, TRANSHEPATIC, COMPLICATIONS (3306)
  - PERCUTANEOUS, TRANSHEPATIC, JAUNDICE, LIVER DECOMPRESSION (0957)
  - PERFUSION, GLUCOSE, SORBITOL (4023)
  - POSTOPERATIVE, INDICATIONS, ADVANTAGES (0216)
  - SCLEROSING CHOLANGITIS, BILE DUCT (4556)
  - SLOW PERFUSION TECHNIQUE, INDICATION (3310)
  - SURGERY, BILE DUCT, CHOLEDOCHOTOMY (2168)
  - SURGERY, DIAGNOSITIC ERROR (0965)
  - TRANSHEPATIC (2180)
- CHOLANGIOMA
  - BENIGN, METASTASIS, DIAGNOSIS (0952)*
  - CYSTIC, BENIGN, ANGIOGRAPHY, HAMARTOMA (6798)
- CHOLANGITIS
  - ACUTE, EARLY DIAGNOSIS, BACTEREMIA, LIVER ABSCESS (8419)
  - ACUTE SUPPURATIVE, AMPULLARY FIBROSIS (9172)
  - HEPATITIS, BIOPSY, INFANCY, CHOLESTASIS (2084)*
  - ICTERUS, ANEMIA, LIVER (4919)
  - IDIOPATHIC, BILIARY TRACT, TETRACYCLINE THERAPY (2927)
  - LIVER, OBSTRUCTION, BILE DUCT (2924)
  - MULTIFOCAL FIBROMATOSIS, XANTHOFIBROGRANULOMA, LIVER, BILE DUCT, ESOPHAGUS (5326)
  - OBLITERATING, SCLEROSING, LIVER (2048)
  - PRIMARY (2936)
  - PRIMARY SCLEROSING, STEROID (8401)
  - RENAL INSUFFICIENCY, LIVER INVOLVEMENT (6042)
  - SCLEROSING, INTRAHEPATIC BILIARY CANALICULI, CHRONIC JAUNDICE, CHOLANGIOGRAPHY (8605)
  - SCLEROSING, RADIOGRAPHY, BILE DUCT (4526)*
  - SCLEROSIS, JAUNDICE, BILE (5307)
  - SURGERY, GALLBLADDER, DUODENUM (2347)
- CHOLECYSTECTOMY
  - ANGINA PECTORIS, POSTOPERATIVE, ELECTROCARDIOGRAM (6924)
  - BILE FLOW, COMPOSITION, RESPONSE TO FOOD (2907)*
  - BILIARY, ALCOHOLIC, VASCULAR, PANCREATITIS, SERUM AMYLASE (8253)
  - CHOLANGIOGRAPHY, METHOD (4550)
  - CHOLECYSTITIS, STENOSIS, ANASTOMOSIS (2920)
  - CHOLELITHIASIS, DIAGNOSIS, TIME (2735)
  - CHOLELITHIASIS, DUODENUM, ULCER (7669)
  - CHOLESTEROL STONE, CHOLELITHIASIS (6925)
  - CLOSTRIDIAL INFECTION (3669)
  - ESOPHAGEAL SYMPTOMS, EFFECT OF SURGERY (1462)
  - EXTRAHEPATIC BILIARY PATHWAYS, METAMPICILLIN (4535)
  - HEPATIC ARTERY ANEURYSM, OBSTRUCTIVE JAUNDICE, ACUTE HEPATITIS (8414)
  - LIPID METABOLISM, FIBRINOLYSIS, BILE DUCT DRAINAGE (0578)
  - MORTALITY, MAN (0785)*
  - POSTOPERATIVE, POLYUNSATURATED CARBON ACIDS, SERUM (0662)
  - RESECTION, ADHESIONS, ABSCESS, APPENDECTOMY (6951)

- CHOLECYSTITIS
  - ACALCULOSIS, GALLBLADDER, SURGERY (2169)
  - ACUTE, APPENDICULAR MUCOCELE, DIAGNOSIS, SURGERY (2735)
  - ACUTE, BILE DUCT PHYSIOPATHOLOGY (4260)
  - ACUTE CHOLECYSTOPANCREATITIS, LIVER FUNCTION (5973)
  - ACUTE, CHOLECYSTOSTOMY, GALLBLADDER, NECROSIS (7673)
  - ACUTE, CHRONIC (4532)
  - ACUTE, COPPER, CERULOPLASMIN, KIDNEY, SPLEEN, LIVER, BLOOD (2972)
  - ACUTE, ELDERLY (0674)
  - ACUTE, EMERGENCY CHOLECYSTECTOMY, RADIOLOGY, MORTALITY (9183)
  - ACUTE, GALLBLADDER, SURGERY (5305)
  - ACUTE, GALLBLADDER, THERAPY (4539)
  - ACUTE, JAUNDICE (0680)
  - ACUTE, LIVER, SURGERY, PANCREATIC ENZYME, JAUNDICE, LIVER BIOPSY (5324)
  - ACUTE, LIVER PROTEIN, ELECTROPHORESIS (6154)
  - ACUTE, NONCALCULOUS, POSTOPERATIVE (6134)
  - ACUTE, SERUM SIALIC ACID (6140)
  - ACUTE, SGOT, COMMON DUCT STONES (7651)•
  - ACUTE, SURGERY (4555), (6141), (7666)
  - ACUTE, TREATMENT (2926)
  - ACUTE, TREATMENT, GALLSTONE (2170)
  - ACUTE, TREATMENT, SURGERY (6142)
  - ACUTE EMPHYSEMATOUS, PENICILLIN, SURGERY (7663)
  - ADRENALS, SURGERY, OBSTRUCTIVE JAUNDICE (2910)
  - ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
  - BILE, BENZOHEXONIUM (7671)
  - BILE, PROTEIN, DIAGNOSIS (2915)
  - CECUM INFILTRATE, DIAGNOSIS (1471)
  - CHOLECYSTOLITHIASIS, CIRRHOSIS ETIOLOGY (0653)
  - CHOLEDOCHODUODENOSTOMY, ANASTOMOSIS (1483)
  - CHOLELITHIASIS, MALE (6918)
  - CHOLELITHIASIS, VAGAL STASIS, VAGOTOMY DOG (8416)
  - CHRONIC, ATROPINE, GALLBLADDER, MOTOR FUNCTION (2918)
  - CHRONIC, DUBIN-JOHNSON SYNDROME, HEPATITIS, CHOLELITHIASIS (7739)
  - CHRONIC, OPERATIVE CHOLANGIOGRAPHY, CHOLEDOCHOPANCREATIC REFLUX (8041)
  - EMPHYSEMATOUS, BACTERIA (4554)
  - EPIDEMIOLOGY, GALLSTONES, CHINA (4564)
  - EXPERIMENTAL, TRACE ELEMENT, BLOOD, ORGAN, TISSUE (2913)
  - GALLBLADDER, CHOLELITHIASIS, CARCINOMA (2933)
  - GALLBLADDER EMPHYSEMA, RADIOLOGY, CLINICAL FEATURES (8399)
  - GASTRITIS, HEPATITIS, RADIOLOGY (2206)
  - HEMOBILIA, HEMOCHOLECYST (3665)
  - HEPATITIS, BILE ACID, SPECTROPHOTOMETRY (2461)
  - LITHIASIS, CIRRHOSIS, LIVER PARENCHYMA, HYPOKINESIA (5302)
  - MORPHOLOGY, ANATOMOPATHOLOGY (7661)
  - NONCALCULOUS, ACUTE, POST-SURGICAL, TRAUMA (9180)
  - PANCREATITIS, PERICARDITIS (3689)
  - PNEUMO-, GANGRENOUS, GALLBLADDER GAS, GANGRENE (3678)
  - POSTTRAUMATIC, YOUNG MALES (3691)
  - RADIOLOGY, GALLBLADDER, DIAGNOSIS (5715)
  - SURGERY (2925)
  - SURGERY, DUODENAL ULCER, GASTRIC ULCER, DIAGNOSIS, OPISTHORCHOSIS (3009)
  - ULCER, HEMORRHAGE (3668)
  - WATER BALANCE, ELECTROLYTE BALANCE, SURGERY (8410)
- CHOLECYSTOANGIOCHOLITIS
  - LIVER FUNCTION, OXYGEN EFFECT (1374)
- CHOLECYSTOCHOLANGIOGRAPHY
  - CONTRAST MEDIA, CHOLECYSTITIS, CHOLELITHIASIS (7290)
- CHOLECYSTODUODENOSTOMY
  - CHOLECYSTECTOMY, CHOLECYSTODUODENOSTOMY, BILE DUCT (7670)
  - LIVER, PANCREAS, DUODENUM, BILE DUCT (7676)
- CHOLECYSTO-GASTROSTOMY
  - BILE DUCT, ULCER, PYLORIC ANTRUM, CHOLANGIOGRAPHY (6667)
- CHOLECYSTOGRAPHY
  - CHOLANGIO-, INTRAVENOUS, BILIVISTAN (4050)
  - CHOLANGIO-, I.V., SORBITOL (4022)
  - CHOLECYSTOKININ, HORMONE, GALLBLADDER CONTRACTION (1480)
  - CONTRAST MEDIA (3279)
  - GALLBLADDER (1822)
  - GALLBLADDER, DIAGNOSIS (4087)
  - INFUSION (1824)
  - PRIFINIUM BR, GALLBLADDER (3900)
  - SLOW PERFUSION TECHNIQUE, INDICATION (3310)
- CHOLECYSTOKININ
  - ACID, SECRETION, STOMACH (2374)•
  - CHOLECYSTOGRAPHY, HORMONE, GALLBLADDER CONTRACTION (1480)
  - GALLBLADDER, RADIOLOGY (1357)
  - PANCREOZYMIN, GASTRIN, HORMONES, OLIGOPEPTIDES (6333)
  - PANCREOZYMIN, POLYPEPTIDE, ENTEROGASTRONE (7095)•
  - PANCREOZYMIN, RECENT DEVELOPMENTS (3232)
  - STIMULATION, HISTIDINE DECARBOXYLASE, STOMACH, MUCOSA (6397)•
  - STOMACH, EMPTYING, SECRETION, EFFECT (6379)•
  - VAGOTOMY, PRESSURES, GALLBLADDER, DUODENUM, CAT (1649)•
- CHOLECYSTOLITHIASIS
  - ANGINA PECTORIS, MYOCARDIAL ISCHEMIA (6924)
  - CHOLESTEROL, SODIUM DEHYDROCHOLATE, CLOFIBRATE, CHOLESTYRAMINE (6911)•
  - CHOLINESTERASE, PROTEIN METABOLISM (6565)

  - GALLBLADDER, CHOLELITHIASIS, CHOLECYSTITIS (4564)
  - METABOLIC DISORDERS, DIABETIC (6923)
  - MUCOSAL HYPERPLASIA, GALLBLADDER, SOLITARY CALCULI (1458)*
  - OBSTRUCTIVE JAUNDICE, BILIARY-DUODENAL FISTULA, REFLUX (6547)
  - PANCREATITIS, ACUTE, DELIVERY, FATTY NECROSIS (6751)
  - SINGLE STONE, MULTIPLE CALCULI, LIVER DAMAGE (6925)
  - SURGERY, CHOLECYSTECTOMY, CHOLEDOCHOTOMY (6912)
- CHOLECYSTOSIS
  - ANGIOGRAPHY, HYPERPLASIA (3663)*
- CHOLEDOCHODUODENOSTOMY
  - ATRESIA, CONGENITAL (1487)
  - CHOLECYSTITIS, ANASTOMOSIS (1483)
  - GALLBLADDER (4546)
  - SPHINCTEROTOMY, COMPARISON, PAPILLOSTENOSIS (0375)
  - SUPRADUODENAL, AMPULLOSTOMY (4054)
- CHOLEDOCHOJEJUNOSTOMY
  - DOG, GASTRIC SECRETION, HISTAMINE, ACIDITY (2387)
- CHOLEDOCHOLITHIASIS
  - BILIARY TRACT SURGERY, BILE DUCT CANCER, SOUTH VIETNAM (8413)
  - ETIOLOGY, DIAGNOSIS, CHILDREN (8415)
  - EXTRAPERITONEAL PROCEDURE (8418)
  - GALLBLADDER, GALLSTONES, DIET (8400)
  - GALLBLADDER CYTOCHEMISTRY, HISTOLOGY, CHOLEDOCHOLITHIASIS (8406)
  - GASTRECTOMY, DUODENAL ULCER, BILLROTH II (9199)
  - LIVER CELL NECROSIS, GRANULOCYTE, INFILTRATION, SURGERY (8298)
  - SPONTANEOUS RUPTURE, GALLBLADDER, CHOLECYSTECTOMY (8417)
- CHOLEDOCHOLITHOTOMY
  - OPERATIVE BILIARY ENDOSCOPY, FLEXIBLE CHOLEDOCHOSCOPE (2502)*
- CHOLEDOCHOSTOMY
  - COMMON BILE DUCT T-TUBE, MAN (1503)*
- CHOLEDOCHOTOMY
  - DIAPHRAGM, THORACIC FISTULA, RADIOLOGY (9186)
  - SPHINCTER OF ODDI, CHOLANGIOGRAPHY (2168)
- CHOLEDOCHUS
  - ATRESIA, CHOLEDOCHODUODENOSTOMY (1487)
  - END-TO-END ANASTOMOSIS, MICROSURGERY, DOG (8404)
  - GIGANTIC CYST (4558)
  - GALLSTONE, GALLBLADDER, CONGENITAL ABSCENCE (1473)
  - IDIOPATHIC DILATATION (4561)
  - RUPTURE, OBTUSE ABDOMINAL TRAUMA (4529)
  - STENOSIS, CALCULOSIS, ODDITIS (1488)
  - SUTURES, CONSTRICTION, AUTOPLASTY (4547)
- CHOLELITHIASIS
  - ACUTE PANCREATITIS, EARLY STAGE, SURGERY (9029)
  - BABOON, MULTIPLE CALCULI, EXPERIMENTAL MODEL (1455)*
  - BILE ACID, CHOLESTYRAMINE, HAMSTER, MAN (1770)
  - BILE CHOLESTEROL, GALLSTONE FORMATION, LIPID METABOLISM, CIRRHOSIS (8607)*
  - BILE FLOW RATE, HEPATIC ULTRASTRUCTURE, CANALICULI (0820)*
  - BILIARY PERITONITIS, PANCREATICO-BILIARY REFLUX, BILIARY HYPERTENSION (9197)
  - CHOLECYSTANGIOGRAPHY, BILIVISTAN, TOLERANCE (9043)
  - CHOLECYSTECTOMY, DIAGNOSIS, TIME (2909)
  - CHOLECYSTITIS, CIRRHOSIS, ETIOLOGY (0653)
  - DIAGNOSIS, SURGERY (7225)
  - DIET, FORMATION, THERAPY (1690)
  - DIHYDROCHOLESTEROL-INDUCED, BILIARY MUCOUS SUBSTANCES, HEXOSAMINE, RABBITS (1457)*
  - ETIOLOGY, ORIENTATION, THERAPY (1489)
  - EXPERIMENTAL, BABOON (1455)*
  - FLOATING BILE STONES, BILE VISCOSITY, GALLBLADDER CONTRACTION (9189)
  - GALLBLADDER, CARCINOMA, CHOLECYSTITIS (2933)
  - GALLBLADDER, CHOLECYSTITIS, CHOLECYSTOLITHIASIS (4564)
  - GALLBLADDER, MUCUS MEMBRANE CHANGES (2175)
  - GALLBLADDER, OBSTRUCTION (4542)
  - GALLBLADDER, RUPTURE, FISTULA (1486)
  - HEMORRHAGE (3668)
  - INCIDENCE, SURGERY, FACILITIES (2165)
  - INTESTINAL OBSTRUCTION, SYNDROME (7428)
  - LIVER ABSCESS (4437)
  - LIVER FUNCTION, PREOPERATIVE EVALUATION (0686)
  - LIVER PARENCHYMA PATHOLOGY, METABOLISM (4531)
  - MECHANICAL JAUNDICE, PERFORATION, TREATMENT, INFANT (0682)
  - MINERAL WATER THERAPY (4528)
  - MYATONIA DYSTROPHICA, CONGENITAL (1481)
  - OPERATIVE CHOLANGIOGRAPHY, INTRAHEPATIC, BILE DUCT STENOSIS, CHOLANGITIS (8783)
  - PREGNANCY, CHOLESTEROL METABOLISM (1459)*
  - SOLITARY OCCLUSIVE STONE, GALLBLADDER NECK, RADIOGRAPHY (9190)
  - SURGERY, EXTRAHEPATIC BILE DUCT, MORTALITY RATE (9182)
  - SURGICAL TREATMENT (3671)
  - SYMPTOMLESS GALLSTONE, OPERATIVE RADIOLOGY, OPERATIVE MANOMETRY (9198)
  - XYLITE, THERAPY (7672)
- CHOLERA
  - ACUTE, CONVALESCENCE, INDICATOR DILUTION STUDY (9201)*
  - ANTIBIOTIC, DIARRHEA, VIBRIO (4584)
  - ANTIBODY, IMMUNIZATION, SERUM (4577)*
  - ANTIGEN, IMMUNOLOGY, RAT FOOT EDEMA MODEL (6175)
  - ANTITOXIC IMMUNITY, ILEUM (4632)
  - ASIATIC, INTESTINAL MICROFLORA, CHILDREN (2001)
  - BLOOD ANTIBODY, INTESTINAL INFECTION (0929)

  CARRIER, EPIDEMIOLOGY (7697)
  CHOLERAGEN, DIARRHEA, CHOLERAGENOID, ANTIGEN (4004)
  DIARRHEA, ANTIBODY, SENSITIVITY, 2-MERCAPTOETHANOL (4574)•
  DIARRHEA, ILEAL RESECTION, CHOLESTYRAMINE (7743)
  DIARRHEA, TREATMENT, CHILDREN (6180)
  DISACCHARIDE LOSS (2948)
  EL TOR VIBRIO, INTESTINE, COPROANTIBODY (4133)
  ENTEROTOXIN, ANTITOXIN, FAT CELLS (4008)
  ENTEROTOXIN, PERMEABILITY FACTOR, MEDIA (3998)
  ENTEROTOXIN, PERMEABILITY-FREE (3861)
  ENTEROTOXIN, PURIFICATION, ASSAY (3999)
  EPIDEMIOLOGY, FAMILY CONTACTS, GASTROINTESTINAL SYMPTOMS (4568)•
  EPIDEMIOLOGY, SEROLOGY (4586)
  EPIDEMIOLOGY, TREATMENT, PREVENTION (0342)
  ETIOLOGY, ANTIGEN, PROTEIN, IMMUNOLOGY (5107)
  EXOTOXIN, CYCLOHEXIMIDE, SMALL INTESTINE, JEJUNAL SECRETION (6158)•
  EXOTOXIN, PURIFICATION, AI COMPOUND GEL (4007)
  EXOTOXIN, SODIUM FLUXES, CYCLOHEXIMIDE (6942)•
  FECES, MICROFLORA, LARGE INTESTINE (2192)•
  FOWL, BACTERIA, IMMUNOLOGY (5363)
  IMMUNITY, EXO-ENTEROTOXIN (6157)•
  IMMUNOLOGY, BACTERIA, FOWL (5362)
  IMMUNOLOGY, VACCINE, FOWL (5361)
  IMMUNIZATION, OGAWA VACCINE, INABA VACCINE, INABA ANTIGEN (4570)•
  IMMUNIZATION, SUCKLING MICE, BREAST MILK (4576)•
  IMMUNOGLOBULIN, ANTIBODY ACTIVITY, JEJUNUM, SERUM, RADIOIMMUNODIFFUSION (4572)•
  IMMUNOGLOBULIN, SMALL INTESTINE, ANTIBODY ACTIVITY, STOOL, ULTRACENTRIFUGATION, COLUMN CHROMATOGRAPHY (4573)•
  INFECTION, PROTECTIVE BACTERIAL SUBSTANCES (4006)
  INTESTINAL FLUID, ELECTROLYTE TRANSPORT, MARKER PERFUSION TECHNIQUE (1213)•
  ISOLATED JEJUNAL SEGMENT, DIARRHEA, INTESTINAL FLUID ACCUMULATION (0918)
  LIVER, CIRRHOSIS, ALCOHOL (2139)
  ORAL THERAPY, PAKISTAN (6973)
  PANCREAS, PEPTIDE-SECRETION (5958)
  PANCREAS, TUMOR, ISLET CELL (6231)
  PROPHYLACTIC IMMUNITY (4601)
  SERUM, TEST, ILEAL LOOP, SKIN TEST (3706)•
  SMALL BOWEL, INDICATOR DILUTION STUDY (8928)•
  SMALL INTESTINE, MICROFLORA, LARGE INTESTINE (4587)
  SMALL INTESTINE, MICROFLORA, VIBRIOS (2193)•
  SMALL INTESTINE, RABBIT (5626)
  STREPTOMYCIN-DEPENDENT VIBRIO (3763)
  TOXIN, ELECTROPHORETIC MOBILITY, FORMALIN (6514)
  TOXIN, PROPERTIES, PURIFICATION (3997)
  TREATMENT, STREPTOMYCIN, RELAPSE (3330)
  VACCINE, BIOASSAY, CHINCHILLA (4005)
  VASCULAR PERMEABILITY FACTOR, NEUTRALIZATION (3996)
  VIBRIO, ANTIGENS (7723)
  VIBRIO, ENTEROTOXIN, BIOCHEMISTRY (6513)
  VIBRIO CHOLERAE, SMALL INTESTINE, MORPHOLOGY, MICROSCOPY, DOG (3416)•
  VIBRIO CHOLERAE, TETRACYCLINE THERAPY, DIARRHEA, IMMUNIZATION, ANTITOXIN TITER, ANTIPERMEABILITY FACTOR (4571)•
  VIBRIO ENDOTOXINS, LIVER MITOCHONDRIA, KREBS CYCLE INTERMEDIATES (7978)
  VIRUS, GAMMA RAY INACTIVATION, HOG (6183)
  WATER LOSS, ELECTROLYTE LOSS, INFANT, CHILDREN (3754)
CHOLERESIS
  BILIRUBIN, CHOLERETICS, SODIUM DEHYDROCHOLATE (6429)•
  DRUG-STIMULATED, EXCRETION, BILE ACID, LIPIDS (8307)
  INDAZOLE DERIVATIVES, PHARMACODYNAMICS, RAT (8675)
CHOLERETIC AGENT
  BILE, GUINEA PIG, HYDROXY ACID (2467)
  BILE ACID, BILE SALT, SECRETION (2911)
  CHOLECYSTOKININ, GASTRIN II, CERULEIN (8619)•
  HEPATOBILIARY INSUFFICIENCY, TREATMENT (0663)
CHOLESTASIS
  BILE DUCT, GALLBLADDER, LIVER (4420)
  BILE DUCT LIGATION, RAT, MICROSOMAL BIOTRANSFORMATION, LIVER (2908)•
  EXTRAHEPATIC, LIPIDS, LIVER, SERUM, JAUNDICE (9081)
  HEPATOCYTE, CHOLESTEROL HYDROXYLATION, INTRAHEPATIC OBSTRUCTION (0555)
  INFECTIOUS HEPATITIS, FUNCTIONAL CLEARANCE, DIAGNOSIS, DYE TEST (2878)
  INTRAHEPATIC, 6-MERCAPTOPURINE (2186)
  INTRAHEPATIC, RECURRENT, PREGNANCY (4439)
  JAUNDICE, EXTRAHEPATIC BILIARY OBSTRUCTION (7652)•
  LIVER, HEPATOSIS, TREATMENT (8290)
  LIVER, THERAPY (8289)
  LIVER INJURY, PLASMA LIPID, BILIRUBIN, ENZYME (4472)
  METABOLIC EFFECTS, RATS (0058)•
  PATHOPHYSIOLOGY (3694)
  PROTEIN, PREGNANCY, ICTERUS (4426)
  SERUM BILIRUBIN, INTRACELLULAR GRANULES, EXTRACELLULAR THROMBI (7532)•
  THIABENDAZOLE, LIVER (4428)
  ULCERATIVE COLITIS (8216)
CHOLESTEROL
  ABSORPTION, SMALL INTESTINE (3096)•

  BILE, CHOLIC ACID, METABOLISM (8610)*
  BIOSYNTHESIS, FEEDING, HEPATIC BIOSYNTHESIS, IRRADIATION, RAT (0827)*
  BIOSYNTHESIS, 4-ALPHA-METHYL STEROL, LIVER MICROSOMAL OXIDATION (8654)
  BIOSYNTHESIS, INHIBITOR (8644)
  BIOSYNTHESIS, OXIDATION OF 4, 4-DIMETHYL STEROL, LIVER MICROSOME (8649)
  BIOSYNTHESIS, 3-HYDROXY-3-METHYLGLUTARATE, MEVALONIC ACID (6426)*
  CHYLOMICRONS, METABOLISM, LIVER, RAT (0341)
  EXCRETION, SMALL INTESTINE, ILEUM, BYPASS PROCEDURE (2344)*
  GENESIS, REGULATION, UBIQUINONE, LIVER (3205)
  HEPATIC SYNTHESIS, FAMILIAL HYPERCHOLESTEROLEMIA, DIETARY EFFECT (0541)
  HEPATITIS, HYPERLIPIDEMIA, SERUM TRIGLYCERIDES (0618)
  HYPERCHOLESTEROLEMIA, PARTIAL ILEAL BY-PASS (1176)
  LIVER, CANCER, MOUSE (8276)
  LIVER, METABOLISM, ASCORBIC ACID (2439)
  LIVER, SYNTHESIS, SQUALENE (3223)
  LIVER FUNCTION, BILIRUBIN, ALKALINE PHOSPHATASE, CONTRAST MEDIA (2465)
  LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO BLOOD RATIO (2164)*
  METABOLISM, ABSORPTION (8565)
  METABOLISM, LECITHIN, BILE SALT (1698)*
  PLASMA, UNSATURATED FAT, DIETARY FACTOR (6352)*
  SMALL INTESTINE, DIGESTION, ABSORPTION (0917)
  STORAGE DISEASE, ULTRASTRUCTURE (0358)*
  SYNTHESIS, GALLBLADDER, LIVER, ILEUM, GUINEA PIG (6463)
  SYNTHESIS, LIVER, THIOLS (7141)*
CHOLIANGIOGRAPHY
  PERCUTANEOUS, TRANSHEPATIC, BILIARY TRACT DAMAGE (1816)
CHOLINE
  DEFICIENCY, BIOSYNTHESIS, PHOSPHATIDYL CHOLINE (7962)
  DEFICIENCY, FATTY LIVER, LIPOPROTEIN STRUCTURE (2864)
  DEGRADATION, ANTIBIOTICS, COPROPHAGY (7991)*
  FATTY LIVER, PREVENTION, MYOINOSITOL (6777)*
  LYSOPHOSPHATIDYCHOLINE, INCORPORATION, PHOSPHOLIPIDS, LIVER SLICES, RAT (2434)
CHOLINERGIC
  ACETYLCHOLINE, ILEUM, BLOOD (6498)*
  METOCHLOPRAMIDE, ANTI-EMETIC, GASTROINTESTINAL TRACT (1660)
CHOLINESTERASE
  LIVER, SERUM, CHOLELITHIASIS (6565)
  SERUM, HEPATITIS, HEPATIC COMA (3633)
CHROMAFFIN SYSTEM
  FUNCTION, EXPLORATION, SMALL INTESTINE (0922)
CHROMATOGRAPHY
  CARBON TETRACHLORIDE POISONING, LIVER MUCOPOLYSACCHARIDE SYNTHESIS, PASSIVE BINDING (1715)*
  GAS, MASS SPECTOMETRY, STEROIDS (6445)*
  METABOLISM, LIVER (2441)
CHROMOSOME
  ABERRATIONS, LIVER CELLS, FREE RADICAL REACTION INHIBITORS, MICE (3071)
  ABERRATIONS, ULCERATIVE COLITIS (3509)*
CICATRIX
  CAUSTIC STENOSIS, CANCER, ESOPHAGUS (0246)
  ESOPHAGUS, CANCER (1830)
  STENOSIS, ESOPHAGEAL TUMOR (4101)
CIRCULATION
  ABDOMINAL SPLANCHNIC ARTERIES, COMMUNICATION, OCCLUSION (6953)
  ACUTE GI BLEEDING, CENTRAL VENOUS PRESSURE (8425)*
  ACUTE MESENTERIC INFARCT, RESECTION (7684)*
  ALPHA-FETOPROTEIN, HEPATIC PRIMARY CARCINOMA, HUMAN (7530)*
  ANGIOGRAPHY, LIVER, TRANSPLANT (2466)
  ANOXEMIA, HEPATIC INSUFFICIENCY, PROTHROMBIN, SHOCK, COAGULATION, NEWBORN INFANTS (5288)
  ANTICOAGULANTS, MERCUMAR, ILEUS, HEMATOMA, HEMATURIA, BOWEL WALL (5862)
  AORTA, RIGHT CORONARY ARTERY, BILIARY TRACT DISTENTION (7665)
  ARTERIAL, DESATURATION, CIRRHOSIS (2146)
  ARTERIOMESENTERIC OCCLUSION, ULCER, PAPILLA, CHILD, DIFFERENTIAL DIAGNOSIS, RADIOLOGICAL PICTURE (5915)
  ARTERIOVENOUS SHUNT, STOMACH, DUODENUM PANCREAS, 02 CONSUMPTION (6507)
  ATHEROSCLEROSIS, GASTRIC ULCER, GASTRIC CARCINOMA, RADIOLOGY GERIATRICS (6620)
  BLOOD, DUODENAL ULCER, GASTRIC ULCER, SMOOTH MUSCLE CONTRACTION (5521)
  BLOOD, FLOW, LIVER, BILE, THYROID (6040)
  BLOOD CLOTTING, CIRRHOSIS, VITAMIN K, FIBRINOGEN, THROMBOCYTE, SPLENOMEGALY (5290)
  BLOOD COMPONENTS, ASCITES HEPATOMA CELLS (7559)
  BLOOD FLOW, INTESTINE, ABSORPTION, WATER (4774)
  BLOOD FLOW, LIVER, ANESTHESIA (5376)
  BLOOD FLOW, LIVER, BILIGRAFIN, EXCRETION, CHOLANGIOGRAPHY (4873)*
  BLOOD FLOW, LIVER, COLLOID CLEARANCE (2486)*
  BLOOD FLOW, LIVER FUNCTION, INDOCYANINE GREEN DYE, DENSITOMETER (4840)*
  BLOOD FLOW, MESENTERY, INTESTINE, DRUG ABSORPTION (5501)
  BLOOD FLOW, STOMACH, MUCOSA, ETHANOL, ASPIRIN (5382)
  BLOOD GROUP, CIRRHOSIS, LIVER, ALCOHOL (6890)

BLOOD GROUP, VIRAL, HEPATITIS, CIRRHOSIS (6937)*
BLOOD PROTEINS, BONE MARROW, CIRRHOSIS (7641)
BLOOD TRANSFUSIONS, INFANTS, HEPATITIS JAUNDICE, BIOPSIES, AUTOPSIES (6086)
BLOOD VESSEL, LIVER, VEIN, INNERVATION (7996)
BLOOD VOLUME, ISOTOPE TECHNIQUE, PLETHYSMOGRAPH, FLUID FILTRATION, CIRRHOSIS (5632)*
CARDIOMEGALY, AMOEBIC LIVER ABSCESS (1545)
CAROTID ARTERY, ANEURYSM, ULCER, SURGERY (2962)
CELIAC AXIS, COMPRESSION SYNDROME, ARTERIOGRAPHY, EPIGASTRIC PAIN, PSYCHOLOGICAL FACTORS (3697)*
CELIAC DISEASE, JEJUNAL MUCOSA, SUCTION BIOPSY, HISTOPATHOLOGY (5885)*
COAGULATION, ACUTE VIRAL HEPATITIS (6095)
COLON, MUCOSA, BLOOD VESSELS, LYMPHATICS (5435)*
CROSS, HETEROGRAFT, LIVER, BABOON, COMA, MAN (5213)
DIET, PEPTIC ULCER, CORONARY DISEASE (2639)
DISSECTING, ANEURYSM, HEPATIC ARTERY, HEMORRHAGE (5395)
EMBOLIZATION, GASTRIC ULCER, MILK PRODUCTS, GASTRIC TUBE, TRAUMATIC RUPTURE, AGRANULOCYTOSIS (5833)
ENTEROHEPATIC, RADIOACTIVE DETERMINATION, URINARY ESTROGEN (1700)*
ENTEROHEPATIC, RIBOFLAVIN, BILIARY EXCRETION (3122)
ENTEROHEPATIC, SALMONELLOSIS, TYPHOID FEVER, ANTIBIOTIC (1972)*
ENTEROHEPATIC, UREA NITROGEN, BACTERIAL FLORA (1691)*
ENTEROHEPATIC, URINARY ESTROGEN, RADIOACTIVE DETERMINATIONS (1700)*
ENTEROPATHY, GAS, PORTAL VEIN (8142)*
ENZYMATIC TOXEMIA, PANCREATITIS, HEMORRHAGE, EDEMA, NECROSIS (5154)
ENZYMATIC TOXEMIA, PERITONEAL EFFUSIONS, DIALYSIS, HYPOTHERMY, ACUTE PANCREATITIS, DOG (5148)
ERYTHROCYTE, GLUCOSE, MALABSORPTION, MEMBRANE TRANSPORT (5084)
ERYTHROCYTE LOCALIZATION, AUTORADIOGRAPHY, LIVER (7049)
ERYTHROCYTOSIS, POLYGLOBULISM, HEPATOMA, ELECTROPHORESIS, LIVER BIOPSY (5189)
ESOPHAGEAL, VARICES, HEMORRHAGE, SENGSTAKEN-BLAKEMORE TUBE (4973)*
ESOPHAGEAL, VARICES, HYPERSPLENISM, SPLENECTOMY (7303)
ESOPHAGEAL, VARICES, MANAGEMENT (6582)
ESOPHAGOPLASTY, SMALL INTESTINE TRANSPLANT (7317)
EXCHANGE TRANSFUSION, ACUTE NON-VIRAL HEPATITIS, COMA, STEROID (6063)
EXTRACORPORAL, SCHISTOSOMA MANSONI FILTRATION (3781)
FIBRINOGEN, HEPATIC SYNTHESIS, HEPATIC RELEASE (6455)
FIBRINOGEN, SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
GASTRIC BLOOD FLOW, GASTRIC DISTENTION (7203)
GASTRIC MUCOSA, PROSTAGLANDIN E1, NOREPINEPHRINE (2485)*
GASTRIN, PEPTIC ULCER, STOMACH, DUODENUM (7384)*
HEMATOMA, COLON, ETIOLOGY, MESOCOLON (5105)
HEMATOMA, DUODENAL, GALLBLADDER, VILE DUCT, SURGERY (5813)
HEMODYNAMIC, LIVER, NERVOUS SYSTEM, PERIARTERIAL NEURECTOMY, VASOMOTOR ACTION (4874)
HEMOLYTIC ANEMIA, ALCOHOLIC CIRRHOSIS, BURR CELLS, JAUNDICE, HYPERSPLENISM (5294)
HEMOPERFUSION, SMALL INTESTINE, HYPOTHERMIA, MOTILITY, MONOSACCHARIDE ABSORPTION (5615)*
HEMOPHILIA A, GASTRIC RESECTION, DUODENAL ULCER, ANTIHEMOPHILIC GLOBULIN PIG (6162)
HEMORRHAGE, PORTAL HYPERTENSION, LESION, GASTRODUODENAL (7735)
HEMORRHOID, ANUS, RECTUM, PATHOGENESIS ANATOMY (5939)
HEMORRHOID, DIAGNOSIS, TREATMENT (5923)
HEMORRHOID, RECTAL PROLAPSE, INCONTINENCE, SURGERY (5115)
HEMORRHOID, TREATMENT, DILATATION (5091)
HEPATIC, FIBROGENESIS, CIRRHOSIS (6395)
HEPATIC, MEMBRANE TRANSPORT (6377)
HEPATIC, PORTAL HYPERTENSION (6805)
HEPATIC, PORTAL-SYSTEMIC SHUNT (6788)
HEPATIC ARTERY, RUPTURED ANEURYSM (9209)
HEPATIC BILE, PHOSPHOLIPID SECRETION BILE ACIDS, MAN (0102)*
HEPATIC BLOOD FLOW, DRUG EFFECTS, CHOLERESIS (7924)
HYPERBILIRUBINEMIA, CONGENITAL, LIVER, GILBERT'S SYNDROME (5205)
HYPERBILIRUBINEMIA, CRIGLER-NAJJAR SYNDROME, ICTERUS (5182)
HYPERBILIRUBINEMIA, HEPATIC INSUFFICIENCY, ENZYMATIC DEFICIT, DETOXIFICATION, GLYCOGENOSIS (5191)
HYPERBILIRUBINEMIA, LUMINAL TREATMENT, NEONATE (5220)
HYPERKINETIC PORTAL HYPERTENSION (7635)
HYPERLIPEMIA, ALCOHOLIC CIRRHOSIS, ZIEVE'S SYNDROME, JAUNDICE, HEMOLYTIC ANEMIA (5284)
HYPERTENSION, ENZYME, LIVER, CIRRHOSIS (6124)
HYPERTENSION, MESENTERIC ARTERY, NORADRENALINE, RAT (6226)
HYPERTRIGLYCERIDEMIA, ALCOHOL, LIPID METABOLISM, ELECTROPHORESIS (5227)
INFARCTION, INTESTINE, X-RAY (5716)
INFARCTION, MESENTERY, OBSTRUCTION (5379)

INTERNAL HEMORRHOIDS, RINGING (7486)
INTESTINAL, HYPEROSMOLARITY, HEMORRHAGE, VASOPRESSIN, SHOCK, MOTILITY (5338)
INTESTINAL, MESENTERIC VASCULAR DISEASES (0703)
INTESTINAL ABSORPTION, BLOOD FLOW (6364)
INTRAMURAL HEMATOMA, TRAUMA, DUODENUM (7343)
ISCHEMIA, INTESTINE, MALABSORPTION, SURGERY (5086)
JAUNDICE, VIRAL HEPATITIS, HEPATIC ASSISTANCE (0622)
LEUCOCYTE, ALKALINE PHOSPHATASE, ACUTE VIRAL HEPATITIS, TUMOR, OBSTRUCTIVE JAUNDICE (5723)
LEUKEMIA, TYPHLITIS, COLON, CHILDHOOD (7485)
LIPOPROTEINS, MORRIS HEPATOMA (6762)•
LIVER, ACTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)
LIVER, ANESTHESIA (6843)
LIVER, ANEURYSM, POLYARTERITIS, ARTERIOGRAPHY (4904)
LIVER, BLOOD VESSEL (4626)
LIVER, COLLATERAL ARTERY, HILUS (2497)
LIVER, COLLATERAL CIRCULATION, HEPATIC ANGIOGRAPHY, AORTOGRAPHY (5981)•
LIVER, ENZYME, LOBE LIGATION, RAT (1598)
LIVER, EXTRACORPOREAL CIRCULATION, LIVER PHOSPHORYLASE (1709)•
LIVER, FETUS, NEWBORN, SURGERY, ATRESIA, BILE DUCT, TRAUMA (2956)
LIVER, FUNCTION, GLYCOGEN, LOBE LIGATION, RAT (1600)
LIVER, HEPATIC PORTAL SYSTEM, PORTOHEPATOGRAPHY, CANCER (0195)•
LIVER, HEPATIC VENOUS OUTFLOW BLOCK, STRUCTURE (6802)
LIVER, LIPID, LOBE LIGATION, RAT (1597)
LIVER, PARTIAL HEPATECTOMY, VASCULAR ANATOMY (8696)•
LIVER, PHOSPHORYLASE, LOBE LIGATION, RAT (1599)
LIVER, PORTAL HYPERTENSION, ARTERIOGRAPHY (6544)
LIVER, POST-RESECTION (6791)
LIVER, XENON 133 (8745)
LIVER DISEASE, ACUTE VENOUS OCCLUSION, LIVER BIOPSY, ELECTRON MICROSCOPY, PATHOLOGY (5168)•
LIVER FUNCTION, HIGH ALTITUDE (6471)
LIVER INJURY, INTRAMEPATIC SHUNT (8321)•
LIVER INJURY, LYMPHATICS, CIRRHOSIS (6904)
LIVER WEIGHT, RADIOGOLD, RADIOXENON (5638)
LYMPH, LIVER, FIBROSIS, SCHISTOSMIASIS, ASCITES (3767)•
LYMPHATICO-VENOUS SHUNTS, LYMPHANGIOMA MESENTERY (8464)
LYMPHOCYTE, BILE, CIRRHOSIS (6125)
MACROGLOBULINEMIA, HYPERPROTEINEMIA, LAENNEC'S CIRRHOSIS, PARAPROTEINS, IMMUNOELECTROPHORESIS (5287)
MESENTERIC, SAPHENOUS, VENOUS, CONSTRICTION, DOPAMINE, ALPHA RECEPTORS, SYMPATHETIC INNERVATION (2482)•
MESENTERIC ARGENTAFFIN CARCINOMA, SCLEROSIS (8151)
MESENTERIC INFARCT, EMBOLECTOMY, GRAFTS, REIMPLANTATIONS, THROMBOENDARTERIECTOMY, INTESTINAL RESECTION (5336)
MESENTERY, ANOMALY, STOMACH (2961)
MICRO-, LIVER, ARTERIAL PRESSURE, VENOUS PRESSURE, INTRAVITAL MICROSCOPY, FLOW ARREST, EXSANGUINATION (5629)•
MICRO-, LIVER, EXSANGUINATION, ARTERIAL PRESSURE, VENOUS PRESSURE, DEXTRAN, RAT (5644)
MICRO-, MESENTERY, HYPERTENSION (3723)
OBSTRUCTION, MEMBRANOUS, INFERIOR VENA CAVA, HEPATIC PORTION, SURGERY (6178)
OCCLUSION, X-RAY DIAGNOSIS, COLOSTOMY, CECOSTOMY (8444)
OCCULT BLOOD, LOSS, GASTROINTESTINAL HIATAL HERNIA, ULCERATIVE COLITIS (5684)
OXYHEMOGLOBIN DISSOCIATION CURVE, CIRRHOSIS (6903)
PANCREAS, LIVER, COLON, CELIAC TRUNK, SURGERY, HEPATIC ARTERIES (5145)
PANCREATITIS, SUPERIOR MESENTERIC ARTERY, CELIAC ARTERY, ANGIOGRAPHY, TRASYLOL, INTRAVENOUS ADMINISTRATION, INTRA-ARTERIAL ADMINSTRATION (4354)
PANCYTOPENIA, ACUTE HEPATITIS, APLASTIC ANEMIA, GASTROINTESTINAL BLEEDING, BONE MARROW (5266)
PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION, CIRRHOSIS, ASCITES (6894)
PLASMAPHERESIS, LIVER, ATROPHY, ULTRASTRUCTURE, LIVER BIOPSY (5293)
PLATELET, CIRRHOSIS, LIVER, INPUT (6902)
PLATELET, COAGULATION, HEPATOCELLULAR DISEASE, FIBRINOGEN (5203)
POLYARTERITIS NODOSA, BILE DUCT, GALLBLADDER (6915)
POLYCYTHEMIA, LIVER CARCINOMA, CIRRHOSIS, METASTASES, ERYTHROPOIETIC FACTOR (5193)
PORTACAVAL SHUNT, CIRRHOSIS, LIVER, HEMODYNAMICS, METABOLISM (5282)•
PORTAL, BILIARY OBSTRUCTION, DOG (7675)
PORTAL, CIRRHOSIS, XENON-133, PRECORDIAL RADIOACTIVITY (0191)•
PORTAL, LIVER, CIRRHOSIS, PORTACAVAL ANASTOMOSIS (4940)
PORTAL BLOOD FLOW, DISTRIBUTION, HEPATIC RESECTION, DOG (0925)•
PORTAL BLOOD FLOW, OXYGEN UTILIZATION, HEMORRHAGE (7708)
PORTAL DECOMPRESSION, IVALON, LIVER-KIDNEY CONNECTION (7742)
PORTAL HYPERTENSION, ABDOMINAL VENA CAVA PRESSURE (7638)
PORTAL HYPERTENSION, ANGIOGRAPHY (6540)

PORTAL HYPERTENSION, BILE-DUCT, ATRESIA, CONGENITAL MALFORMATION, CHRONIC JAUNDICE, HYPERPLASIA (6131)
PORTAL HYPERTENSION, CIRRHOSIS, FATTY LIVER, HEPATOGENIC MYOCARDOSIS (6893)
PORTAL HYPERTENSION, CIRRHOSIS, LIVER, PORTOSYSTEMIC SHUNT (6128)
PORTAL HYPERTENSION, CIRRHOSIS, RENAL FAILURE (6898)
PORTAL HYPERTENSION, ENDOSCOPY, ESOPHAGEAL VARICES (6907)
PORTAL HYPERTENSION, HEMORRHAGE, ESOPHAGEAL VARICES, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
PORTAL HYPERTENSION, HEPATIC ARTERY, ANGIOGRAPHY (6526)
PORTAL HYPERTENSION, HYPERSPLENISM (7001)
PORTAL HYPERTENSION, LIVER, NODULAR TRANSFORMATION (5998)
PORTAL HYPERTENSION, PERIHEPATITIS, ANASTOMOSIS, SPLENECTOMY (5289)
PORTAL HYPERTENSION, RADIOLOGY, SURGERY (5298)
PORTAL HYPERTENSION, SHUNT SURGERY, CIRRHOSIS (6784)
PORTAL HYPERTENSION, SURGERY (6785)
PORTAL HYPERTENSION, SURGERY, CIRRHOSIS, PORTACAVAL SHUNT (6028)
PORTAL HYPERTENSION, VENOUS, HEPATIC LYMPH, ASCITES, CIRRHOSIS, HYPOALBUMINEMIA (6217)
PORTAL HYPERTENSION SYNDROME, SCHISTOSOMIASIS (7764)
PORTAL VEIN, MOTILITY, CYCLIC 3'5'-AMP DIBUTYRYL-3'5'-AMP, THEOPHYLLINE, ADRENERGIC RECEPTOR (5627)*
PORTAL VENOUS SYSTEM, GAS, X-RAY, JEJUNUM (6989)
POSTOPERATIVE, SMALL INTESTINE, MAST CELL, HISTAMINE (3816)*
PROTHROMBIN, FIBRINOLYSIS, LIVER DISEASE, CANCER, CIRRHOSIS (5646)*
RESISTANCE VESSELS, SPLEEN, INTESTINE, LIVER, ANGIOTENSIN, VASOPRESSIN (6509)
RHESUS INCOMPATIBILITY, JAUNDICE, LUMINAL THERAPY, XENOENZYME, ENTOPLASTIC RETICULUM, PROPHYLAXIS, NEWBORN INFANT (5201)
SEROLOGY, ENTAMEBA HISTOLYTICA, ANTIGEN (5403)
SEROTONIN, MUCOSA, COLON (2317)
SERUM, BILE ACID, INFANCY (7567)
SERUM, BILIRUBIN, SPECTROPHOTOMETRY (4849)
SERUM, PROTEIN, SYNTHESIS, METHYLCOBALAMIN, LIVER DAMAGE, REGENERATION, RAT (4819)*
SERUM HEPATITIS, AUSTRALIA ANTIGEN (6868)
SMALL INTESTINE, LIPID ABSORPTION, MICELLE (4766)*
SMALL INTESTINE, MESENTERIC ARTERY, MESENTERIC VEIN, THORACIC DUCT, OCCLUSION, LYMPH (2951)*
SMALL INTESTINE, MESENTERIC ARTERY OCCLUSION, HYPERMOTILITY (4788)*
SMALL INTESTINE, KCI EFFECTS, THIAZIDES, HYPEROSMOLARITY (4871)*
SMALL INTESTINE, VASOCONSTRICTION, VENOUS COLLAPSE, SURGERY, ANESTHESIA (2946)*
SPINAL CORD, HEATING, COOLING, INTESTINAL (8698)
STOMACH DISEASE (3369)
SUBMUCOSAL HEMATOMA, DUODENUM (7419)
TELANGIECTASIA, HEMORRHAGE, ENDOSCOPY (5391)
TELANGIECTASIA, HEMORRHAGE, GASTROINTESTINAL TRACT, MELENA (5386)
THROMBOPHLEBITIS, BUDD-CHIARI SYNDROME SURGERY (6213)
THROMBOSIS, MESENTERIC VEIN, ORAL CONTRACEPTIVE (6235)
UREMIA, AUTORADIOGRAPHY, HISTOCHEMISTRY, EPITHELIA, ENZYMATIC ACTIVITY, MICE (6248)
UREMIA, DIALYSIS, ILEAL LOOP, RENAL FAILURE, RAT (4777)
VARICES, COLON, SIGMOIDOSCOPY, RESECTION (5913)
VASCULAR ANATOMY, LIVER, CARCINOMA (6322)
VASCULAR INSUFFICIENCY, SMALL INTESTINE (7741)
VASCULAR OCCLUSION, COLON, RADIOLOGY (6704)
VASODILATION, JEJUNUM, MUCOSA (4868)
VENOUS, LIVER, SURGERY (1792)
VENOUS REVERSAL, LIVER, DOG (6508)
CIRRHOSIS
ACTIVE, BILIARY, AZATHIOPRINE (6881)*
ACUTE VIRAL HEPATITIS, AMINO ACID, GAMMA GLOBULIN (6013)
ACUTE VIRAL HEPATITIS, DRUG ADDICTION (6085)
ALCOHOL, CANCER, ESOPHAGUS (4122)
ALCOHOL, CHOLERETIC, LIVER (2139)
ALCOHOL, CHRONIC HEPATITIS (6122)
ALCOHOL, LIVER, ASCITES, SURGERY (6906)
ALCOHOL, NECROSIS, FATTY LIVER (5224)
ALCOHOL DEHYDROGENASE, LIVER, ZINC, COPPER, MANGANESE, SELENIUM, CADMIUM WILSON'S DISEASE (6002)
ALCOHOLIC, AMMONIEMIA, NEUROLOGICAL, HEMORRHAGE (6884)
ALCOHOLIC, ASCITIC, EDEMA, CONTROL (4524)
ALCOHOLIC, JAUNDICE, HEMOLYTIC ANEMIA, BURR CELLS, HYPERSPLENISM (5294)
ALCOHOLIC, RENAL FAILURE, PORTACAVAL SHUNT (6826)*
ALCOHOLIC, RENAL MEDULLAR NECROSIS, PATHOLOGY (9168)
ALCOHOLIC, ZIEVE'S SYNDROME, HYPERLIPEMIA, JAUNDICE, HEMOLYTIC ANEMIA (5284)
ALCOHOLIC, ZINC METABOLISM (2894)*
ALCOHOLISM, LIVER BIOPSY, JAUNDICE, INSUFFICIENCY (2824)
ALCOHOLISM, PANCREATIC FUNCTION, AMYLASE, LIPASE, PANCREOZYMIN (5278)
ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
ANATOMY, DIAGNOSIS (2140)
ANGIOGRAPHY, DIAGNOSIS, CANCER (5729)

ANGIOTENSINASE, ENZYME ACTIVITY ANGIOTENSIN (1706)*
ANICTERIC, LIVER, SULFOBROMOPHTHALEIN, CHOLINESTERASE, TESTS (9159)
ANTIBODIES, SERUM, TESTING (0103)*
ANTIGEN, LIVER, HEPATITIS (2133)*
ARGININE, MALIC ACID, ACUTE VIRAL HEPATITIS (6044)
ARTERIAL DESATURATION (2146)
ASCITES, ALCOHOLIC, CORTICOIDS (6885)
ASCITES, HEPATIC COMA, DIURETICS (6901)
ASCITES, PLASMA VOLUME, PORTAL HYPERTENSION, RENAL SODIUM RETENTION (6894)
ASCITES, SURGERY, ADRENALECTOMY (6797)
ASCITIC, ELECTROCARDIOGRAPHY (2161)
AUSTRALIA ANTIGEN, ACUTE AND CHRONIC LIVER DISEASE, HEPATITIS (6050)
AUTOANTIBODIES, HEPATITIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
BILE DUCT DIAGNOSIS (0184)*
BILE SALT, SECRETION, CHOLECYSTECTOMY, PANCREOZYMIN, CHOLECYSTOKININ, SECRETIN (4506)*
BILIARY, CHRONIC CHOLESTASIS, NUTRITION (6120)
BILIARY, IMMUNITY, HEPATITIS, COLLAGEN DISEASE (6871)
BILIARY, JAUNDICE, PRURITIS, XANTHOMA, HEPATOMEGALY, SPLENOMEGALY, LAPAROSCOPY, RADIOGRAPHY, EXTRAHEPATIC CHOLOSTASIS (6118)
BILIARY, LAENNEC'S, BILE (2130)*
BILIARY, LIVER, HISTOLOGY, IMMUNOLOGY (8387)
BILIARY, LYMPHOCYTE (6125)
BILIARY, PARAGONIMIASIS, JAUNDICE (3659)
BILIARY, PRIMARY (0654)
BILIARY DUCT, ATRESIA, OBSTRUCTIVE JAUNDICE, CHOLESTYRAMINE (5218)
BILIRUBIN, SERUM PROTEIN FRACTION, PHOSPHATIDULCHOLINE, THIAMINE, RIBOFLAVIN (2823)
BLOOD CLOTTING, VITAMIN KI, FIBRINOGEN, THROMBOCYTE, SPLENOMEGALY (5290)
BLOOD PLATELET AGGREGATION (4511)
BLOOD PROTEINS, BONE MARROW (7641)
BLOOD SUGAR, INSULIN, FATTY ACID (4522)
CANCER, JAUNDICE, FATTY LIVER (0197)*
CARBON TETRACHLORIDE, 3-METHYLCHOLANTHRENE, AGE FACTOR, RAT (5277)*
CARBON TETRACHLORIDE, METHYLCHOLANTHRENE, RAT (3606)
CARBON TETRACHLORIDE-INDUCED, PROTEIN DROPLETS, VACUOLES, ULTRASTRUCTURE (2893)*
CARCINOMA, CARBON TETRACHLORIDE (3543)*
CARCINOMA, PRIMARY HEPATIC, LAPAROSCOPY, AUTOPSY (7538)*
CARDIAC OUTPUT, HYPERTENSION, ANASTOMOSES (6875)*
CHILDREN, ADOLESCENTS, ENZYMES, DIAGNOSIS (0194)*
CHOLESTASIS, ASCITES, PORTAL HYPERTENSION, HEPATIC LYMPH, HYPOALBUMINEMIA (6217)
CHRONIC, ACTIVE HEPATITIS, GAMMA GLOBULIN, METABOLISM (3643)*
CHRONIC, ACTIVE HEPATITIS, CORONOVIRUS (3642)*
CHRONIC, DRUG EFFECT, ANTIBODY, SERUM PROTEIN FRACTION (2819)
CHRONIC, ENZYME, TRYPSIN (2966)
CHRONIC, PROTEIN-FREE LIVER EXTRACT, TREATMENT (2126)
CHRONIC HEPATITIS, DUODENAL MUCOSA (7628)
CHRONIC HEPATITIS, HYPERSPLENISM, LIVER METASTASES, FATTY LIVER, THROMBOCYTOPENIA (5202)
CHRONIC HEPATITIS, IMMUNOGLOBINS, MITOCHONDRIA (5276)
CHRONIC HEPATITIS, LIVER SCAN (7629)
CHRONIC HEPATITIS, LYMPHOCYTES, BLASTOID CELL TRANSFORMATION (7624)*
CHRONIC HEPATITIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
CHRONIC HEPATITIS, THROMBOCYTOPENIA, HYPERSPLENISM, FATTY LIVER (5173)
CHRONIC HEPATOPORTAL ENCEPHALOPATHY, LACTULOSE (7631)*
COLON, MICROFLORA, ENCEPHALOPATHY, PORTACAVAL SHUNT (6941)*
COMPENSATED, LIVER, INDOCYANINE-GREEN TEST (8016)
COMPENSATED, TREATMENT, ANABOLIC STEROIDS, PROTEIN SYNTHESIS, LIVER FUNCTION TESTS (4505)*
CORTICOSTEROIDS, METABOLISM (2148)
CYTOLYSIS SYNDROME, LIVER, CHILDREN, CHRONIC HEPATITIS (6001)
DECOMPENSATION, LIFE EXPECTANCY (7633)*
DEVELOPMENT, SPLEEN BLOCKADE, RABBIT (0645)
DIABETES, GLUCOSE, INSULIN, METABOLISM, POTASSIUM CHLORIDE (6121)
DIAGNOSIS, CAUSES, NUTRITION, HEPATITIS (0557)
DIAGNOSIS, SCINTIGRAPHY VS RADIOACTIVE, IODINE TEST (2515)
DIAGNOSTIC ERRORS (0201)
DIAPHRAGM, ASCITES, RUPTURE, DIAGNOSIS (2189)*
DISACCHARIDE INTOLERANCE, MALTOSURIA, AMINOACIDURIA (5898)
DISTURBED HAIR GROWTH, DIAGNOSIS (0531)*
DOPAMINE, RENAL FUNCTION (3651)*
EEG, ENCEPHALOPATHY, ORNITHINE, ALPHA-KETOGLUTARIC ACID (6803)
ELECTROLYTE, ALTERATION (2147)
ELECTROLYTE, ASCITES, WATER TRANSPORT, KIDNEY (2820)
ENDOSCOPY, PORTACAVAL SHUNT, ESOPHAGUS, BLEEDING VARICES (6113)*
ENZYME, DEXAMETHASONE, DRUG EFFECT (2898)
ENZYME, PROTEIN (4519)
ENZYME ACTIVITY, HEPATITIS, HEMOLYSIS,

PLASMA, SERUM, SGOT, SGPT, LDH, LIVER METASTASES (4933)
ENZYME HYPERTENSION (6124)
EPITHELIOID, GRANULOMA, LIPOGRANULOMA (6776)*
ESO-GASTRIC VARICES, LINTON-NACHLAS TUBE, SENGSTAKEN-BLAKEMORE TUBE (2903)
ESOPHAGEAL VARICES, HEMORRHAGE, SURGERY (7727)
ESOPHAGEAL VARICES, HEMORRHAGE, WEATHER CONDITIONS (4161)
ESOPHAGEAL VARICES, MICROCARCINOMA, SURGERY, MORTALITY (4966)
ESOPHAGEAL VARICES, SELECTIVE DECOMPRESSION, LEFT GASTRIC VENOUS-CAVAL SHUNT (2132)*
ESOPHAGUS VARICES, SURGERY (4518)
ESTROGEN METABOLISM, CHROMATOGRAPHY, MAN (2160)
ETHANOL, LIPID (5246)
ETIOLOGY, CHOLECYSTOLITHIASIS, CHOLECYSTITITS, ALCOHOLISM (0653)
EXERCISE, FIBRINOLYSIS, MAN (0638)*
EXPERIMENTAL, MONKEY, SURGERY (1440)*
FAMILIAL, IMMUNOGLOBULIN, AUTOIMMUNE FEATURES (9150)*
FAT, ALCOHOL, LIVER (5235)
FATTY ACID, ALCOHOLISM (3650)*
FATTY ACID, STEROL, FECES (4509)
FATTY LIVER, CHRONIC HEPATITIS, SERUM ALBUMIN, SERUM, GLOBULIN, ELECTROPHORESIS (5212)
FATTY LIVER, PLASMA PHOSPHOLIPIDS (2129)*
FOLIC ACID, MALABSORPTION, LIVER BIOPSY, URINE, CHRONIC ALCOHOLISM, PTEROYLGLUTAMIC ACID (5074)
FUNCTIONAL, RENAL FAILURE (2150)
GASTROINTESTINAL HEMORRHAGE, ESOPHAGEAL VARICES, ULCER, ENDOSCOPY (5368)
GENERAL OBSERVATIONS (2058)
GLUCOCORTICOIDS, INCONSTANT ACTION, HEPATITIS (0615)
GLUCOSE OXIDATION, METABOLISM (4508)
HEMATOGENIC, INFECTIOUS, HEPATITIS (6886)
HEMATOGENIC, INFECTIOUS, HEPATITIS, ULCER (6886)
HEMOCHROMATOSIS, IRON METABOLISM (6000)
HEMODYNAMICS, MAN (0643)
HEMODYNAMICS, SPLENECTOMY, POSTCAVAL ANASTOMOSIS (1448)
HEMORRHAGE, PORTACAVAL SHUNT (4513)
HEPAMERZ, HEPATITIS, LIVER METASTASES, RADIATION, ASPARAGINE, ORNITHINE (5197)
HEPATECTOMY, PARTIAL, HUMAN (9161)
HEPATIC, ABDOMEN, ECHINOCOCCOSIS (1538)
HEPATIC, ANEMIA, PATHOGENESIS (2330)
HEPATIC, ASCITES, SURGERY (2896)
HEPATIC, CARCINOMA (1444)
HEPATIC, DRUG EFFECT, BLOOD, DIAGNOSIS (2888)
HEPATIC, HEPATIC ARTERY DENERVATION (3654)
HEPATIC, KININS, KININOGEN, ASCITES (4504)*
HEPATIC, LIVER HYDROLYSATE, ANTITOXIC FACTOR, SURGERY, ESOPHAGEAL VARICES, SERUM PROTEIN FRACTION (2905)
HEPATIC, METABOLISM, SODIUM, POTASSIUM, WATER, ACID-BASE EQUILIBRIUM (2899)
HEPATIC, PEPTIC ULCER, GASTRIC MUCOUS MEMBRANE (1122)
HEPATIC, PORTAL HYPERTENSION, SPLENORENAL VENOUS ANASTOMOSIS (1449)
HEPATIC, RENAL LESIONS, ADOLESCENTS (4516)
HEPATIC, RESPIRATION, WORK CAPACITY, BLOOD (2889)
HEPATIC, SERUM IMMUNOGLOBIN, IGG, IGA, IGM (5688)
HEPATIC, SPLENOMEGALY, BLEEDING ESOPHAGEAL VARICES (3656)
HEPATIC-ASSOCIATED ANTIGEN, RAPID SCREEN, PROPHYLAXIS TREATMENT (7600)*
HEPATIC CARCINOMA, POLYCYTHEMIA (5193)
HEPATIC CIRCULATION, FIBROGENESIS (6895)
HEPATIC COMA, URETEROSIGMOIDOSTOMY (6954)
HEPATIC INJURY, CIRCULATION, LYMPHATIC (6904)
HEPATITIS, AUTOALLERGIC PHENOMENON (2091)
HEPATITIS, CHRONIC, TREATMENT (2124)*
HEPATITIS, ICTERUS, VIRUS (5263)
HEPATITIS, LIPOPROTEIN (4040)
HEPATITIS, MECHANISMS, PORTAL HYPERTENSION (2242)
HEPATITIS, SERUM TOCOPHEROL, BETA-LIPOPROTEIN CONCENTRATION (7526)*
HEPATITIS, VIRAL, ENZYMES, MALATE DEHYDROGENASE, SORBIT DEHYDROGENASE, SERUM (0695)
HEPATOMA (4361)*
HEPATOMA, LIVER (6829)
HISTOCHEMISTRY, ETIOLOGY, PATHOLOGY, CHILD (0635)*
HISTOPATHOLOGY, CLASSIFICATION, LEBANON (0647)
HYPERGLOBULINEMIA, JAUNDICE, HEPATITIS (5261)
HYPERPROTEINEMIA, MACROGLOBULINEMIA, IMMUNO-ELECTROPHORESIS, LAENNEC'S PARAPROTEINS (5287)
HYPERSPLENOMEGALY, DIFFUSE HEMORRHAGE (2142)
HYPERTROPHIC OSTEOARTHROPATHY (4520)
IMMUNOGLOBULINS, DIAGNOSTIC PATTERN (6115)*
IMMUNOSUPPRESSIVES, CHRONIC HEPATITIS, ACUTE INTOXICATION (5274)
INCIDENCE, JAPAN, ALCOHOL EFFECTS, HEPATOMA, PATHOLOGY (4514)
INDIAN CHILDHOOD, DERMATOGLYPHICS (2154)
INDIAN CHILDHOOD, DISACCHARIDE INTOLERANCE, MALTOSURIA (1442)*
INDIAN CHILDHOOD, HEPATITIS ANTIGEN, SERUM IMMUNOGLOBULINS (3648)*

INFANTILE, SERUM TRANSAMINASE (2901)
INFANTILE, TUBULAR STRUCTURES (0650)
IRON ABSORPTION, PORTACAVAL SHUNT, DOG (6114)*
IRON METABOLISM (3587)
JAUNDICE, GERIATRICS (5210)
JUVENILE, CUTANEOUS LESIONS, ALLERGY, CAPILLARIES, PARAKERATOSIS (5285)
KIDNEY, MAN (0648)
LAENNEC'S, ASCITES, ALCOHOLISM (1447)
LAENNEC'S, ENDOCRINE ABNORMALITIES (2151)
LAENNEC'S, GROWTH HORMONE, DIABETES (9153)*
LAENNEC'S, LIVER, LIPID METABOLISM, GALLSTONE FORMATION (8607)*
LAENNEC'S, PHYSIOPATHOLOGY, ALCOHOLISM, HYPOGONADISM (1452)
LAENNEC'S, PORTAL HYPERTENSION, PORTAL VEIN THROMBOSIS (2137)
LAENNEC'S, SEROTONIN METABOLISM, DISTURBANCE (2900)
LAPAROSCOPY, CRUVEILHIER-V. BAUMGARTEN SYNDROME, ESOPHAGEAL VARICES (6573)
LATENT, DIAGNOSIS, SYMPTOMOLOGY (2144)
LIFE THREATENING (3655)
LIVER, ABSORPTION, COBALT (5072)*
LIVER, ACID-BASE BALANCE, PERFUSION (2136)
LIVER, ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS, BOTKIN'S DISEASE, CHILREN (6093)
LIVER, AFRICA, HEPATITIS, CARCINOMA (6027)
LIVER, ALBUMIN, BILIRUBIN, ASCITES, PROGNOSIS (6899)
LIVER, ALBUMIN METABOLISM (6902)
LIVER, ALCOHOLISM, PROTEIN MALNUTRITION (7637)
LIVER, AMMONIA METABOLISM, PORTACAVAL SHUNT (2134)*
LIVER, ASCITES, EDEMA, COMPARTMENTALIZATION (6123)
LIVER, ASCITES, MANAGEMENT (8647)
LIVER, ASCITES, PEPTIC ULCER, PREDNISONE (6900)
LIVER, BILE ACIDS, ABNORMAL METABOLISM (8381)
LIVER, BIOPSY, DIAGNOSIS (5672)
LIVER, BLOOD COAGULATION TEST (2895)
LIVER, BLOOD GROUP, ALCOHOL (6890)
LIVER, BLOOD LIPIDS, FATTY ACIDS, CHOLESTEROL, HEPATIC INFILTRATION, COAGULATION (5291)
LIVER, CANCER, PROTHROMBIN, FIBRINOLYSIS (5646)*
LIVER, CANCER, SCANNING (1803)*
LIVER, CARCINOMA, JAPAN (6789)
LIVER, CHRONIC HEPATITIS, HEMODYNAMIC PARAMETERS (6108)
LIVER, CHRONIC HEPATITIS, SERUM COMPLEMENT (9044)
LIVER, CHRONIC HEPATITIS, SULFOBROMOPHTHALEIN TEST (7260)
LIVER, CYTOCHEMISTRY, CHILDREN (8388)
LIVER, DIMETHYL SULFIDE, MERCAPTONS, METHIONINE (5281)*
LIVER, ENTEROHEPATIC CIRCULATION, ERYTHROCYTES (8394)
LIVER, ENZYME, HEPATITIS (4014)*
LIVER, EPIDEMIOLOGY, ETIOLOGY (8377)
LIVER, ERYTHROCYTE, LYMPHATICS (2143)
LIVER, ETHANOL (2365)
LIVER, ETIOLOGY, HISTOLOGY (8384)
LIVER, FATTY ACID, BREATH (5280)*
LIVER, FIBRINOLYTIC ACTIVITY, CLOTTING DISORDERS (9152)*
LIVER, GERIATRICS (6905)
LIVER, HEART DISEASE (7649)
LIVER, HEMORRHAGE, GASTRIC, DUODENAL (6889)
LIVER, HEMORRHAGE, SURGERY (6909)
LIVER, HEMORRHAGE, TREATMENT (8379)
LIVER, HEPATIC MYELOPATHY, ANATOMOPATHOLOGY (8380)
LIVER, HEPATITIS, BILIRUBIN, PROTEIN FRACTIONS, GAMMA GLOBULIN, COAGULATION, AMMONIUM, TRANSAMINASE (4932)
LIVER, HEPATOGENIC MYOCARDOSIS, FATTY LIVER, PORTAL HYPERTENSION (6893)
LIVER, IMMUNOLOGY (6877)*
LIVER, INSULIN, GLUCOSE TOLERANCE (6882)*
LIVER, KALA-AZAR INFECTION (8393)
LIVER, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)*
LIVER, MALLORY BODIES, FATTY INFILTRATION (9042)*
LIVER, MICROSOMAL DETOXICATIONS CYTOCHROME (2135)
LIVER, OBSTRUCTIVE JAUNDICE, TUMOR, TREATMENT (6011)
LIVER, ORNITHINE-ASPARTATE MIXTURE, BLOOD AMMONIA LEVELS (8390)
LIVER, PANCREAS STASIS, HISTOLOGY (1321)
LIVER, PATHOLOGY, IMMUNOLOGY (8386)
LIVER, PITUITARY AND ADRENAL FUNCTION, PLASMA CORTISOL BREAKDOWN (9160)
LIVER, PLASMA ANTI-ANGIOTENSIN ACTIVITY, PROTEIN DEFICIENCY (6896)
LIVER, PLATELETS, INPUT (6908)
LIVER, PORTACAVAL SHUNT, HEMODYNAMICS, METABOLISM (5282)*
LIVER, PORTACAVAL SHUNT, NECROSIS (9157)
LIVER, PORTAL, NITROGEN METABOLISM (8375)*
LIVER, PORTAL HYPERTENSION, PORTAL VENOBSTRUCTION, PLASMA VOLUME (1699)*
LIVER, PORTAL HYPERTENSION, PORTOSYSTEMIC SHUNT (6128)
LIVER, PORTAL HYPERTENSION, STEATOSIS, NECROSIS (5295)
LIVER, PRIMARY, CANCER, ALCOHOLISM, ETIOLOGY, EPIDEMIOLOGY (4374)
LIVER, PRIMARY CARCINOMA (6806)
LIVER, PROGNOSIS, PORTAL CIRCULATION, HEMORRHAGE, PORTACAVAL ANASTOMOSIS (4940)
LIVER, PROGNOSIS, THERAPY (9163)
LIVER, PROTECTION (3564)
LIVER, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA, RESPIRATORY ALKALOSIS (5292)
LIVER, RENAL FAILURE, HEPATIC COMA (6891)

LIVER, RIGHT-SIDED HYDROTHORAX, PATHOGENESIS (9167)
LIVER, SERUM HYALURONIDASE, CARBON TETRACHLORIDE POISONING (2163)*
LIVER, SMOOTH SURFACE (7642)
LIVER, SPLENOMEGALY, THROMBOCYTOPENIA (6883)
LIVER, SYMPTOMATOLOGY, THERAPY (8392)
LIVER, THYROXINE, ALPHA-GLOBULIN (3658)
LIVER, UMBILICAL VEIN CATHETERIZATION, PERITONEOTOMY (8385)
LIVER, VENOUS PRESSURES (8371)*
LIVER, VIRAL HEPATITIS, SERUM LIPOPROTEINS (8266)*
LIVER, ZINC, COLLAGEN (8369)*
LIVER INSUFFICIENCY, PATHOLOGY, BIOCHEMISTRY (8393)
LIVER MORPHOLOGY, CHRONIC HEPATITIS, VIRAL HEPATITIS (8391)
LIVER SCAN, COLLOIDAL GOLD, AMEBIC ABSCESS (4889)*
LIVER DISEASE, SOCIO-ECONOMIC PROBLEM (1420)
LIVER METASTASES, DIAGNOSIS, SCINTIGRAM, PHOTOSCAN (4922)
LIVER SIZE, FUNCTION, BLOOD FLOW (9164)
LIVER SLICES, ALBUMIN SYNTHESIS (8373)*
LYMPHOCYTE TRANSFORMATION, PHYTOHEMAGGLUTININ (2887)
MALABSORPTION, CALCIUM, VITAMIN D (5081)
METABOLISM, HIGH SUGAR DIET (2149)
METABOLISM, PROTEIN, DIET (5299)
METHOTREXATE, PSORIASIS (0639)
METHOTREXATE, PSORIASIS, LIVER DAMAGE (0640)
MICROPOLYSACCHARIDES, CATABOLISM (0562)
MITOCHONDRIA, REDOX STATE, MALNUTRITION, RAT (2141)
MUCOVISCIDOSIS (0523)
NEEDLE BIOPSY, MAN, DIAGNOSIS (0967)
OBSTRUCTIVE BILIARY, LIVER INJURY, ATRESIA (8372)*
OXYHEMOGLOBIN DISSOCIATION CURVE, CIRCULATION (6903)
PARENCHYMA CELLS, INTRANODULAR STRUCTURES, HISTOMETRICAL ANALYSIS (6116)*
PATHOLOGY, ANATOMY, MAN (0649)
PERFUSION, BOVINE LIVER THERAPY, HEPATIC FAILURE (3613)
PERFUSION, LIVER INSUFFICIENCY (4517)
PERIPORTAL FIBROSIS, FATTY CHANGE, BILIARY STASIS (0593)
PLEURAL EFFUSION, PLEURESY (5296)
PORTACAVAL ANASTOMOSIS, EMERGENCY (3657)
PORTACAVAL SHUNT, CEREBRAL BLOOD FLOW, METABOLISM (1665)
PORTACAVAL SHUNT, LIVER (5297)
PORTACAVAL SHUNT VS MEDICAL TREATMENT ENCEPHALOPATHY, ASCITES, BLEEDING (1441)*
PORTACAVAL SHUNT, PORTAL HYPERTENSION (6784)
PORTAL, HYPERTROPHIC OSTEOARTHROPATHY (2159)
PORTAL, POST-NECROTIC, POST-HEPATIC, BILIARY, CARDIAC, SYPHILITIC, ETIOLOGY (2157)
PORTAL, PYRAMIDONE METABOLISM, MICROSOMAL OXIDASE (6814)
PORTAL CIRCULATION, XENON-133, PRECORDIAL RADIOACTIVITY (0191)*
PORTAL HYPERTENSION, AMMONIA TOLERANCE TEST, DIAGNOSIS (0186)*
PORTAL HYPERTENSION, ESOPHAGEAL VARICES, HEMORRHAGE (5286)
PORTAL HYPERTENSION, PROGNOSIS (4510)
PORTAL HYPERTENSION, SURGERY, PORTACAVAL SHUNT (6028)
PORTAL HYPERTENSION, TREATMENT (2904)
POST-HEPATIC, MORTALITY RATE, ALCOHOL, CHOLELITHIASIS, HEMICOLECTOMY (5265)
POST-HEPATITIS, TRANSAMINASES, ALKALINE PHOSPHATASE, BSP, ELECTROPHORESIS, HYPERGAMMAGLOBULINEMIA, PERILOBULAR FIBROSIS, LOW REGENERATION (6119)
POSTNECROTIC, VIRAL HEPATITIS, HEPATOCELLULAR CARCINOMA (1429)
POSTNECROTIC, VIRAL HEPATITIS, HEPATOCELLULAR CARCINOMA, AUSTRALIA ANTIGEN (0547)
PRIMARY BILIARY, INTRAHEPATIC, BILE DUCTS, FINE STRUCTURE, BEHAVIOR (0652)
PRIMARY BILIARY, SARCOIDOSIS, KVEIM TEST (0651)
PRIMARY CARCINOMA, SURGERY (9151)*
PRIMARY HEPATIC CARCINOMA, HISTOPATHOLOGY (7524)*
PROTEIN, TURNOVER, RADIOISOTOPES (6880)*
PROTEIN-BOUND ZINC, SERUM (2892)*
PROTEIN DEFICIENCY, ALBUMIN THERAPY (7650)
RADIOISOTOPIC DIAGNOSIS, BLOOD FLOW, FUNCTION TESTS, PROGNOSTIC EVALUATION (0211)
RENAL FAILURE, HYPOTENSION (2145)
RENAL FAILURE, PORTAL HYPERTENSION (6898)
RENAL FUNCTION (6127)
RENAL FUNCTION, RENIN ACTIVITY, CATECHOLAMINES (6126)
RETICULAR INVOLVEMENT (7640)
SCINTILLATION CAMERA, LIVER, BILIARY ATRESIA (1810)*
SELENIUM 75-METHIONINE, DIAGNOSIS, LIVER (8706)*
SEROTONIN METABOLISM, ACUTE VIRAL HEPATITIS (6117)
SERUM IRON, BINDING-CAPACITY, HEMOCHROMATOSIS (4651)
SERUM MAGNESIUM LEVELS, SPIRONOLACTONE TREATMENT, CHILDREN (2891)*
SERUM PROTEIN ELECTROPHORESIS, DIAGNOSIS (0936)*
SGPT, SGOT (0663)
SIDEROSIS, EPITHELIAL IRON, COLLATERAL CIRCULATION ROLE, AFRICANS (0636)*
SMALL INTESTINE, MUCOSAL CHANGE (5867)
SURGERY, ANASTOMOSIS (4616)

  - SURGERY, MALNUTRITION, MALARIA, ADHESIONS (6887)
  - SYPHILIS (2155)
  - SYPHILIS, ASSOCIATION, SIGNIFICANCE (0642)
  - THIOACETAMIDE INDUCED, LIVER, DEHYDROGENASES, HISTOCHEMISTRY (8382)
  - THROMBOCYTOPENIA, EUGLOBULINLYSIS TIME (0641)
  - TRANSITION, CHRONIC HEPATITIS (0610)*
  - ULCER, DUODENUM, HEMORRHAGE (4038)
  - ULCERATION, GASTRIC, DUODENAL, CHRONIC HEPATITIS (0351)
  - ULTRASONIC SCANNING, CANCER, METASTASES, ASCITES (4892)*
  - UMBILICAL VEIN CATHETERIZATION, HEPATOPORTOGRAPHY, EARLY DIAGNOSIS (2158)
  - VASCULAR OBSTRUCTION, ASCITES, HEPATIC VENOUS PRESSURE (5632)*
  - VIRAL HEPATITIS, AFTERTREATMENT (2871)
  - VIRAL HEPATITIS, BILE SECRETION, VEDRENAN, MIGRAINE LITHIASIS (5172)
  - ZIEVES SYNDROME (0644)
  - ZINC, DNA (7632)*
- CLOACA
  - EXTROPHY, MANAGEMENT (2714)
- COAGULATION
  - ANTICOAGULANTS, PANCREATITIS (3535)
  - BLOOD TEST, CIRRHOSIS, LIVER (2895)
  - CIRRHOSIS, PORTAL HYPERTENSION, FIBRINOLYSIS, THROMBOCYTOPENIA (0641)
  - FRIBINOLYSIS, LIVER HOMOTRANSPLANT (2453)
  - INTRAVASCULAR, HEPARIN-RELIEVED ANURIA, PANCREATITIS (3540)
  - THROMBOEMBOLISM, MALIGNANT MUCOCELE, APPENDIX (3497)
- COENZYME
  - FOLATE, LIVER, THYROXINE (2426)
  - LIVER, ENZYME, ALDEHYDE (4724)
  - LIVER, NUCLEOTIDE, DIPHOSPHOPYRIDINE NUCLEOTIDE (1726)
  - NAD+, METABOLISM, CARBOHYDRATE, LIPID (7144)*
  - NAD, NADP, MITOCHONDRIA, LIVER ALTERATION (7595)
  - Q, LIVER MITOCHONDRIA, HYPERTHYROIDISM (7909)*
- COLCHICINE
  - MALABSORPTION, INTESTINAL, NEOMYCIN, MAGNESIUM SULFATE (2331)
- COLECTOMY
  - ULCERATIVE COLITIS, LARGE INTESTINE (1299)
  - ULCERATIVE COLITIS, LIVER ABNORMALITIES, FIBROSIS (4307)*
  - ULCERATIVE COLITIS, LIVER DISEASE (4308)*
- COLICIN
  - SHIGELLA, SENSITIVITY, EPIDEMOLOGY, DYSENTERY (0479)
- COLITIS
  - AMOEBIC, PREGNANCY, PUERPERAL STATE, NIGERIA (0439)
  - BALANTIDIUM COLI (7763)
  - CHRONIC, INTESTINAL ENZYME (1295)
  - CHRONIC AMEBIC, SYSTEMIC EFFECTS, LIVER (7017)
  - CHRONIC ULCERATIVE, MEGACOLON (1297)
  - COLON, GRANULOMA, MYCOBACTERIUM TUBERCULOSIS (1983)
  - CONSTIPATION, BISMUTH SUBNITRATE, KARAYA GUM (8946)
  - CROHN'S DISEASE, COLON (5884)
  - DYSBACTERIOSIS, LARGE INTESTINE, ULCER, ANTIBIOTIC, TOXIC DILATATION (2748)
  - ENTERO-, COLONIC STENOSIS, NEONATE (5945)
  - ENTERO-, DIAGNOSIS (0946)*
  - ENTERO-, SALMONELLA, DIARRHEA, RAT (6247)
  - GASTROENTERITIS, DIROMO, BACTERICIDE EFFECT (9203)
  - GRANULOMATOUS, CROHN'S DISEASE, COLECTOMY, FOLLICULAR LESIONS, SMALL INTESTINE, SARCOID APPEARANCE (5880)
  - GRANULOMATOUS, CROHN'S DISEASE, REGIONAL INTERITIS (1210)
  - GRANULOMATOUS, CROHN'S DISEASE, SURGERY (2758)
  - GRANULOMATOUS, DIAGNOSIS (2603)
  - GRANULOMATOUS, DIVERTICULITIS, DIAGNOSIS (2697)
  - GRANULOMATOUS, FOCAL (2759)
  - GRANULOMATOUS, THERAPY (8224)
  - GRANULOMATOUS, ULCER, INFARCTION (5129)
  - GRANULOMATOUS, ULCERATIVE (7503)
  - GRANULOMATOUS, X-RAY, CROHN'S DISEASE (3308)
  - GRANULOMATOUS ILEO-, IMMUNOSUPPRESSIVES, CORTICOIDS, FEVER, LYMPHOID HYPERTROPHY, ULCERATION (5135)
  - HEMORRHAGIC, RECTUM (4299)
  - IDIOPATHIC, GRANULOMATOUS, RADIOLOGY (3277)
  - ISCHEMIC (2733), (6693)*, (7846), (8206)
  - ISCHEMIC, COLON, OCCLUSION, RADIATION THERAPY (5918)
  - ISCHEMIC, GANGRENE (2006)
  - ISCHEMIC, MESENTERY, OCCLUSION (6232)
  - ISCHEMIC, RADIOLOGY (7468)
  - LC 9066, GASTRIC DISORDERS, HEPATITIS, PANCREATITIS, CONSTIPATION (6168)
  - NECROGENIC, TROPICAL (0471)
  - NON-NECROTIZING, REGIONAL, SEGMENTAL (8180)*
  - PSEUDOMEMBRANOUS, ANTIBIOTIC (7483)
  - PSEUDOMEMBRANOUS, RECTUM, COLON, ANTIBIOTICS (1789)
  - RECTO-, BISMUTHBILE, DIARRHEA, SORBITOL, CONSTIPATION (5253)
  - RECTO-, HEMORRHAGE, AZOTHIOPRINE (5106)
  - RECTO-, POSTOPERATIVE, HEMORRHAGIC, ILEORECTAL ANASTOMOSIS, PROGNOSIS, COLECTOMY (5123)
  - RECTO-, ULCERATIVE, TUMOR (5944)
  - REGIONAL, GRANULOMATOUS (8220)
  - ROENTGENOLOGY, SEGMENTAL, GRANULOMATOUS (8219)
  - SEGMENTAL, GRANULOMATOUS (7960)

TRANSMURAL, CHRONIC ULCERATIVE (8221)
ULCER, SURGERY (5133)
ULCERATIVE, AGE, SEX, RELAPSE (8211)*
ULCERATIVE, ALLERGY, GASTROINTESTINAL DISEASE (6163)
ULCERATIVE, AZULFIDINE, METABOLISM, EXCRETION (8557)*
ULCERATIVE, BILE DUCT, CANCER (5315)
ULCERATIVE, BLOOD AND IRON LOSS (1293)*
ULCERATIVE, CHILDREN (6733)
ULCERATIVE, CHROMOSOMAL ABERRATIONS (3509)*
ULCERATIVE, CHRONIC, RADIOLOGY (2015)
ULCERATIVE, CLINICAL STUDY, CHILDREN (4320)
ULCERATIVE, COLON (2767)
ULCERATIVE, COLON, ABSORPTION, EDTA (5951)
ULCERATIVE, COLON, SURGERY (5124)
ULCERATIVE, CORICOSTEROIDS, ABSORPTION, MAN (1294)*
ULCERATIVE, CROHN'S DISEASE (6735)
ULCERATIVE, CROHN'S DISEASE, GRANULOMA (6564)
ULCERATIVE, CROHN'S DISEASE, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5446)*
ULCERATIVE, CYTOSTATIC, DRUG THERAPY (1298)
ULCERATIVE, DIAGNOSIS, COMPLICATIONS, TREATMENT (5949)
ULCERATIVE, DIAGNOSIS, TESTS (4021)
ULCERATIVE, DIAGNOSIS, THERAPY (2013)
ULCERATIVE, DIFFUSE CARCINOSIS, COLON (3515)
ULCERATIVE, DNA, HYPERSENSITIVITY, ANTIBODY, SALAZOPYRINE, TISSUE DAMAGE, AUTOLOGOUS LEUCOCYTES (5132)
ULCERATIVE, EPIDEMIOLOGY, STRESS FACTOR (3507)*
ULCERATIVE, ETIOLOGY, THERAPY (8215)
ULCERATIVE, ETIOPATHOLOGY (4322)
ULCERATIVE, EXTRACOLONIC, ULCERATIVE ESOPHAGITIS, DYSPHAGIA, IRITIS, ARTHRITIS (0499)
ULCERATIVE, GRANULOMATOUS, URINARY CRYSTALLOID EXCRETION (7499)*
ULCERATIVE, GLUCOCORTICOIDS, STEROIDS (0702)
ULCERATIVE, GLUCOCORTICOIDS, TREATMENT (3511)
ULCERATIVE, GRANULOMATOUS, COLECTOMY (6734)
ULCERATIVE, GRANULOMATOUS, COMPARISON (2763)*
ULCERATIVE, GRANULOMATOUS, RECTAL EPITHELIUM, KINETICS (0495)*
ULCERATIVE, GRANULOMATOUS LYMPHOCYTE TOXICITY, ALLOGENIC COLONIC EPITHELIAL CELL (5947)*
ULCERATIVE, GROWTH RETARDATION (3435)*
ULCERATIVE, HEMORRHOIDS, ANAL PROLAPSE, ABSCESS, EXTRAINTESTINAL COMPLICATION, LIVER, EYES, VASCULAR (5130)
ULCERATIVE, HEPATIC LESIONS (0567)
ULCERATIVE, HIATAL HERNIA, OCCULT BLOOD LOSS (5684)
ULCERATIVE, HYDROELECTROLYTIC DISEQUILIBRIA (4311)
ULCERATIVE, HYPNOTHERAPY (7502)
ULCERATIVE, HYPOPHYSEAL-ADRENAL SYSTEM (1302)
ULCERATIVE, ILEORECTAL ANASTOMOSIS (5950)
ULCERATIVE, ILEOSTOMY, VITAMIN B12 ABSORPTION (3506)*
ULCERATIVE, INCIDENCE, ITALY (4318)
ULCERATIVE, ISOENZYME, LACTIC DEHYDROGENASE, RECTAL MUCOSA, RECTOSCOPY (5131)
ULCERATIVE, LIVER DISEASE (6736)
ULCERATIVE, LIVER FUNCTION TESTS, COLECTOMY (4308)*
ULCERATIVE, LIVER PERFUSION, COMA, HEMOSTASIS (5283)*
ULCERATIVE, MICROFLORA, LARGE INTESTINE, FECES (8212)
ULCERATIVE, MORBUS CROHN, APPENDIX (7434)
ULCERATIVE, MUCOSA, BIOPSY, ROENTGENOLOGY, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (4939)
ULCERATIVE, NIGERIA, EPIDEMIOLOGY, PYOSTOMATITIS VEGETANS, PREDNISONE (3508)*
ULCERATIVE, OIB TEST, LIVER DETOXIFICATION, GLUCURONIDATION, RADIO ISOTOPES, TRANSAMINASE, GLUCURONYLTRANSFERASE (5122)
ULCERATIVE, PATHOLOGICAL ANATOMY (4321)
ULCERATIVE, PITUITARY-ADRENAL, LARGE INTESTINE (2012)
ULCERATIVE, POLYARTHRITIS, SACROILEITIS (8214)
ULCERATIVE, POLYCHONDRITIS (2014)
ULCERATIVE, PROCTOCOLITIS, REGIONAL, ISCHEMIC (4310)
ULCERATIVE, PROCTOSIGMOIDITIS, CLINICAL COURSE (3512)
ULCERATIVE, PSYCHOSOMATIC, STRESS FACTOR, LARGE INTESTINE, CROHN'S DISEASE (3434)*
ULCERATIVE, RECTO-, SURGERY, PSYCHIATRY, DIAGNOSIS, THERAPY, PSYCHOSOMATICS (5125)
ULCERATIVE, REGIONAL ENTERITIS, CROHN'S DISEASE, ANTIBIOTIC, INTESTINAL FLORA, CYTOSTATICS (5127)
ULCERATIVE, STEROID THERAPY, SURGERY (2765)
ULCERATIVE, SURGERY, CONTINENECE, RECTUM, ILEUS, ILEOSTOMY, COLECTOMY, GASTRIC MUCOSA, ANASTOMOSIS (5128)
ULCERATIVE, SURGERY, LARGE INTESTINE (1299)
ULCERATIVE, THERAPY (3513)
ULCERO-HEMORRHAGIC, RECTUM, COMPLICATIONS (4309)
ULCEROUS, BACTERIA, INTESTINE, VITAMIN (2764)
COLLAGEN
DISEASE, AUTOIMMUNE FACTORS, GASTROINTESTINAL TRACT, MUCOSA, ANTINUCLEAR ANTIBODIES (6222)
GENESIS, LIVER, CARBON TETRACHLORIDE POISONING, RATS (1750)

HEPATIC, CARBON TETRACHLORIDE, POISONING (6448)•
HYDROLYSIS, GASTRITIS (7345)
LIVER, COLLAGENOLYTIC ACTIVITY, RAT (5597)

COLON
ABSCESS, SURGERY, HEALING (5101)
ABSORPTION, AMINO ACID, JEJUNUM (2342)•
ABSORPTION, EDTA, ULCERATIVE COLITIS (5951)
ABSORPTION, VITAMIN B, FLORA (8564)
ACUTE VOLVULUS, SURGERY, RECTO-SIGMOID INTUBATION, SMALL INTESTINE, PERFORATION (5121)
ADENOCARCINOMA (1989)
ADENOCARCINOMA, ELECTROLYTE, RECTUM (3471)
ADENOCARCINOMA, RECTUM (7480)
ADENOCARCINOMATA, PROTEOLYTIC ENZYME (2809)•
ADENOMA, CARCINOMA, POLYP (4915)
ADENOMA, SURGERY (2710)
ADENOMATOUS POLYP, VILLI CHANGE (1974)•
ADRENERGIC FIBERS, INNERVATION, CATECHOLAMINE, GUINEA PIG (3811)•
AGANGLIONOSIS, HIRSCHSPRUNG'S DISEASE SMALL BOWEL REFLUX, NEONATES (1970)•
ANASTOMOSIS, DRAIN, PERITONITIS (2708)
ANASTOMOSIS, HISTOPATHOLOGY, RABBIT (1218)•
ANGIOTENSIN, ACETYLCHOLINE, SMOOTH MUSCLE CONTRACTIONS, AGONISTS (4795)•
ANTINCHOLINERGICS, MECHANISM OF ACTION, ACTIVITY, GUINEA-PIG (0040)
ANUS, ANASTAMOSIS STRICTURE, SWENSON'S OPERATION (0436)
ANUS, FISTULA (4278)
APPENDICITIS, SURGERY (3487)
APPENDIX, DIAGNOSIS (1977)
APPENDIX, DIVERTICULITIS, APPENDICITIS, SURGERY (5103)
ASCENDING, APPENDIX, NEURONAL JUNCTION (3802)•
ASCENDING, MEGACOLON, STENOSIS, MEGAILEUM (3479)
ASCENDING, MESENTERIUM COMMUNE, VOLVULUS (0456)
ATRESIA, DIAGNOSIS, TREATMENT (8979)
BALANTIDIUM COLITIS (7763)
BILE DUCT, FISTULA, ANATOMOPATHOLOGY, PATHOGENESIS (9175)
BLOOD FLOW, (SYMPATHETIC AND PARA-) NERVE GRADED REFLEX ACTIVATION RESPONSES (3258)
BYPASS, RENAL FUNCTION, FLORA (7636)
CANCER (0462), (0463)
CANCER, APPENDECTOMY (7490)
CANCER, CHILDREN (1273)
CANCER, DIAGNOSIS (5904)
CANCER, INCIDENCE (1986)
CANCER, LIVER METASTASIS, LEFT LIVER LOBECTOMY, LONG-TERM SURVIVAL (0433)
CANCER, PALLIATIVE RADIATION THERAPY (3504)
CANCER, POLYPS, RADIOLOGICAL DETECTION (0188)•
CANCER, RADIATION THERAPY, RECTUM (5112)
CANCER, RECTOSIGMOIDOSCOPY, POLYPS (6520)•
CANCER, RECTUM, ANUS (4271)
CANCER, RECTUM, ANUS, SURGERY (4193)
CANCER, RECTUM, CHEMOTHERAPY (4294)
CANCER, RECTUM, SURGERY (1268)
CANCER, SERUM CARCINOEMBRYONIC ANTIGEN, RADIOIMMUNOASSAY (1219)•
CANCER, SURGERY (5107)
CANCER, SURGERY, AMPICILLIN (7466)
CANCER, SURGERY, PROGNOSIS (3475)
CANCER, SURVIVAL, SURGERY (5909)
CARCINOEMBRYONIC ANTIGEN, ULTRASTRUCTURAL LOCALIZATION (7456)•
CARCINOMA, APPENDIX, SURGERY (2703)
CARCINOMA, CYTOLOGICAL SCREENING METHOD, FLUORESCENCE MICROSCOPY (0187)•
CARCINOMA, EARLY DIAGNOSIS, GASTROINTESTINAL ORGANS (0204)
CARCINOMA, 5-FLUOROURACIL (3489)
CARCINOMA, 1-B-D-ARABINOFURANOSYLCYTOSINE (7455)•
CARCINOMA, POLYPOSIS COLI, GENES (2930)
CARCINOMA, PRIMARY LINITIS PLASTICA (8190)
CARCINOMA, RADIOTHERAPY (6975)
CARCINOMA, RECTOSIGMOID, IRRADIATION (1997)
CARCINOMA, RECTUM, ANUS (7475)
CARCINOMA, RECTUM, HEPATIC INFUSION (2730)
CARCINOMA, RECTUM, JAMAICA (4284)
CARCINOMA, RETROPERITONEAL, RADIOTHERAPY (7461)
CARCINOMA, SIGMOIDOSCOPY (0464)
CARCINOMA, SURGERY (2719)
CARCINOMA, SURGERY, ANTIBIOTIC (5118)
CARCINOMA, SURGERY, EXTENSIVE (8971)
CARCINOMA, SURGERY, GERIATRICS (1981)
CARCINOMA, SURGERY, SUBCUTANEOUS EMPHYSEMA (8185)
CARCINOSIS, ULCERATIVE COLITIS (3515)
CAT, PERISTALSIS, MUCOSA, DRUG EFFECT (2477)
CECUM, MORPHOLOGY, RODENTS (7805)
CECUM, SIGMOID, APPENDIX, ENDOMETRIOSIS (6697)
CHRONIC AMEBIC COLITIS, SYSTEMIC EFFECTS, LIVER (7017)
COLITIS (2767)
COLITIS, CROHN'S DISEASE (5884)
COLITIS, NECROGENIC, TROPICAL (0352)
COLITIS, ULCER, SURGERY (5124)
COLITIS, ULCERATIVE, GROWTH RETARDATION (3435)•
COLOSTOMY, ILEOSTOMY, DIARRHEA, CONSTIPATION, DIET (5903)
CONGENITAL ATRESIA, JEJUNUM, ILEUM(6208)
CROHN'S DISEASE (0485)
CROHN'S DISEASE, ANAL LESIONS, RADIOLOGY (9001)
CROHN'S DISEASE, ANO-RECTAL SPREAD, ILEUM (3477)
CROHN'S DISEASE, DIAGNOSIS, SYMPTOMATOLOGY (9000)

CROHN'S DISEASE, DIVERTICULITIS, DIAGNOSIS (2697)
CROHN'S DISEASE, FOCAL (2759)
CROHN'S DISEASE, LARGE INTESTINE, ULCEROUS (6716)
CROHN'S DISEASE, MALABSORPTION (1211)
CROHN'S DISEASE, PROLAPSE, FOLLICULAR LESIONS, SARCOID APPEARANCE (5880)
CROHN'S DISEASE, SARCOIDOSIS (4746)
CROHN'S DISEASE, STOMACH, CASE REVIEW (3375)
DEFECATION, RECTUM, ANUS (4802)
DISEASE, GUAR GUM THERAPY, ATAPULGITE (8203)
DISEASES, LITERATURE REVIEW (0486)
DIVERTICULA, OVERVIEW (6715)
DIVERTICULA, SURGERY (6713)
DIVERTICULAR DISEASE, PROGRESSION PROGNOSIS (2003)
DIVERTICULITIS, DIVERTICULOSIS, DIFFERENTIATION, RADIOLOGY (5681)
DIVERTICULITIS, DIVERTICULOSIS, PATHOGENESIS (0489)
DIVERTICULITIS, FISTULA (5117)
DIVERTICULITIS, HEMORRHAGE, SURGERY (8198)
DIVERTICULITIS, PELVIC SEPSIS, SURGERY (8975)
DIVERTICULITIS, PERFORATED, SURGERY (4288)
DIVERTICULITIS, RADIOLOGY (7484)
DIVERTICULITIS, SIGMOID MYOTOMY, LAPAROTOMY (8973)
DIVERTICULITIS, SURGERY (2007), (2755), (5114)
DIVERTICULITIS, SURGERY, PERFORATION, FECAL MATTER, HEMORRHAGE, DRAINAGE, COLOSTOMY (5916)
DIVERTICULOSIS, ABDOMINAL MUSCULATURE DEFICIENCY (8957)
DIVERTICULOSIS, ACUTE, TREATMENT (0461)
DIVERTICULOSIS, BLEEDING, RESECTION, CARCINOMA, CECUM, SIGMOID, ANASTOMOSIS (5914)
DIVERTICULOSIS, DIVERTICULITIS, SURGERY (1287)
DIVERTICULOSIS, ETIOLOGY, EPIDEMIOLOGY (8944)
DIVERTICULOSIS, HEMORRHAGE (1255)
DIVERTICULOSIS, PATHOGENESIS, DIET (0478)
DIVERTICULOSIS, RADIOLOGY, STENOSIS, TUMOR (6576)
DIVERTICULOSIS, SURGERY (8197)
DIVERTICULOSIS, TREATMENT (1271)
DIVERTICULUM, CECUM (4273)
DIVERTICULUM, DIVERTICULITIS (5919)
DIVERTICULUM, PROCTORRHAGIA (4274)
DOLICHOCOLON, SURGERY, CONSTIPATION (3757)
DOLICHOSIGMOID, SURGERY (0431)
ELECTRIC ACTIVITY, GASTRO-COLIC REFLEX (3895)
ELECTRIC ACTIVITY, MEGACOLON (4280)
ENDOMETRIOSIS, RECTUM (5910)
ENDOSCOPY, ENDOPHOTOGRAPHY, NEOPLASTIC LESIONS (8772)
ENZYME, HISTOCHEMISTRY, JEJUNUM, ACTH (0169)
ENZYME ACTIVITY, HISTOCHEMISTRY, SMALL INTESTINE, MAN (0752)*
EPITHELIUM, CRYPTS, PROLIFERATION KINETICS (8510)*
ESOPHAGOSTOMOSIS, BLOOD (4662)*
EXAMINATION, FLEXIBLE GASTROSCOPE (3271)*
FAMILIAL POLYPOSIS, MALIGNANCY, ENZYME DISTRIBUTION (7454)*
FIBREOPTIC COLONOSCOPY (7276)
FIBROMA, COMPLICATION, PREGNANCY (2698)
FISTULA, DUODENUM, DIAGNOSIS, SURGERY (5709)
FISTULA, GALLBLADDER, MALABSORPTION (8412)
GARDNER'S SYNDROME, CARCINOMA (3486)
GARDNER'S SYNDROME, COLECTOMY (5934)
GLUCOCORTICOIDS, STOMACH, SMALL INTESTINE (7705)
GRANULOMA, COLITIS DIAGNOSIS (2757)
GRANULOMATOUS COLITIS, CHRONIC ULCERATIVE COLITIS (7503)
HEMORRHAGE, DIVERTICULITIS (2982)
HEMORRHAGE, RADIOGRAPHY (4900)
HEMORRHAGE, ULCER, DIVERTICULUM, TUMOR (4901)
HEPATIC FLEXURE, CARCINOMA, DUODENAL LOOP, CHANGE (3469)
HIRSCHSPRUNG'S DISEASE, AGANGLIONIC RECTUM, CHRONIC CONSTIPATION (7482)
IDIOPATHIC PERFORATION, NEWBORN (2718)
ILEOCOLIC INVAGINATION, ILEOCOCAL LYMPHOSARCOMA (0390)
ILEORECTAL ANASTOMOSIS, ULCERATIVE COLITIS (5950)
ILEUM, JEJUNUM, SURGERY (1929)
ILEUM, MUCOSA, SURGERY, DUODENUM (5045)
ILEUS, DIFFERENTIAL DIAGNOSIS (4286)
ILEUS, RADIOLOGY (3460)*
INFARCTION, ULCERATION, COLITIS (5129)
INFLAMMATION, ULCERATIVE COLITIS, DIAGNOSIS, THERAPY (2013)
INNERVATION, SMOOTH MUSCLE, ELECTROPHYSIOLOGY, GUINEA-PIG, RABBIT (0774)*
INTERPOSITION, ESOPHAGUS, SUBSTERNAL, COMPLICATIONS (2704)
INTRAPERITONEAL PERFORATION, RADIOLOGY (7491)
IRRITABLE, STASIS, DYSCHEZIA (1233)
IRRITABLE BOWEL SYNDROME, PROGNOSIS, SYMPTOMS, STRESS EFFECT (0427)*
IRRITABLE SYNDROME, SYMPTOMS, TREATMENT (3510)
ISCHEMIA, ATHEROSCLEROSIS (1278)
ISCHEMIA, GANGRENE, ABDOMINAL AORTIC RESECTION, TREATMENT (3465)*
ISCHEMIC, REVERSIBLE, ANGIOGRAPHY (8986)
ISCHEMIC COLITIS (2733), (6693)*
ISCHEMIC COLITIS, GANGRENE (2006)
ISCHEMIC COLITIS, RADIOLOGY (7468)
ISOLATED, PERISTALSIS, MECHANISM, INTRALUMINAL STIMULUS (5506)*

JEJUNUM, ILEUM, SURGERY (1951)
JEJUNUM SHUNT, FIBROSIS, FATTY LIVER (4521)
LAXATIVES, ENEMA, DULCODOS, DULCOLAX, SENOKOT, COLON WASHOUT, ABDOMINAL RADIOGRAPH (5331)•
LEFT, ESOPHAGEAL REPLACEMENT (7311)
LEFT, PANCREATITIS DEVELOPMENT (0514)
LYMPHANGIECTASIA, PROTEIN LOSS, MALABSORPTION (1259)
LYMPHATICS, LYMPHOGRAPHY, DOG (6505)
LYMPHOID HYPERPLASIA, CHILDREN (1992), (1993)
MALIGNANT TUMORS, INCIDENCE, DISTRIBUTION (6729)
MAN, IN VITRO, TRANSPORT, SODIUM (8548)•
MEGA-, AGANGLIAR, SURGICAL TREATMENT, NONSUTURE TECHNIQUE (0437)
MEGA-, AGANGLIONIC, RECTAL MOTILITY, NEONATE, CHILDREN (5929)
MEGA-, HIRSCHPRUNG'S DISEASE, RADIOLOGY (7488)
MEGA-, MEGADOLICHO-, TREATMENT, DIHYDROERGOTAMINE METHANE SULFONATE (0428)•
MEGA-, TOXIC, ULCERATIVE COLITIS, ILEOSTOMY COLOSTOMY (8999)
MEGACOLON, HIRSCHSPRUNG'S DISEASE, ATRESIA (3480)
MEGAENTERON, JEJUNUM, BACTERIA (4565)•
MEGAENTERON, JEJUNUM, COLIFORM (4566)•
MESO-, HEMATOMA, ABDOMINAL APOPLEXY (0455)
MEXASE, PANCREATITIS, BILIARY TRACT (5356)
MICROFLORA, CIRRHOSIS, ENCEPHALOPATHY, PORTACAVAL SHUNT (6941)•
MICROORGANISMS, PROTEIN, NITROGEN, VITAMINS, ENZYMATIC SECRETIONS, RABBIT (4886)•
MORPHOLOGY, JEJUNAL RESECTION (7808)
MOTILITY, NERVOUS CONTROL, BLOOD (3898)
MUCOSA, BICARBONATE SECRETION, NON-NA COMPONENT (2341)•
MUCOSA, CANCER TISSUE, ISOENZYMES, LACTASE DEHYDROGENASE (0062)•
MUCOSA, CIRCULATION, LYMPHATICS, RABBIT (5435)•
MUCOSA, DILATATION, REDUCED PERISTALSIS, HIRSCHSPRUNG'S DISEASE (6717)
MUCOSA, ELECTRICAL POTENTIAL (4800)
MUCOSA, LYMPHOSARCOMA (5392)
MUCOSA, SECRETION, GRANULOMATOUS, COLITIS (4316)
MUCOSA, SOLUBLE ANTIGENS, BIOIMMUNOCHEMISTRY (3086)
MUCOSA ANTIGENS, PHOSPHATASES, MAN (7821)
MUSCLE, PHARMACOLOGY (0494)
NECROSIS, SIGMOID, SURGERY (1995)
NEOANTE, OCCLUSIONS, PERITONITIS, RADIOLOGY, DIAPHRAGM, MALROTATION, HIRSCHPRUNG'S DISEASE (5058)
NEOSTIGMINE, ATROPINE, ILEUM, RECTUM (4804)
OBSTRUCTION, NON-OPERABLE CARCINOMA, COLOSTOMY AVOIDANCE (3502)
OBSTRUCTION, UROGENITAL SYSTEM (4902)
OBSTRUCTIVE CARCINOMA, CECOSTOMY (8182)
OCCLUSION, CARCINOMA, PHYSIOPATHOLOGY, DIAGNOSIS (0466)
OCCLUSION, CROHN'S DISEASE, ETIOPATHOGENESIS, THERAPY (0467)
OCCLUSION, RADIOLOGY, COLITIS (5918)
PARASITES, HELIGMOSOME NEMATODES, RODENTS (5405)
PARTIAL NECROSIS, MESENTERIC VASCULARY OCCLUSION, SURGERY (9251)
PATHOLOGY, GEOGRAPHICAL STRUCTURAL DISORDERS (0486)
PATHOLOGY, PHARMACOTHERAPY (5922)
PELVIC, LUMBAR HERNIA, REPAIR (6722)
PELVIC, VOLVULUS, ETIOLOGY, TREATMENT (1987)
PERFORATION, ABDOMINAL TRAUMA, TRAFFIC ACCIDENTS (8945)
PERFORATION, BARIUM ENEMA COMPLICATION (2508)•
PERFORATION, CARCINOMA, RADIOGRAPHY, COLOSTOMY (8201)
PERFORATION, INFANT (1990)
PERFORATION, INFANT, TREATMENT (1984)
PERFORATION, SPONTANEOUS, HEMODIALYSIS (8977)
PERFORATION, STERCORACEOUS (1265)
PERISTALSIS, SPONTANEOUS, LIGNOCAINE BLOCK, MAN (0054)
PERISTALSIS, STIMULATION, PHYSICAL FACTORS (3128)
PERITONEUM, INFECTION, RECTUM (4270)
PLASMACYTOMA (5099)
PNEUMATOSIS CYSTOIDES, DIAGNOSIS (6698)
PNEUMATOSIS CYSTOIDES INTESTINALIS, SIGMOIDOSCOPY (7703)
POLYP, CANCER, ENDOSCOPY, SURGERY (0432)
POLYP, CANCER, RADIOLOGY (6714)
POLYP, CUSHING'S SYNDROME (5926)
POLYPOSIS, FAMILIAL, LYMPHOID HYPERPLASIA, ILEUM (2669)
POLYPOSIS, GASTROINTESTINAL MUCOSA, GASTRECTOMY, COLOTOMY (5065)
POLYPOSIS, MULTIPLE MANDIBULAR OSTEOMAS, GARDNER'S SYNDROME(0484)
POLYPOSIS COLI, FAMILIAL, PREVENTATIVE SURGERY (8968)
POSTPERFORATED ABSCESS, RECTAL OBSTRUCTION (3490)
POTASSIUM TRANSPORT, RATS, ADRENALECTOMIZED, SODIUM DEPLETED (0760)•
PRESSURE, MUCOSA, RESISTANCE, DIOXYPHENYLISATIN (6695)
PRIMARY INFLAMMATORY DISEASE (4289)
PROCTOCOLITIS, ABSORPTION, POTASSIUM, DIARRHEA (3463)•
PROCTO-SIGMOIDOSCOPY, COLITIS (4319)
PSEUDOMEMBRANOUS COLITIS, ANTIBIOTICS (1991)
PSEUDOTUMORS, CHRONIC DIVERTICULITIS, SIGMOID FLEXURE (4894)•
RADIOLOGY, DIAGNOSIS, COLITIS (3277)
RADIOLOGY, HYPEREMIA, SPASM, TENESMUS, PAIN (2736)
RADIOLOGY, PREPARATION (4925)

RECTOCOLITIS, HEMORRHAGE, AZOTHIOPRINE (5106)
RECTOCOLITIS, HEMORRHAGIC, CROHN'S DISEASE, ARTICULAR SYMPTOMS (0473)
RECTOSIGMOID, BENIGN, TRANSRECTAL REMOVAL (0492)
RECTOSIGMOID JUNCTION, PERFORATION, FOREIGN BODY (1985)
RECTOSIGMOID RUPTURE, ILEAL EVISCERATION, ANUM (5930)
RECTUM, ANASTOMOSIS, CECAL FISTULA, SURGERY, TUMOR (5942)
RECTUM, ANUS, INJURY, SURGERY (4269)
RECTUM, CANCER, METASTASES, CHEMOTHERAPY, SURGERY, LIVER (5198)
RECTUM, SURGERY, CANCER (7458)
RESECTION, BACTERIA, ILEOSTOMY (5931)
RESECTION, COLORECTAL CANCER (5932)
RESECTION, DIVERTICULAR DISEASE (4283)
RESECTION, FECAL ELECTROLYTE LOSS (7492)
RETROGRADE INTUBATION (1818)
RECTUM, CANCER, POLYP (2707)
RECTUM, INJURIES, DIAGNOSIS, TREATMENT (2711)
RECTUM, POLYPOSIS, RADIOLOGY (2728)
RIGHT, DIAGNOSIS, CANCER, OBSTRUCTION, STOMACH, APPENDICITIS (2520)
SECRETION, ELECTROPHORESIS, LYSOGENIC FACTOR, RABBIT (0170)
SEGMENTARY ULCERATIVE COLITIS (4314)
SEROTONIN, CIRCULATION, MUCOSA (2317)
SIGMOID, ACUTE VOLVULUS, RESECTION (6720)
SIGMOID, ACUTE VOLVULUS, TREATMENT (6712)
SIGMOID, CANCER, SURGERY, URINARY APPARATUS (4297)
SIGMOID, DISCONTINUOUS ABSCESS, WALL (0457)
SIGMOID, DIVERTICULITIS, PERFORATION (2701)
SIGMOID, EXTRANEOUS BODY (0458)
SIGMOID, FLEXIBLE FIBERSIGMOIDOSCOPY (7294)
SIGMOID, HEMATOMA, ETIOLOGY, MESOCOLON (5105)
SIGMOID, LYMPHOMA, CARCINOMAS (0199)
SIGMOID, MEGASIGMOID, GIGANTIC (0459)
SIGMOID, MYOTOMY, DIVERTICULUM, MANOMETRY (3482)
SIGMOID, RECTUM, CARCINOMA, PREGNANCY (5924)
SIGMOID, URETHRA, FISTULA (2004)
SIGMOID, VOLVULUS (3478)
SIGMOID, VOLVULUS, CECUM (4292)
SIGMOID, VOLVULUS, SURGERY (2706)
SIGMOID DIVERTICULUTIS, FREE-PERFORATION, SURGICAL TREATMENT (0248)
SLOW WAVES, OXYGEN CONSUMPTION, HYPOTHYROIDISM, RABBITS (4786)*
SMALL INTESTINE, SURGERY, TRANSVERSE (1928)
SQUAMOUS CELL CARCINOMA, ADENOCANTHOMA (5905)
STENOSIS, ENTEROCOLITIS, NEONATE (5945)
STENOSIS, DIFFERENTIAL DIAGNOSIS (4293)
STENOSIS, GASTRODUODENAL RESECTION, GASTROENTEROANASTOMOSIS (8856)
STENOSIS, NEONATE, ATRESIA (7471)
SURGERY, BACTERIOLOGY, ANTIBIOTIC (2731)
SURGERY, EMERGENCY (4275)
SURGERY, GENTAMYCIN, ANTIBACTERIAL ACTION, COLONIC FLORA, INTESTINAL GERMS, STERILIZATION (5941)
SURGERY, MESOCAVAL SHUNT (3000)
SURGERY, NEOMYCIN (1261)
SURGERY, NEOPLASM (1258)
SURGERY, PENICILLIN, BACTERIA (4881)
TAENIA COLI, CALCIUM, POTASSIUM (2332)*
TAENIA COLI, MOTILITY, AET, JEJUNUM, DEFECATION, RABBIT (5623)
TAENIA COLI, SMOOTH MUSCLE (3783)
TRANSMURAL ELECTRICAL POTENTIAL DIFFERENCE, MAN (1662)
TRANSMURAL POTENTIAL DIFFERENCE, RECORDING ELECTRODES, COLON (1647)*
TRANSVERSE, DESCENDING, CARCINOMA (1968)*
TRANSVERSE, STRANGULATED HERNIA, ANATOMOPATHOLOGY, SURGERY (8949)
TRANSVERSE, VOLVULUS (4276)
TRAUMATIC INJURY, SURGICAL MANAGEMENT (3491)
TUBERCULOUS COLITIS, GRANULOMA (1983)
TUBERCULOUS ENTEROCOLITIS, SURGERY (6987)
TUMOR, ANTIGEN (1254)
TUMOR, GLYCOGEN CONTENT, GLYCOGENESIS RATE (0469)
TUMOR IMPLANTATION, ANASTOMOSIS, RAT (1978)
TYPHLITIS, LEUKEMIA, CHILDHOOD (7485)
ULCER, COLITIS, SURGERY (5133)
ULCERATED ADENOCARCINOMA, CLOSTRIDAL MYONECROSIS (0480)
ULCERATION, PERFORATION, LIVER HOMOTRANSPLANT (1225)*
ULCERATIVE, GRANULOMATOUS, MICRODIVERTICULA (8156)*
ULCERATIVE COLITIS (0496)*
ULCERATIVE COLITIS, BLOOD AND IRON LOSS (1293)*
ULCERATIVE COLITIS, CANCER, BILE DUCT (5315)
ULCERATIVE COLITIS, CARCINOMA (0497)*
ULCERATIVE COLITIS, CATAMNESIS, STATISTICS, MORTALITY RATE (8990)
ULCERATIVE COLITIS, CHILDREN (6733)
ULCERATIVE COLITIS, CLINICAL STUDY (4323)
ULCERATIVE COLITIS, CROHN'S DISEASE (6735)
ULCERATIVE COLITIS, CROHN'S DISEASE, GRANULOMA (6564)
ULCERATIVE COLITIS, CYTOTOXICITY, LYMPHOCYTES (6730)*
ULCERATIVE COLITIS, DIAGNOSIS, COMPLICATIONS, TREATMENT (5949)
ULCERATIVE COLITIS, FAMILY (6737)
ULCERATIVE COLITIS, GRANULOMA, COLECTOMY (6734)
ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, LYMPHOCYTE TOXICITY, ALLO-

  - GENIC COLONIC EPITHELIAL CELL (5947)*
  - ULCERATIVE COLITIS, HYPNOTHERAPY (7502)
  - ULCERATIVE COLITIS, INTESTINAL COMPLICATIONS, LIVER, VASCULARITY, HEMORRHOIDS, EYES, ANAL PROLAPSE (5130)
  - ULCERATIVE COLITIS, LIVER DISEASE (6736)
  - ULCERATIVE COLITIS, NOSOLOGY, ETIOLOGY PATHOGENESIS (8991)
  - ULCERATIVE COLITIS, PROCTOCOLECTOMY (2766)
  - ULCERATIVE COLITIS, THERAPY (3513)
  - ULCERATIVE PROCTOSIGMOIDITIS (3512)
  - ULCERATIVE RECTOCOLITIS, TUMOR (5944)
  - ULTRASTRUCTURE, HISTOCHEMISTRY, LIPIDS (1582)*
  - UNDIAGNOSED CANCER, RECTUM, RACE DIFFERENCES (5921)
  - VARICES, SIGMOIDOSCOPY, RESECTION (5913)
  - VASCULAR OCCLUSION, RADIOLOGY (6704)
  - VIABILITY, ABDOMINAL PERFORATION, ARTERIOGRAPHY (1976)
  - VILLOUS ADENOMA, RECTUM (5940)
  - VOLVULUS, OBSTRUCTION, BARIUM ENEMA, TREATMENT (0491)
  - VOLVULUS, SIGMOID, SURGERY (3470)
- COLONOSCOPY
  - RETROGRADE (1818)
- COLOSTOMY
  - COLON, SURGERY (2724)
  - LARGE INTESTINE, HIRSCHSPRUNG'S DISEASE, INFANT (4266)*
  - LOCATION, BOWEL FUNCTION, DIET (8946)
- COMA
  - ACUTE HEPATITIS, EARLY DIAGNOSIS (5660)*
  - COMA DEPASSE, MORPHOLOGICAL CHANGE FUNCTIONAL CHANGE, LIVER (3565)
  - HEPATIC, ACUTE VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (7613)
  - HEPATIC, AMMONIEMIA, HEMODYNAMICS, HETEROLOGOUS PERFUSION, BLOOD PLATELETS (5215)
  - HEPATIC, EXTRACORPOREAL PERFUSION, CORTICOSTEROIDS, DELIRIUM TREMENS (6008)
  - HEPATIC, HETEROGRAFT, BABOON, MAN, CROSS CIRCULATION (5213)
  - HEPATIC, MANAGEMENT, VIRAL HEPATITIS (2117)
  - HEPATIC, PERFUSION (2837)
  - HEPATIC, URETEROSIGMOIDOSTOMY, CIRRHOSIS (6954)
  - HYPOGLYCEMIC, ISLET CELL TUMOR, HEMIPLEGIA, CENTRAL PAPALYSES, TOLBUTAMIDE TEST (5952)
  - JAUNDICE, HEPATIC CANCER, VIRAL HEPATITIS, HEMOLYTIC ANEMIA (5192)
  - LIVER, HEPATITIS (4417)
  - LIVER FAILURE, DIABETES, EXCHANGE TRANSFUSION (5240)
  - LIVER PERFUSION, HEMOSTASIS, HEPATIC COMA, LEUCOCYTES, PLATELETS, CLOTTING FACTORS (5283)*
  - NON-VIRAL HEPATITIS, EXCHANGE TRANSFUSION, STEROID (6063)
- COMPUTER DIAGNOSIS
  - LIVER DISEASE (2855)
- COMPUTER PROGRAM
  - DIFFERENTIAL DIAGNOSIS, LIVER DISEASE (2039)*
- CONGENITAL DISORDER
  - HEART DISEASE, HEPATIC CELL NECROSIS, DISSEMINATED, LOCALIZED, GASTROSCHISIS, OMPHALOCELE, DIAPHRAGM HERNIA (4366)*
  - OMPHALOCELE, GASTROSCHISIS, INCIDENCE (8840)
  - ZELLWEGER SYNDROME, RECESSIVE GENE, AUTOSOMAL (2845)
- CONSTIPATION
  - CHRONIC, HIRSCHSPRUNG'S DISEASE, ENLARGED COLON, AGANGLIONIC RECTUM (7482)
  - COLITIS, BISMUTH SUBNITRATE, KARAYA GUM (8946)
  - COW'S, MILK, DIARRHEA, DEHYDRATION (5366)
  - FECAL INCONTINENCE, SPINA BIFIDA, CHILDREN, TREATMENT (2721)
  - FUNCTIONAL GASTROINTESTINAL DISEASES, DRUG TREATMENT, AGE (8446)
  - LAXATIVES, AGED (0435)
  - RECTOPANBILINE GEL, DYSCHEZIA, FUNCTIONAL, CHRONIC (5094)
  - SURGERY, DOLICHOCOLON, COLON (3757)
  - THEORY (2722)
- CONTRACEPTIVE
  - LIVER FUNCTION, BILHARZIASIS (0534)*
  - ORAL, NORETHINDRONE, CHLORMADINONE ACETATE, SERUM ALANINE AMINOTRANSFERASE ACTIVITY, BSP (3955)
- CONTRAST MEDIA
  - BARIUM, ORAL, SMALL INTESTINE, INTUSSUSCEPTION (8897)*
  - CHOLANGIOCYSTOGRAPHY, GUINEA PIG, CERULEIN (2519)
  - CHOLECYSTANGIOGRAPHY, BILIVISTAN, TOLERANCE, CHOLELITHIASIS (4043)
  - CHOLECYSTOGRAPHY (3279), (7242)
  - GASTRECTOMY, SMALL INTESTINE, FUNCTION, MORPHOLOGY (2597)
  - LIVER FUNCTION, BILIRUBIN, CHOLESTEROL, ALKALINE PHOSPHATASE (2465)
  - OPAQUE INDICATOR, DIAGNOSIS, SMALL INTESTINE, OCCLUSION (0232)
  - PHENY PYRROLIDINE DERIVATIVE, ORAL CHOLECYSTOGRAPHY, METABOLISM, RAT, DOG, MAN, BILE (8677)
  - RENOGRAPHIC, DIATRIZOATE, GALLBLADDER (0964)
  - WATER-SOLUBLE, ESOPHAGUS, STOMACH, INTESTINE (3307)
- COPPER
  - ACETATE, BASIC, LIVER, 4-DIMETHYLAMINOAZOBENZENE, METABOLISM, CANCER (2422)
  - CERULOPLASMIN, BLOOD, ACUTE CHOLECYSTITIS, KIDNEY, SPLEEN, LIVER (2912)
  - CERULOPLASMIN, METABOLISM, LIVER (0156)
  - DISTRIBUTION, SUBCELLULAR, LIVER,

  - BILE DUCT LIGATION, RAT (2277)•
  - INTESTINAL, ABSORPTION, ILEUM, DOSAGE FORM, NEONATAL RAT (0758)•
- COPPER, 64
  - GASTROINTESTINAL TRACT, ABSORPTION, RAT (2353)
- COPROPHAGY
  - HOST PREVENTION, HYMENOLEPIS DIMINUTA DEVELOPMENT, RAT (2259)
- COPROPORPHYRIA
  - LIVER, ENZYMES, MAN (1351)•
- CORROSION
  - ESOPHAGUS, TREATMENT, MAN (1841), (1842)
- CORTICOSTEROID
  - ADRENALECTOMY, TYROSINE TRANSAMINASE, AMANITINE (6451)•
  - ANTIBIOTICS, ESOPHAGUS, CORROSIVE INJURIES, TREATMENT (0239)
  - BILE SECRETION, HEPATOCYTE (3221)
  - COMBINATIONS, ULCEROGENIC EFFECT, STOMACH, RAT (0273)•
  - EXCRETION, URINE, PEPTIC ULCER (2641)
  - GASTROENTEROPATHY, PROTEIN (4261)
  - METABOLISM, LIVER GLYCOGEN, FETAL AND NEWBORN (2429)
  - PREDNISONE, PREDNISOLONE, ABSORPTION, MAN, ULCERATIVE COLITIS (1294)•
  - 17-HYDROXYCORTICOSTEROIDS, METABOLISM CIRRHOSIS (2148)
  - STOMACH, MUCOSA, MUCUS (3342)•
  - THERAPY, VIRAL HEPATITIS, ALPHA-FETOPROTEIN, REGENERATION (6861)
  - ULCERATIVE COLITIS THERAPY, ACTH (4313)
  - URINARY EXCRETION, HYDROCORTISONE, VIRAL HEPATITIS (8350)
- CORTISONE
  - ACTH, ENZYME HISTOCHEMISTRY, JEJUNUM COLON, RAT (0169)
  - ENZYME, MUCOSA, INTESTINE, ACTH (3853)
  - NUCLEIC ACID SYNTHESIS, LIVER (3051)
- COUNTERCURRENT EXCHANGE
  - INTESTINAL VILLI, ABSORPTION, OXYGEN TRANSPORT, CAT (1627)•
- CROHN•S DISEASE
  - ANAL-RECTAL SPREAD, COLON, ILEUM (3477)
  - APPENDIX (1999)
  - APPENDIX, REGIONAL ENTERITIS (5067)
  - APPENDIX LOCALIZATION (4281)
  - AZATHIOPRINE, LARGE INTESTINE, ILEUM (0397)•
  - AZATHIOPRINE, STEROIDS (0399)
  - CARCINOMA, SMALL INTESTINE (1960)
  - CLINICAL EXPERIENCE, SURVEY (3424)
  - COLITIS, COLON (5884)
  - COLITIS, ILEITIS, MALABSORPTION (1211)
  - COLON, ANAL LESIONS, RADIOLOGY (9001)
  - COLON, DIAGNOSIS, SYMPTOMATOLOGY (9000)
  - COLON, DIAGNOSTIC PROBLEMS (0472)
  - COLON, DILATION (7430)•
  - COLON, DIVERTICULITIS, DIAGNOSIS (2697)
  - COLON, FOCAL (2759)
  - COLON, SURGERY (2758)
  - COLON, THERAPY (8224)
  - COLON, ULCERATIVE COLITIS (2763)•
  - CUTANEOUS LESION (3462)•
  - DIAGNOSIS, SYMPTOMS, PATHOLOGY, RADIOLOGY (4242)•
  - DUODENUM, HYPOTONIC DUODENOGRAPHY, RADIOLOGY (8926)
  - DUODENUM, RADIOLOGY, ANATOMOPATHOLOGY (8873)
  - ENTERITIS, ILEOCOLIC, PYELIC DILATION, URETERAL COMPRESSION (0438)
  - ENTEROPATHY, ULCER, STENOSIS (2664)
  - ESOPHAGITIS, ULCERATIVE, REGIONAL ENTERITIS (6604)
  - ETIOLOGY, PATHOGENESIS, THERAPY (8923)
  - FISTULAS, SURGERY, EVALUATION (2677)
  - GENETICS, REGIONAL ILEITIS (3436)•
  - GRANULOMATOUS DISEASE, ANORECTAL, PROLAPSE, COLECTOMY, FOLLICULAR LESIONS, SMALL INTESTINE (5880)
  - ILEOCECUM, APPENDICITIS (5861)
  - ILEOSTOMY, SURGERY (5068)
  - ILEO-VESICAL FISTULA (4245)
  - ILEUM, ANUS, FISTULA (2671)
  - ILEUM, COLON, RECTUM, ANUS (8159)
  - IMMUNOLOGIC TREATMENT (4243)
  - INCIDENCE (4289)
  - JEJUNUM, STENOSIS, MAN (0401)
  - KVEIM TEST, SARCOIDOSIS (0398)
  - LACTOSE MALABSORPTION, SYMPTOMS, DIETARY LACTOSE (5886)•
  - LARGE INTESTINE, ULCERATIVE COLITIS, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5946)•
  - OCCLUSION, SIGMOID COLON, ETIOPATHOGENESIS, THERAPY (0467)
  - PATHOPHYSIOLOGY, DIAGNOSIS, ANTIMETABOLITE THERAPY (8164)
  - PERITONITIS, INTESTINAL PERFORATION (8158)
  - PREGNANCY, STERILITY (5883)
  - PROTEIN LOSS, IMMUNOGLOBULIN, SERUM PROTEINS, PROTEIN CATABOLISM (5872)•
  - PROTEOLYSIS, FECES, ALBUMIN, IGG (2761)•
  - PSYCHOSOMATIC, STRESS FACTOR, ULCERATIVE COLITIS (3434)•
  - RECTOCOLITIS, HEMORRHAGIC, ARTICULAR SYMPTOMS (0473)
  - RECTUM, ANUS, APPENDIX (2000)
  - RECTUM, PROCTOCOLECTOMY (7309)
  - REGIONAL ILEITIS, LARGE INTESTINE(6716)
  - REGIONAL ILEITIS, REGIONAL ENTERITIS, SMALL INTESTINE (1288)
  - REGIONAL ENTERITIS, ANGIOGRAPHY, HYPERVASCULARIZATION (5066)
  - REGIONAL ENTERITIS, HEMOGLOBIN, SERUM ALBUMIN, AZATHIOPRINE TREATMENT (5881)
  - REGIONAL ENTERITIS, LARGE INTESTINE (1250)
  - SARCOIDOSIS, RELATIONSHIP (4246)
  - SECONDARY HEMOLYTIC ANEMIA, REGIONAL ILEOCOLITIS, SURGICAL TREATMENT (8927)
  - SMALL INTESTINE, LARGE INTESTINE, MORTALITY (5877)•
  - SMALL INTESTINE, MASSIVE RESECTION, DIET, PHOSPHORUS AND CALCIUM METABOLISM (8925)

  - SMALL INTESTINE, RADIOGRAPHY (5879)•
  - STOMACH AND COLON (3375)
  - SURGERY, MECKEL'S DIVERTICULUM, PERITONITIS (1943)
  - TAKAYASU DISEASE, TERMINAL ILEITIS, VASCULAR LESIONS (8924)
  - ULCERATIVE COLITIS, APPENDIX (7434)
  - ULCERATIVE COLITIS, COLON (6735)
  - ULCERATIVE COLITIS, REGIONAL ENTERITIS, CYTOSTATICS, INTESTINAL FLORA (5127)
  - ULCERATIVE COLITIS, THROMBOCYTOSIS, THROMBOSIS (8993)
  - VESICO-INTESTINAL FISTULA (6851)
  - X-RAY DIAGNOSIS, LARGE INTESTINE (3308)
- CRYOSURGERY
  - LIVER, INJURY, PARENCHYMAL BLEEDING, ELECTROCOAGULATION, RABBIT (0529)•
  - PANCREAS, PRIMATE (3527)
- CRYPT OF LIEBERKUH
  - MITOSIS, ILEUM (3093)
- CULTURE
  - HEPATOCYTE, ATPASE, CHICK EMBRYOS, MITOCHONDRIA, L-CYSTEINE, AMNIOTIC CELLS, FIBROBLASTS (4741)•
  - SMALL INTESTINE, VIRUS MULTIPLICATION, HUMAN EMBRYO (7998)
- CUTANEOUS LESION
  - WILSON'S DISEASE, LIVER (0569)
- CYST
  - BILIARY DUCT, BILIARY TRACT SURGERY (4549)
  - CHOLEDOCHAL, HYPOPLASIA, BILE DUCT (4551)
  - CHOLEDOCHUS, BILIARY TRACT (1485)
  - DUODENUM, BILE FLOW, STONES, OBSTRUCTION, PANCREATITIS, MUCOSA, PATHOLOGY (4131)•
  - ECHINOCOCCAL, THORACIC AREA, LIVER (4675)
  - FALCIFORM LIGAMENT, CONGENITAL (4405)
  - FALSE, PANCREAS, COLON INVOLVEMENT, INTESTINAL OCCLUSION (8231)
  - FALSE, PANCREAS, MYOCARDIAL ISCHEMIA, GANGRENE OF LEG (9009)
  - FOREGUT, ESOPHAGEAL DUPLICATION, SPINAL MALFORMATION (2569)
  - GASTRIC, MEDIASTINUM (1104)
  - GASTRIC WALL, RADIOLOGY, SURGERY (8875)
  - GIGANTIC, CHOLEDOCHUS (4558)
  - HYDATID, ARTERIOGRAPHY, LIVER (4681)
  - LIVER, UPPER ABDOMEN, ASCITES, DIAGNOSIS, ULTRASOUND (2157)
  - LYMPHATIC, MESENTERY, PSEUDO-APPENDICULAR SYMPTOMS (2218)
  - PANCREATIC, DIAGNOSIS ERROR, CHILDREN (3517)
  - PERITONEUM, HYDATID (2015)
  - STOMACH, SURGERY, DUPLICATION (3357)
- CYSTIC ARTERY
  - HEPATIC ARTERY, ABERRANT HEPATIC BRANCHES (0926)
- CYSTIC DUCT
  - CHOLANGIOGRAPHY, PROCEDURE CANNULATION (2505)
- CYSTIC FIBROSIS
  - DIGESTIVE SYNDROME, PANCREAS (4335)
  - H. INFLUENZAE (0500)•
  - INTESTINAL AND PULMONARY COMPLICATIONS (0524)
  - METACHROMASIA, INDICATIONS (0233)
  - MUCOUS SECRETIONS, RECTAL MUCOSA, INSULIN (3464)•
  - MUCOVISCOIDOSIS, THROMBOCYTOPENIA, INFANT (2770)•
  - PANCREAS, FAT (4344)
  - PANCREAS, INCIDENCE, FAR EAST (4328)•
  - PANCREAS, INFANT, MECONIUM ILEUS, JAPAN (2672)
  - PANCREAS, KALLIKREIN, SALIVA, PLASMA, URINE (1306)
  - PANCREAS, PATHOLOGY, ULTRASTRUCTURE, FIBROBLASTS (2769)•
  - RECTAL MUCUS, HISTOCHEMISTRY (4329)•
  - VAS DEFERENS, FETUS (0509)
- CYSTINURIA
  - AMINO ACIDS, INTESTINAL ABSORPTION, MUCOSAL TRANSPORT DEFECT (1963)•
- CYSTITIS
  - BACILLARY, DYSENTERY, SHIGELLA (2225)
- CYSTOPLASTY
  - INTESTINE, MORTALITY, MORBIDITY (1183)
- CYTOCHROME
  - MICROSOME, LIVER, STORAGE EFFECT (3078)
  - P-450, CIRRHOSIS, LIVER, DETOXICATIONS (2135)
  - P-450, HEME, LIVER, MICROSOME, PORPHYROGENIC AGENT (3041)
  - REDOX POTENTIAL, LIVER, RABBIT (5458)
- CYTOGENESIS
  - LIVER, EXPLANT CULTURE, MORPHOLOGY (1512)•
- CYTOLOGY
  - ACINAR CELL, PANCREAS, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
  - BRUSHING, ESOPHAGUS, STOMACH, CANCER, DIAGNOSIS (5654)•
  - CARDIA, CANCER, DIAGNOSIS (4042)
  - DIAGNOSIS, ESOPHAGUS, CANCER, SPECIMEN COLLECTION, INSTRUMENT, GOOD TOLERANCE (5665)
  - DIAGNOSIS, STOMACH (5714)
  - ENDOTHELIAL CELLS, LIVER, CHOLINESTERASE, LIVER MESODERM, CHICK (4736)
  - GASTROSCOPY, GASTRIC CARCINOMA (6546)
  - HEPATIC CELL, CHOLESTEROL SYNTHESIS, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
  - HEPATOCYTE, AMYLOID, DUCK (5184)
  - HEPATOCYTE, NUCLEUS, MEMBRANE (4731)
  - HEPATOCYTE, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE, NICOTINE (4782)
  - HEPATOCYTE, ULTRASTRUCTURE, METAMORPHOSIS (6318)
  - HEPATOCYTE, WALL, CC14 DAMAGE, TAURINE N-CARBODITHIOATE (6080)
  - PANCREAS, NUTRITION, AGE (7103)
  - TUMOR, STOMACH, DIAGNOSIS (4930)
- CYTOPLASM
  - LIVER, METABOLISM (3048)
  - LIVER, NADP-DEPENDENT, ISOCITRATE DEHYDROGENASE, PIG (6335)
  - LIVER, PROTEIN, HEMOGLOBIN SYNTHESIS, RABBIT (7800)
- CYTOSTATIC
  - 5-FLUOROURACIL, RADIATION, CARCINOMA, PANCREAS (5136)•

  - GASTROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, STEROIDS (6982)
  - MITOMYCIN C, EHRLICH ASCITES TUMOR CELLS, IN VITRO, TRANSPORT (6790)
  - MITOMYCIN C, LIVER, ULTRASTRUCTURE, RABBIT (4709)*
  - 1-B-D-ARABINOFURANOSYLCYTOSINE, COLONIC CARCINOMA (7455)*
- CYTOSTATIC DRUG
  - MALABSORPTION, INTESTINE, MUCOSA (3732)

- DDT
  - LIVER, ENZYME, METABOLISM (3580)
- DECOMPRESSION
  - SMALL INTESTINE, SURGERY, EMERGENCY (1189)
  - SURGICAL, OBSTRUCTION, BILE DUCT (2934)
- DEFACTION
  - CONSTIPATION, TREATMENT, SPINA BIFIDA, CHILDREN (2721)
- DEGENERATION
  - MALIGNANT, STOMACH, POLYP, ADENOMA (5785)
  - MUSCLE LAYERS, MEGADUODENUM (2585)
- DEHYDRATION
  - HYPERTONIC, ISOTONIC-HYPOTONIC, DIARRHEA, TREATMENT (2238)
- DERMATITIS
  - ENTEROPATHIC, DANBOLT-CLOSS SYNDROME (1953)
  - HERPETIFORMIS, GASTROINTESTINAL DISEASE (3446)*
- DERMATOMYOSITIS
  - GASTROINTESTINAL TRACT (2969)
- DETOXIFICATION
  - LIVER, AMINO ACID (3609)
- DEVELOPMENT
  - LIVER, DIFFERENTIATION, FUNCTIONAL ACTIVITY, HISTOCHEMISTRY (0021)
  - LIVER, MICROSOME, MITOCHONDRIA (2333)*
- DIABETES
  - HORMONALLY INDUCED, SPLANCHNOMEGALY, TRANSPLANTABLE PITUITARY TUMORS, PARTIALLY PANCREATECTOMIZED RATS (1691)
  - LIVER, RETICULO-ENDOTHELIAL CELL, ULTRASTRUCTURE (1574)*
- DIABETES MELLITUS
  - ACIDOSIS, HEPATOMEGALY (2833)
  - ANTIBODY, DELOMORPHOUS CELLS, INTRINSIC FACTOR (2952)
  - BENZOBRAMARONIUM TREATMENT, EFFECT (3660)
  - BILIARY LITHIASIS (1474)
  - BROMOSULPHALEIN, STORAGE, TRANSPORT, CHRONIC ALCOHOLISM (2065)
  - CELIAC DISEASE, GLUTEN-FREE DIET (1217)
  - CIRRHOSIS, GLUCOSE, INSULIN METABOLISM, POTASSIUM CHLORIDE (6121)
  - DIARRHEA, JEJUNAL BIOPSY (1203)
  - DIGESTIVE TRACT (4649)
  - ENZYME, TRYPSIN (2866)
  - FAT ABSORPTION, STEATORRHEA, PANCREAS (1624)*
  - GASTRECTOMY, HYPERGLYCEMIA, HYPERINSULINISM, JEJUNUM (4982)
  - GASTRIC ULCER, INSULIN, HYDROCHLORIC ACID, GASTRIC JUICE (2599)
  - GASTROINTESTINAL FUNCTION, MALASORPTION (0468)
  - HEPATIC FAILURE, EXCHANGE TRANSFUSION, COMA (5240)
  - HEPATITIS, ICTERUS (5269)
  - INSTANT, HEPATIC METABOLISM, MANNOHEPTULOSE, HYPERGLYCEMIA (5609)
  - LIVER, ULTRASTRUCTURE (2296)
  - LIVER DISEASES (2042)
  - LIVER FUNCTION, ANTIDIABETIC (1404)
  - LIVER INJURY, CIRRHOSIS (7597)
  - MALABSORPTION, DIARRHEA (3757)
  - PANCREAS, MUCOVISCIDOSIS, CARBOHYDRATE METABOLISM (5959)
  - PANCREATITIS (3533)
  - PANCREATITIS, ALCOHOLISM (5157)
  - POST VIRAL HEPATITIS, CHILD (0631)
  - PULMONARY TUBERCULOSIS, PROPHYLAXIS (2591)
  - STEROID HORMONES, LACTATE, PYRUVATE, METABOLITES, ENZYMATIC SYSTEM, HYPOGLYCEMIA, NEONATE (6240)
  - STOMACH, CANCER (7383)
- DIAGNOSIS
  - ABDOMINAL DISEASES, ANGIOGRAPHY, ISOTOPE SCANNING (7220)*
  - ABDOMINAL MASS, RADIOLOGY, NEONATE (6963)
  - ACUTE ABDOMEN, SURGERY (3738)
  - ACUTE APPENDICITIS, SURGERY, PERFORATION, GANGRENE (2744)
  - ACUTE APPENDICITIS, X-RAY (5704)
  - ACUTE PANCREATITIS, AMYLASE DETERMINATION, EARLY LAPARATOMY (8738)
  - ACUTE PANCREATITIS, PROBLEMS (5713)
  - ACUTE PSEUDOCHOLECYSTITIS, APPENDICULAR MUCOCELE, SURGERY (2735)
  - ACUTE VIRAL HEPATITIS, RING PRECIPITATION REACTION (5726)
  - ACUTE VIRAL HEPATITIS, SERUM GUANASE, SGPT, LIVER DISEASE (5686)
  - AMEBIASIS, STAINED SMEAR (1552)
  - AMEBIC ABSCESS, LIVER (7753)
  - AMPULLA OF VATER, TREATMENT (7662)
  - AMYLOCLASTIC TECHNIQUE, DUODENAL JUICE, AMYLASE, AUTOANALYZER (4812)
  - ANGIOGRAPHY, ABDOMEN (4931)
  - ANGIOGRAPHY, GASTROINTESTINAL BLEEDING (7752)
  - ANGIOGRAPHY, GASTROINTESTINAL HEMORRHAGE, ABDOMINAL AORTA, CAVOGRAPHY, PATHOMORPHISM, BARIUM, GALLBLADDER (4949)
  - ANGIOGRAPHY, HEPATIC ARTERY, PORTAL HYPERTENSION (6526)
  - ANGIOGRAPHY, HEPATIC ARTERY LIGATION, COLLATERAL CIRCULATION, DEARTERIALIZATION (5981)*
  - ANGIOGRAPHY, PORTAL HYPERTENSION (6540)
  - ANGIOGRAPHY, STOMACH, CANCER (5710)
  - ANGIOGRAPHY, STOMACH, PANCREAS, LIVER, CIRRHOSIS, CANCER, PANCREATITIS (5729)

ANGIOGRAPHY, TUMOR, HYPOCHONDRIUM, CHILDREN (6525)
AORTOGRAPHY, ABDOMEN, SURGERY (5359)
APPENDICITIS, COLON (1977)
ARTERIOGRAPHY, CELIAC DISEASE, PANCREAS, ADENOPATHY, ISCHEMIA (5348)
ARTERIOGRAPHY, INTESTINAL HEMORRHAGE, DIVERTICULI (5351)
ARTERIOGRAPHY, LIVER, ANEURYSM, POLYARTERITIS (4904)
ARTERIOGRAPHY, PANCREATIC TUMOR, ADENOMA, MICROSCOPIC EXAMINATION (5146)
ARTERIOGRAPHY, PORTAL HYPERTENSION, LIVER CIRCULATION (6544)
AUTOANALYZER, PANCREATITIS, AMYLASE (4942)
AUTOIMMUNE HEPATITIS, SEROLOGY (5669)
AUTORADIOGRAPHY, CANCER, STOMACH, CELL PROLIFERATION (5788)
AUTORADIOGRAPHY, SMALL INTESTINE, STENOSIS, RADIOLOGY, HISTOLOGY (6194)
BARIUM OXIDE ENEMA, LARGE INTESTINE (7276)
BETAZOL TEST, GASTRIC SECRETION, PYLOROPLASTY, VAGOTOMY, AMINOETHYLPYRAZOL (4943)
BILE, CHOLECYSTITIS, PROTEIN (2915)
BILE COLLECTION (7182)
BILIARY TRACT FISTULA, X-RAY (5706)
BIOPSY SPECIMEN, TRANSDUODENAL SPHINCTEROTOMY, TECHNIQUE, VATER'S PAPILLA (4944)
CAMERA, GASTRIC CARCINOMA (0309)
CANCER, RECTUM, SURGERY (2738)
CANCER, RIGHT COLON, OBSTRUCTION, APPENDICITIS, STOMACH (2520)
CARCINOMA, HEPATIC FLEXURE, BARIUM ENEMA (3469)
CARCINOMA, PANCREAS HEAD (8241)
CHOLANGIOCHOLECYSTOGRAPHY, BILE DUCT, RADIOLOGY (4917)
CHOLANGIOGRAPHY, ANASTOMOSIS, PAPILLECTOMY, CATHETER, DUODENUM, RETROGRADE FILLING, BILE DUCTS (5676)
CHOLANGIOGRAPHY, BILE DUCT PERFORATION NEONATE, SURGERY (6148)
CHOLANGIOGRAPHY, BILIGRAFIN, EXCRETION, LIVER, BLOOD FLOW, CONTRAST MEDIA (4873)•
CHOLANGIOGRAPHY, CHOLECYSTECTOMY, CHOLECYSTITIS (6135)
CHOLANGIOGRAPHY, INFUSION, GALLBLADDER (5727)
CHOLANGIOGRAPHY, OPERATIVE, BILE DUCT STONE (5690)
CHOLANGIOSCOPY, CALCULI (6557)
CHOLECYSTANGIOGRAPHY, BILIVISTAN, TOLERANCE, CHOLELITHIASIS (4043)
CHOLECYST-CHOLANGIOGRAPHY, INFUSION, ADIPIODON, LIVER DISEASE, OBESITY, CONTRAST-FLUID INTOLERANCE (5252)•
CHOLECYSTITIS, RADIOLOGY, GALLBLADDER (5715)
CHOLECYSTOCHOLANGIOGRAPHY (7286)
CHOLECYSTOCHOLANGIOGRAPHY, CHOLEVID, DIAGNOSIS (5707)
CHOLECYSTOCHOLANGIOGRAPHY, CONTRAST MEDIA, CHOLECYSTITIS, CHOLELITHIASIS (7290)
CHOLECYSTOGRAPHY, CHOLANGIOGRAPHY, BILE DUCT (4906)
CHOLECYSTOGRAPHY, GALLBLADDER, DUPLICATION, CONGENITAL (5313)
CHOLECYSTOGRAPHY, GALLSTONE (4918)
CHOLEDOCHAL CYST, HEPATOSCINTOGRAPHY (7292)
CHOLELITHIASIS, CHOLECYSTECTOMY, TIME (2909)
CHOLELITHIASIS, SURGERY (7225)
CHOLERA, SEROLOGY, EPIDEMIOLOGY (4586)
CHRONIC DIARRHEA, FECES (2204)
CHRONIC GASTRITIS, GASTRIC MUCOSA (7264)
CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOGLOBINS (6115)•
CHRONIC HEPATITIS, HEPATIC CIRRHOSIS, DRUG EFFECT, BLOOD (2888)
CHRONIC PANCREATITIS, MANAGEMENT (6760)
CINEGASTROSCOPY (6560)
CIRRHOSIS, LIVER BIOPSY (5672)
COAGULOGRAM, THROMBOLLASTOGRAM, GASTRIC ULCER (7403)
COLON, LYMPHATICS, LYMPHOGRAPHY (6505)
COLON, PATHOLOGY, RADIOLOGY, COLITIS (3277)
COMPENSATED, CIRRHOSIS, INDOCYANINE-GREEN TEST (8016)
COMPLEX RECTAL HERNIA, SURGERY (7462)
CRURAL HERNIA, RESECTION, SURGERY (2743)
CSO-CARDIAL TUMORS, RADIOLOGY (2539)
CYST, ECCHINOCOCCUS, LIVER, SCAN (4887)•
CYSTOMETRIC EXAMINATION, RECTUM, BLADDER PRESSURE, RETENTION, SURGERY (5095)
CYTOLOGY, CARD'A, CANCER (4042)
CYTOLOGY, GASTRIC DISEASES (7284)
CYTOLOGY, LYMPHOMA, STOMACH (4890)•
CYTOPHOTOMETRY, NUCLEAR, DNA, LIVER, ACRIDINORANGE, PROTEIN BIOSYNTHESIS, GUINEA PIG, AGE FACTOR (4715)
DIFFERENTIAL, ACUTE PANCREATITIS, GASTRIC ULCER PERFORATION (7234)
DIFFERENTIAL, ANGIOGRAPHY, PANCREATITIS, CARCINOMA (8034)
DIFFERENTIAL, CECAL POLYPOSIS, DOUBLE CONTRAST TECHNIQUE, BENIGN TUMOR (8948)
DIFFERENTIAL, CLINICAL, CHEMICAL, LIVER DISEASES (8780)
DIFFERENTIAL, GASTROINTESTINAL HEMORRHAGE, INTESTINAL CONTRACTIONS, HISTOLOGY (8781)
DIFFERENTIAL, GLYCOGENOSES, HEPATOMEGALY, THERAPY (8753)
DIFFERENTIAL, JAUNDICE, ETIOLOGY (8031)
DIFFERENTIAL, JAUNDICE, MAC LAGAN TEST ALKALINE PHOSPHATASE, VIRAL HEPATITIS, NON-INFECTIOUS CHOLESTASIS (8749)
DIFFERENTIAL, JAUNDICE, PHOSPHATASEMIA BILIRUBINEMIA, RATIO (8773)

DIFFERENTIAL, LIVER DISEASES, COLLOIDAL GOLD (7218)*
DIFFERENTIAL, LIVER DISEASES, IMMUNOGLOBULIN DETERMINATION (8779)
DIFFERENTIAL, MALABSORPTION, DUODENAL MUCOSA, MICROSCOPY (8740)
DIFFERENTIAL, TUMORS, PANCREAS, LYMPHOSARCOMA, CARCINOMA (8790)
DIFFERENTIAL, VITAMIN B12 RETENTION TEST (0202)
DISTOMATOSIS, CAPSULITIS, LIVER BIOPSY (4908)
DUODENAL BIOPSY, STOMACH BIOPSY, RADIOLOGY (2523)
DUODENAL ULCER, DUODENOSCOPY, SCOPIC BIOPSY (6645)
DUODENOJEJUNOSTOMY, DUODENAL ULCER, AMPULLA OF VATER (6561)
DYSENTERY, BACTERIOLOGY (5712)
DYSPHAGIA, PHYSIOPATHOLOGY, ADULT (8776)
E.COLI, H-ANTIGEN, IMMUNOFLUORESCENCE (8720)
ECHINOCOCCOSIS, RHEOHEPATOGRAPHY, PARASITE (5703)
E. HISTOLYTICA, AGAR GEL DIFFUSION, INDIRECT HEMAGGLUTINATION (4659)*
EMERGENCY PERITONEOSCOPY, TRAUMA (6558)
ENDOSCOPY, CARDIA, TUMORS, ESOFIBROSCOPE, BIOPSY, PSEUDO-TUMORS, MALIGNANCY (5663)
ENDOSCOPY, CYTOLOGY, BIOPSY, ESOPHAGUS STOMACH, CANCER, ULCER (6534)
ENDOSCOPY, ESOPHAGEAL VARICES, HEMORRHAGE, SCLEROSIS (4960)
ENDOSCOPY, ESOPHAGUS, STOMACH, ANESTHESIA, ULCER (4953)
ENDOSCOPY, GASTRIC CANCER (7277)
ENDOSCOPY, GASTRIC, POLYPOID LESIONS (6569)
ENDOSCOPY, GASTROINTESTINAL TRACT, DIAZEPAM (4926)
ENDOSCOPY, HEMORRHAGE, GASTROINTESTINAL TRACT, RADIOLOGY (4924)
ENDOSCOPY, PORTAL HYPERTENSION, ESOPHAGEAL VARICES (6907)
ENDOSCOPY, STOMACH, GASTRITIS, GASTROCAMERA (5815)
ENDOSCOPY, TELANGIECTASIA, HEMORRHAGE (5391)
ENDOSCOPY, ULCER HEALING, MALIGNANCY, RADIOLOGY (5854)
ENTERITIS, CHARACTERISTIC, H-ANTIGEN, IMMUNOFLUORESCENCE, SYMPTOMATOLOGY (8722)
ENTERITIS, COLI RESISTANCE TO ANTIBIOTICS, CHARACTERISTIC H-ANTIGEN (8721)
ENTERITIS, IMMUNOFLUORESCENCE, CHARACTERISTIC, H-ANTIGEN, EPIDEMIOLOGY (8723)
ENZYME, CIRRHOSIS, OBSTRUCTIVE JAUNDICE, CHRONIC HEPATITIS, CHOLECYSTITIS (5725)
ENZYMOLOGY, LIVER, BILIARY TRACT (7247)
EPIDEMIOLOGY, FAMILY CONTACTS (4568)*
ESOPHAGEAL LESIONS, GASTRECTOMY (7237)
ESOPHAGORRONCHIAL FISTULA, PULMONARY SUPPURATION (5762)
ESOPHAGOSCOPY (6529)
ESOPHAGOSCOPY, FIBERESOPHAGOSCOPE (4927)
ESOPHAGOSCOPY, FUNDOPLICATION, HIATAL HERNIA, NISSEN'S TECHNIQUE, ULCERS, HEMORRHAGE (5739)
ESOPHAGOSCOPY, PERFORATION, MORTALITY, RUPTURE, DILATATION (4955)
ESOPHAGUS, ATRESIA (1829)
ESOPHAGUS, ENDOSCOPY, VALIUM, I.V. (2541)
ESOPHAGUS, RUPTURE, SURGERY (3332)
FIBERGASTROSCOPE, GASTRIC BIOPSY (6553)
FIBEROPTIC COLONOSCOPY (7276)
FIBEROPTIC ENDOSCOPY, UPPER GASTROINTESTINAL HEMORRHAGE (0189)*
FIBEROPTIC ESOPHAGOSCOPY, CARDIA, UPPER STOMACH (6543)
FISHER'S DISCRIMINANT ANALYSIS, OBSTRUCTIVE JAUNDICE, ACUTE VIRAL HEPATITIS (7248)
FLEXIBLE FIBERSIGMOIDOSCOPY (7294)
FLUORESCENT ANTIBODIES, COLIENTERITIS, INFANTS (7287)
GALLBLADDER, HISTOLOGY, PATHOLOGY, TECHNIQUE, CHOLESTEROLOSIS, ADENOMYOMATOSIS, HYPERPLASIA (4527)*
GALLBLADDER DISEASE, RADIOISOTOPE (5730)
GAMMAGRAPHY, LIVER, HYDATIDOSIS (4086)
GASTRIC CARCINOMA, RADIOLOGY, CYTOLOGY, ENDOSCOPY (0268)*
GASTRIC DILATATION, PREVENTIVE MEASURE (8046)
GASTRIC SARCOMA, GASTROSCOPY (7238)
GASTRIC SECRETION, QUANTITATIVE DETERMINATION (7256)
GASTRIC SECRETION, SURGERY, ULCER (7254)
GASTROCAMERA, DIRECT VISION, CARCINOMA (6571)
GASTROCAMERA, STOMACH, EARLY CARCINOMA (5819)
GASTROFIBERSCOPE, BIOPSY, GASTRIC CANCER (6545)
GASTROINTESTINAL HEMORRHAGE, GASTRIC ULCER (7291)
GASTROINTESTINAL OBSTRUCTION, FETUS, PRENATAL, AMNIOCENTESIS (3415)*
GASTROINTESTINAL TRACT, ENDOSCOPY, RADIOLOGY, GASTRIC FUNCTION TESTS (7251)
GASTROSCOPY, CANCER DIAGNOSIS, GASTROCAMERA (5720)
GASTROSCOPY, CYTOLOGY, GASTRIC CARCINOMA (6546)
GASTROSCOPY, ESOPHAGUS, STOMACH, COMPLICATION (5680)
GASTROSCOPY, GASTRIC HEMORRHAGE (5791)
GASTROSCOPY, GASTRIC ULCER, HEMORRHAGE (4954)
GASTROSCOPY, GASTRITIS (6641)
GASTROSCOPY, GASTRITIS, HISTOLOGY (5003)
GASTROSCOPY, GASTRITIS, ULCER, TUMOR, GASTRECTOMY (2534)

GASTROSCOPY, PYLORUS, STENOSIS, CERVIX SIGN (5002)
GASTROSCOPY, STOMACH, FIBERSCOPY, GASTRO-CAMERA, CARCINOMA, SERIAL EXAMINATIONS (4923)
GASTROSCOPY, ULCER (5717)
GRANULOMATOUS COLITIS (2757)
HEMORRHAGE, ESOPHAGUS, ULCER (2982)
HEMORRHAGE, GASTROINTESTINAL TRACT (7245)
HEPATIC INJURY, BSP TEST, STATISTICAL EVALUATION, LIVER PROTECTION, ALLYL ALCOHOL, RAT (4895)
HEPATIC PHOTOSCAN, LIVER DISEASE, HEPATIC METASTASIS (4016)*
HEPATOCELLULAR FAILURE, CLINICAL FEATURES (6022)
HEPATOPORTOGRAPHY, OILY CONTRAST MEDIUM, INTRAHEPATIC VESSELS (5702)
HERNIA, BOWEL (3429)
HETEROLOGOUS PERFUSION, HEPATIC COMA, BLOOD PLATELETS, AMMONIEMIA (5215)
HIATAL HERNIA, ESOPHAGUS TREATMENT (7316)
HIDDEN ABDOMEN INJURIES (7236)
HODGKIN'S DISEASE, ABDOMEN, SURGERY (4911)
HYPERKINETIC PORTAL HYPERTENSION (7635)
INTESTINAL GAS, RADIOLOGIC APPEARANCE (8010)*
I.V. PYELOGRAPHY, COLONIC PREPARATION, LAXATIVES, DULCODOS, DULCOLAX, SENOKOT (5331)*
ILEUS, OMENTUM MAJUS, TUMOR, SURGERY (2747)
IMMUNOELECTROPHORESIS, HYDATID CYST, LIVER, ARTERIOGRAPHY, CYSTECTOMY (5402)
IMMUNOFLUORESCENCE, DISTOMATOSIS, LAPAROSCOPY, COMPLEMENT FIXATION (4907)
INDOCYANINE GREEN DYE, LIVER FUNCTION, BLOOD FLOW, DENSITOMETER (4840)*
IRON-BINDING CAPACITY, HEMOCHROMATOSIS, GASTROFERRIN (5071)*
ISOENZYME, LIVER (4037)
ISOTOPE SCANNING, ULTRASONIC SCANNING, LIVER DISEASE (2512)*
JEJUNAL BIOPSY (7281)
LABORATORY, GASTROINTESTINAL TRACT (7263)
LACTATE DEHYDROGENASE, GASTRIC JUICE, CANCER, PRECANCEROUS STATE (2517)
LAPAROSCOPY, ABDOMINAL TRAUMA, PERITONEAL HEMORRHAGE. HEMATOMA, SURGERY (4909)
LARGE INTESTINE, DOUBLE CONTRAST TECHNIQUE (5722)
LESION, LIVER, VASCULARIZATION, SCAN (4891)*
LIVER, ABSCESS, SCINTILLOGRAPHY (4081)
LIVER, AMEBIASIS, THERAPY (3018)
LIVER, ENZYME EXCRETION (7246)
LIVER, HEPATITIS, ACUTE, GRANULOMATOUS, BIOPSY, HISTOPLASMOSIS (4448)*
LIVER, LUNG, HYDATID CYST (3007)
LIVER, LUPOID HEPATITIS, AUTOIMMUNITY (2085)
LIVER, SCANNING, RADIOALBUMIN, METASTASES (5673)
LIVER, SPLEEN, RUPTURE (2088)
LIVER BIOPSY, COMPLICATIONS (7271)
LIVER BIOPSY, MENGHINI NEEDLE, MODIFIED ANGLE, SHARPENED NEEDLE (5657)*
LIVER CHRONIC DISEASES, ALKALINE PHOSPHATASE, CIRRHOSIS, CHRONIC HEPATITIS (4045)
LIVER CYSTATHIONINE, ASSAY (4735)
LIVER DEHYDROGENASE, ASSAY (4737)
LIVER DISEASE, ENZYMOLOGY (7550)
LIVER DISEASE, SPLENOPORTOGRAPHY, ARTERIOGRAPHY, CARCINOMA, SURGERY (4952)
LIVER ENZYMES, GARGOYLISM, GLYCOGEN STORAGE DISEASE (6531)
LIVER LIPID, SPECTROPHOTOTOMETRIC METHOD, FATSPECIFIC DYE (5164)
LIVER SCAN, 113M INDIUM (5685)
LIVER SCAN, AMEBIC ABSCESS (7016)
LIVER SCAN, RADIOISOTOPE SCAN, LIVER DISEASE, LIVER ABSCESS, AMEBIC ABSCESS, CIRRHOSIS (4889)*
LIVER SCAN, RESUSCITATION, RADIOISOTOPE (5724)
LIVER SCAN, SPACE-OCCUPYING LESION, HEPATIC TUMOR, PERITONEOSCOPY (5659)*
LIVER TRAUMA, TREATMENT (8028)
LIVER TUMOR, SCINTILLATION CAMERA (5670)
LYMPHOGRAPHY, RECTAL CANCER (7266)
MALABSORPTION, CARATENE-BETA, BLOOD, LIPIDS, PANCREATITIS, CELIAC DISEASE, ILEO-COLIC SHUNT, REGIONAL ENTERITIS, GASTRIC RESECTION (3276)
MANOMETRY, BILE DUCT, OBSTRUCTION, RADIOLOGY (5708)
MANOMETRY, ESOPHAGEAL-GASTRIC HERNIA, DIAGNOSIS, SURGERY (5718)
MANOMETRY, ESOPHAGUS, LUNG RESECTION (5752)
MENETRIER'S DISEASE, GASTRITIS, RADIOLOGY (7348)
MESENTERIC MICROANGIOGRAPHY, X-RAY SENSITIVE VIDICON (6342)
NEEDLE BIOPSY, LIVER, METASTASIS, STOMACH, SCANOGRAPHY (2524)
OPERATIVE CHOLANGIOGRAPHY, ERROR (5697)
OPISTHORCHOSIS, GALLBLADDER, RADIOLOGY, MOTOR ACTIVITY (3003)
PANCREAS, CARCINOMA, SELENO METHIONINE SCANNING (8039)
PANCREAS, GLUCOSE TOLERANCE TEST, AMYLASEMIA, CHRONIC PANCREATITIS (6523)*
PANCREAS, PSEUDOCYST (2775)
PANCREAS, ZOLLINGER-ELLISON SYNDROME (2773)
PANCREAS TUMOR, SELENOMETHIONINE SCAN, DIARRHEA, HISTOLOGY (8238)
PANCREATIC INJURY, SERUM AMYLASE, LAPAROTOMY (8237)
PANCREATIC JUICE, COLLECTION, SURGERY (4772)
PANCREATIC LESIONS, CARCINOMA, PANCREATITIS (7216)*

ANCREATIC SCANNING, PARATHYROID, STINING AGENTS, DOG (5650)•
ANCREATIC SECRETION, DISEASES (7285)
ANCREATITIS, LIPASE, AMYLASE (3283)
EDIATRIC PATHOLOGY, LIVER SCAN, SPLEEN SCAN, 99M TC, 113M IN (5719)
EDUNCULATED HAMARTOMA, ESOPHAGUS (6586)
EPTIC ULCER, CHILDREN (7406)
ER ORAL BIOPSY, SMALL INTESTINE, CHILDREN (7253)
ERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY (7244)
ERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CARCINOMA, CHOLELITHIASIS (6554)
ERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY, CONTRAST MEDIA (6556)
ERFUSION, HEPATIC ARTERY, ANTIMETABOLITES (6852)
ERFUSION STUDY, DIGOXIN ABSORPTION, INTESTINE, RAT (5504)
ERITONEAL DIALYSIS, HEPATIC FAILURE, DRUG INTOXICATION (6964)
ERITONEAL DIALYSIS, INFECTION (6957)
ERITONEAL DIALYSIS, METABOLIC COMPLICATIONS, GASTROINTESTINAL DISTURBANCES, RESPIRATORY DIFFICULTIES, CARDIOVASCULAR DISTURBANCES (6165)
ERITONEAL DIALYSIS, REYE'S SYNDROME, HEPATOMEGALY (6018)
ERORAL BIOPSY, SMALL INTESTINE, ENTERITIS, SPRUE (6530)
H, FECES, AMEBIC DYSENTERY (7680)•
HOTOSCANNING, SCINTIGRAM, LIVER METASTASES, CIRRHOSIS, RADIOIODINE, COLLOIDAL RADIOGOLD (4922)
OSTOPERATIVE DISORDERS, INTESTINE (7278)
OSTOPERATIVE ILEUS, ADHESIONS, CARCINOMA, MECHANICAL BLOCK (6574)
OSTOPERATIVE INTESTINAL OBSTRUCTION, ILEUS, X-RAY (5060)
RECANCEROUS INDICATIONS, INTESTINE, STOMACH, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
RIMARY HEPATIC CARCINOMA, SERUM ALPHA-FETOPROTEIN (7530)•
ROCTOSIGMOIDOSCOPY (7274)
ROLAPSE, GASTRIC MUCOSA, DUODENUM, RADIOLOGY (2592)
ADIOGRAPHY, ALIMENTARY CANAL, BARIUM MEAL, ULCER, TUMOR THORAX, LUNG (4947)
ADIOGRAPHY, ANUS, PERIANAL PAGET'S DISEASE, SURGERY (5908)
ADIOGRAPHY, BARIUM, ESOPHAGRAM, FLUOROSCOPY (5649)•
ADIOGRAPHY, CROHN'S DISEASE, SMALL INTESTINE, MALABSORPTION SYNDROME (5879)•
ADIOGRAPHY, HEMORRHAGE, SMALL INTESTINE, COLON, RECTUM (4900)
ADIOGRAPHY, STOMACH, CARCINOMA, POLYP, ULCER (6555)
ADIOLOGICAL, CANCER, LARGE INTESTINE (0188)•
RADIOLOGY, ABDOMEN, TRAUMA, CHILDREN (4920)
RADIOLOGY, BARIUM SULFATE, GASTROINTESTINAL MOTILITY (4898)
RADIOLOGY, CHRONIC PANCREATITIS (6759)
RADIOLOGY, COLON, PREPARATION (4925)
RADIOLOGY, COLON, VASCULAR OCCLUSION (6704)
RADIOLOGY, COLON, VASCULAR OCCLUSION, COLITIS (5918)
RADIOLOGY, DIVERTICULITIS, DIVERTICULOSIS, DIFFERENTIATION, COLON (5681)
RADIOLOGY, EXTRAHEPATIC BILE DUCT, CARCINOMA (6138)
RADIOLOGY, GALLBLADDER, CHOLELITHIASIS (5320)
RADIOLOGY, GALLBLADDER, HYDROP (5319)
RADIOLOGY, GASTROINTESTINAL TRACT, CONTRAST MEDIA (6527)
RADIOLOGY, GASTROINTESTINAL TRACT, DIVERTICULA, DIVERTICULITIS, DIAGNOSIS (6197)
RADIOLOGY, HIATAL HERNIA, RADIOLOGY (5701)
RADIOLOGY, INTRAPERITONEAL COLONIC PERFORATIONS (7491)
RADIOLOGY, ISCHEMIC COLITIS (7468)
RADIOLOGY, JAUNDICE, CHOLANGIOGRAPHY, DUODENOGRAPHY (5689)
RADIOLOGY, LARGE BOWEL, PSEUDO-OBSTRUCTION (6705)
RADIOLOGY, LARGE INTESTINE, POLYP, CHILDREN (5119)
RADIOLOGY, LIVER, DERMOID CYST (6030)
RADIOLOGY, MALIGNANT ABDOMINAL TUMORS, TREATMENT, CHILDREN (6960)
RADIOLOGY, MECKEL'S DIVERTICULUM, DIARRHEA, SURGERY (5051)
RADIOLOGY, MIDGUT VOLVULUS, MALROTATION (6949)
RADIOLOGY, PANCREATIC DISEASE, ARTERIOGRAPHY, ANGIOSCINTIGRAPHY, SURGERY (4948)
RADIOLOGY, PANCREATIC PSEUDO-CYST, RUPTURE (5965)
RADIOLOGY, PANCREATITIS (4905)
RADIOLOGY, PEPTIC ULCER, GALLBLADDER DISEASE (6668)
RADIOLOGY, PORTAL HYPERTENSION, SURGERY (5298)
RADIOLOGY, PRESACRAL MASSES, CHILDREN (7489)
RADIOLOGY, PROLAPSE, STOMACH, MUCOSA (4986)
RADIOLOGY, RECTAL PROLAPSE, RIPSTEIN SURGERY (6710)
RADIOLOGY, SMALL INTESTINE, CANCER (7289)
RADIOLOGY, SMALL INTESTINE LESIONS (7273)
RADIOLOGY, SORBITOL, SMALL INTESTINE, DIAGNOSIS (4913)
RADIOLOGY, STOMACH, CANCER (5009)
RADIOLOGY, STOMACH, LEIOMYOSARCOMA, DIAGNOSIS (4995)
RADIOLOGY, STOMACH, ULCER, TUBERCULOUS ULCER, RECESS, ENDOSCOPY, GREATER CURVATURE (5023)

RADIOLOGY, TERATOMA, ABDOMEN, INFANT (4914)
RADIOLOGY, TREATMENT, LYMPHATIC TUMOR, STOMACH UPSET (5786)
RADIOLOGY, TUMOR, DUODENUM, METASTASES (5012)
RADIOISOTOPE SCAN, PANCREAS (7293)
RADIOISOTOPE SCANNING, LIVER, REGENERATION (8280)
RADIOTELEMETRY, GASTRIC ACID SECRETION (7262)
RADIOTELEMETRY, GASTRIC ACIDITY (7261)
RECTO-SIGMOIDOSCOPY, VOLVULUS, RECTO-SIGMOID INTUBATION, SMALL INTESTINE (5121)
REFLUX ESOPHAGITIS, ACID PERFUSION TEST, STENOSIS, ULCER (2516)
ROENTGEN, PEPTIC ULCER, GASTRIC, DUODENAL, PYRILENE TEST (8043)
SALMONELLOSIS, ENRICHMENT MEDIA, CHICKEN (8769)
SCAN, PANCREAS, LIVER (4749)
SCANNING, PANCREAS, IMAGE SEPARATION, DATA PROCESSING, LIVER (5652)•
SCINTIGRAPHY, HYDATID CYSTS, ECHINOCOCCOSIS, TUMORS (4946)
SCINTIGRAPHY, LIVER, BILIARY DUCT OBSTRUCTION, CIRRHOSIS, STEATOSIS, HEPATITIS (2537)
SCINTIGRAPHY, LIVER, HEPATOMEGALY, ALCOHOLIC STEATOSIS, EXTRAHEPATIC TUMOR, PRIMARY CANCER (5661)
SCINTILLOGRAPHY, GAMMA SCINTILLATION CAMERA, ABDOMEN (5671)
SERO-EPIDEMIOLOGY, HEMAGGLUTINATION, AMEBIASIS (7249)
SEROLOGICAL, TYPHOID, PARATYPHOID, O-H-VI-AGGLUTINATION, O-HEMAGGLUTINATION (6538)
SEROLOGY, CYST ANTIGEN, AMEBIASIS (7279)
SEROLOGY, DYSENTERY, E. COLI (7729)
SEROLOGY, ESCHERICHIOSIS (7282)
SEROTYPE, SALMONELLA (7719)
SIGMOIDOSCOPY, GIARDOSIS, DIARRHEA, ADULT (6262)
SIGMOIDOSCOPY, PNEUMATOSIS CYSTOIDES INTESTINALIS, COLON (7703)
SIGMOIDOSCOPY, ULCERATIVE PROCTITIS, RECTAL MUCOSA (5948)
SMALL INTESTINE, CARBOHYDRATE TOLERANCE TEST, LACTASE (7283)
SMALL INTESTINE, ILEUM, ISCHEMIA, DYE TEST (5658)•
SPECTROPHOTOMETRY, BILIRUBIN, SERUM (4849)
STOMACH, CYTOLOGY (5714)
STOMACH, GASTRIC ACID, HEIDELBERG PH CAPSULE, ACIDITY TITRATION (5656)•
STOMACH, TUMOR, MESENCHYME (3373)
SULFOBROMOPHTHALEIN TEST, CIRRHOSIS, CHRONIC HEPATITIS (7260)
SURGERY, GASTRIC ULCER, DUODENAL ULCER, OPISTHORCHOSIS, CHOLECYSTITIS (3009)
TECHNETIUM 99M, GASTRIC SCANNING, GASTRIC SECRETION, MUCOSA (4888)
TECHNETIUM 99M SULFIDE, SCINTILLATION CAMERA, NORMAL LIVER (6321)
TOLBUTAMIDE TEST, LIVER, METABOLISM, GLUCOSE (4916)
TOLUIDINE BLUE-O, ANALOGS PARATHYROID, PANCREAS SCANNING, DOG (5650)•
TRANSCATHETER BIOPSY, ESOPHAGEAL LESIONS, TUMOR (6536)
TUMOR, BENIGN, MALIGNANT, DUODENUM (7269)
TUMOR, MULIER'S TEST, ESOPHAGUS (5721)
TUMOR, STOMACH, ESOPHAGUS, GASTROSCOPY (4957)
ULCER, PANCREAS, ANOMALY, SURGERY, STENOSIS (2782)
ULCERATIVE COLITIS, OIB TEST, HEPATIC DETOXIFICATION, GLUCURONIDATION (5122)
ULCERATIVE COLITIS, RECTOSCOPY, RECTAL MUCOSA, LACTIC DEHYDROGENASE, ISOENZYME (5131)
ULTRASONIC SCANNING, LIVER, CIRRHOSIS, METASTASES, CARCINOMA, ASCITES (4892)•
ULTRASOUND, AORTA, THORACIC, ABDOMINAL, AORTOSONOGRAPHY (5696)
VASCULAR RADIOLOGY, LIVER DISEASE (7272)
VENOUS OCCLUSION (3737)
VIRAL HEPATITIS, TUBERCULOSIS (7602)
WILSON'S DISEASE, TREATMENT, COPPER (6820)
X-RAY, DIAGNOSIS, PYLORIC STENOSIS, STOMACH DYSKINESIA (5705)
X-RAY, GASTRIC CANCER (7267)
X-RAY, INTESTINAL INFARCT (5716)
X-RAY, STOMACH, DUODENUM, GALLBLADDER, SEX DIFFERENCE, ULCER (5041)•
X-RAY, THORACIC STOMACH (7288)
ZOLLINGER-ELLISON SYNDROME, PENTAGASTRIN INFUSION, GASTRIC SECRETION (9252)

DIAGNOSTIC PROCEDURE
ABDOMINAL, EXPLORATORY, LAPAROTOMY, INDICATIONS (8032)
ABSORPTION TESTS, MALABSORPTION, ETIOLOGY (8052)
AMEBIASIS, SKIN TEST (8021)
AMYLASE DETERMINATION (8729)
ANGIOGRAPHY, GALLBLADDER DILATATION, OBSTRUCTIVE JAUNDICE (8703)•
ANGIOGRAPHY, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS (8992)
AUGMENTED SECRETIN TEST, EXOCRINE PANCREAS FUNCTION, DUODENAL BICARBONATES (8768)
BARIUM SULFATE, CONTRAST MEDIA, GASTROINTESTINAL TRACT RADIOGRAPHY, IMPROVED CONTRAST MEDIA (8726)
BILIARY TRACT RADIOLOGY, PATHOLOGY, JEJUNOSTOMY (1806)•
BIOASSAY, CHOLECYSTOKININ, SURGICAL PROCEDURE (3170)•
CHOLANGIO-CHOLECYSTOGRAPHY, BILE DUCT, GLUCOSE, CONTRAST MEDIUM (8710)•
CHOLECYSTOGRAPHY, CODEINE, SPHINCTER OF ODDI (8047)
CHOLECYSTOGRAPHY, CONTRAST MEDIA (7242)
CHOLECYSTOGRAPHY, RELAXATION DUODENOGRAPHY (7239)

COLITIS, SEGMENTAL, GRANULOMATOUS (8219)
COMBINED ROENTGENOLOGY, STOMACH, GALLBLADDER (8719)
COPROLOGICAL INVESTIGATION, CLINICAL VALUE, DIETARY APPLICATIONS (8770)
DISACCHARIDE ABSORPTION, LACTOSE INTOLERANCE, LACTASE ACTIVITY (8177)
DOUBLE CONTRAST ROENTGENOLOGY, EARLY GASTRIC CARCINOMA (8743)
DUODENAL INTUBATION, PANCREATIC EXPLORATION, MAN (8750)
D-XYLOSE ABSORPTION TEST, SMALL INTESTINE, LIMITATION (8003)*
ELECTROGASTROGRAPHY, PEPTIC ULCER, COMPLICATIONS (8787)
ELECTRON MICROSCOPY, SMALL INTESTINE, MALABSORPTION (8771)
EMERGENCY ANGIOGRAPHY, MASSIVE HEMATEMESIS, LIVER CIRRHOSIS (8735)
ENDOSCOPY, ENDOPHOTOGRAPHY, COLON (8772)
ENDOSCOPY, RADIOLOGY, GASTRIC ULCER AND NEOPLASMS, CHRONIC GASTRITIS (8789)
ENTERIC FEVERS, URINE DIAZO REACTION, EVALUATION (8744)
ENTEROPATHOGENIC COLI, FLUORESCENT IMMUNO TEST (8017)
ESOPHAGEAL MANOMETRY, ACHALASIA, HIATAL HERNIA (8030)
ESOPHAGEAL MANOMETRY, HIATAL HERNIA (7229)
ESOPHAGITIS, MANOMETRY, ENDOSCOPY, BIOPSY (8022)
ESOPHAGOGASTRIC PH, MANOMETRY, HIATAL HERNIA (8081)
ESOPHAGOSCOPY, ESOPHAGEAL FOREIGN BODIES, INCIDENCE (8816)
ESOPHAGUS PRESSURE, CARDIAC ARTIFACTS (8012)*
FIBER DUODENOSCOPE, PANCREATOGRAPHY, CHOLANGIOGRAPHY (8004)*
GALACTOSEMIA, HETEROZYGOTE GENE CARRIERS, HEPATOSPLENOMEGALY (8741)
GAMMA CAMERA, INSPIRATION AND EXPIRATION VIEWS, HEPATIC PLIABILITY, LIVER, PATHOLOGY (8747)
GASTRIC ANALYSIS (8730)
GASTRIC BIOPSY, GASTRIC FUNCTION, MORPHOLOGY (8766)
GASTRIC FUNCTION TESTS, SURGERY (8033)
GASTROCAMERA (2504)*
GASTROSCOPY, CYTOLOGIC WASHING, INTRAGASTRIC BRUSHING (8027)
GASTROSCOPY, DIRECT VISION BIOPSY, GASTRIC CARCINOMA, BENIGN ULCER (8037)
GASTROSCOPY, GASTRIC SECRETION, CHRONIC GASTRITIS (7232)
GASTROSCOPY, GASTROINTESTINAL BLEEDING (7224)
GASTROSCOPY, TECHNIQUE, CONTRAINDICATIONS (8045)
HEPATOGRAPHY WITH LIPIODOL, LIVER, METASTASES, ABDOMINAL TUMORS (8718)
HEPATOMEGALY, BIOPSY (8050)
HEPATOSPLENOSCINTOGRAPHY, SHORT LIFE RADIOISOTOPES, CHILDREN (8755)
HISTALOG TEST, CONTRAINDICATIONS, MYOCARDIAL ISCHEMIA (8162)
HYPOTONIC DUODENOGRAPHY, INDICATIONS, CONTRAST MEDIA (8762)
HYPOTONIC DUODENOGRAPHY, PANCREAS SCINTOGRAPHY, AMPULLA OF VATER (7217)*
HYPOTONIC DUODENOGRAPHY, PANCREATITIS, DUODENAL LESIONS (7212)*
INFUSION, CHOLECYSTOCHOLANGIOGRAPHY, SERUM ENZYMES, LIVER, PATHOLOGY (8725)
INTESTINAL MALABSORPTION (7228)
INTRAVENOUS, CHOLANGIOGRAPHY, BILIGRAFIN FORTE, DRIP INFUSION TECHNIQUE (8036)
INTRAVENOUS, GALACTOSE TOLERANCE TEST, LIVER, PATHOLOGY, LIVER FUNCTION TEST (8777)
INVESTIGATION OF GASTRIC SECRETION, GASTRIN STIMULATION, VAGOTOMY (8774)
ISOTOPES, HEREDITARY METABOLIC DISORDERS, GLUCOSE, GALACTOSE, MALABSORPTION (8754)
LAPAROSCOPY, LIVER PUNCTURE BIOPSY, PREVENTION OF COMPLICATIONS (8782)
LIPID ABSORPTION TEST, TRIGLYCERIDE IODATE (LIPIODOL), PREMATURE INFANTS (8775)
LIVER, COLLOIDAL GOLD (8020)
LIVER, ROSE BENGAL EXCRETION (8049)
LIVER ANGIOGRAPHY, METASTASES, CONTRAST MEDIA (8707)*
LIVER FUNCTION, MESENCHYMAL CLEARANCE, COLLOIDAL IRON (8786)
LIVER SCAN, VALUE IN PROGNOSIS, EVALUATION OF THERAPY (1805)*
LIVER SCANNING, 99M TC TECHNETIUM DIOXIDE, BLOOD FLOW STUDY (8050)
LYMPHOGRAPHY, FILARIASIS, CHYLURIA (9291)
MAXIMAL SECRETION TEST, HISTAMINE, GASTRIC FUNCTION, MAN (8713)
MEASUREMENT OF PORTAL FLOW, ISOTOPE CLEARANCE (8733)
METHODOLOGY, GASTRIC CANCER, CYTOLOGY (8727)
113M IN ISOTOPE, LIVER SCINTILLOGRAPHY KUPFFER CELL (8716)
OPERATIVE CHOLANGIOGRAPHY, CHOLELITHIASIS, INTRAHEPATIC BILE DUCT, STENOSIS (8783)
OPERATIVE CHOLANGIOGRAPHY, CONGENITAL DOUBLE GALLBLADDER (8405)
OPERATIVE CHOLANGIOGRAPHY, OPERATIVE RADIOMANOMETRICAL FLUX MEASUREMENT, BILIARY TRACT SURGERY (8752)
OPERATIVE MANOMETRY, RADIOLOGY, SYMPTOMLESS CHOLELITHIASIS (9198)
PANCREAS, SCINTISCANNING, LIMITATIONS, CHRONIC PANCREATITIS (8751)
PANCREAS SCANNING, SELENIUM METHIONINE ACUTE PANCREATITIS (8044)
PANCREATIC SCANNING, FAST SCANNER (7214)*
PANCREATIC SCINTILLOGRAPHY, SURGERY, DRAWBACKS (8015)
PERCUTANEOUS CHOLANGIOGRAPHY,

  ROENTGENOGRAM, OBSTRUCTIVE JAUNDICE (8736)
  PERFUSION CHOLANGIOGRAPHY, BILE DUCT EXAMINATIONS, HAZARDS (8715)
  PERITONEOSCOPY, CHOLECYSTITIS (7223)
  PERORAL BIOPSY, SMALL INTESTINE, MALABSORPTION SYNDROMES (8712)
  RADIOISOTOPE SCANNING, LIVER ECHINOCOCCOSIS (7235)
  RADIOISOTOPIC METHOD, GLUCURONIDE FORMATION MEASUREMENT, MAN (8789)
  RADIOISOTOPIC TECHNIQUE, BIOCHEMICAL METHODS, LIVER CANCER, HYDATID CYST (8758)
  RADIOLOGY, ANGIOGRAPHY, ACUTE ABDOMEN (8763)
  RADIOLOGY, DOUBLE CONTRAST, SMALL INTESTINE (8739)
  RADIOLOGY, DUODENAL DIVERTICULUM, ETIOLOGY (8760)
  RADIOLOGY, GALLBLADDER FUNCTION, MORPHOLOGY (8756)
  RADIOLOGY, SIGMOID, RECTOSIGMOIDAL JUNCTION (8737)
  RADIOLOGY, VARICES, BULBUS DUODENI (8759)
  RADIOLOGY WITH AND WITHOUT CONTRAST MEDIA, ESOPHAGEAL, CARDIAL FUNCTION, INFANTS (8728)
  REMOTE CONTROL PILLS, SAMPLING OF GASTROINTESTINAL TRACT CONTENT (8731)
  SCANNING ELECTRON MICROSCOPY, RECTAL MUCOSA (8011)*
  SCINTIGRAPHY, PANCREATITIS, PANCREATIC TUMOR (8737)
  SCINTILLATION SCANNING, LIVER ABSCESS, CHILDREN (8038)
  SCINTILLOGRAPHY, LABELED SELENIOMETHIONINE, ACUTE PANCREATITIS (8732)
  SERUM IMMUNOGLOBULIN DETERMINATION, LIVER, STEATOSIS, CIRRHOSIS, HEPATITIS (8023)
  STANDARD RADIOLOGY, PANCREATITIS, GASTRODUODENAL AND BILE DUCT RADIOGRAPHY (8734)
  STOMACH, EXFOLIATIVE CYTOLOGY (8006)*
  STOMACH RADIOLOGY, OPTIMAL IMAGE (8024)
  SUBMAXIMAL BETAZOLE TEST, SPONTANEOUS GASTRIC SECRETION, PEPTIC ULCER (8765)
  TARGET ANGIOGRAPHY, CELIAC ARTERIOGRAPHY, PANCREATIC LESIONS (8765)
  TRYPSIN, CHYMOTPYPSIN, PANCREATIC INSUFFICIENCY, ENTEROKINASE (8029)
  TUBELESS GASTRIC ACIDITY, GASTRIC HYPOCHLORHYDRIA, IRON MALABSORPTION (8708)*
  ULTRASONIC TECHNIQUE, ATRESIA LEVEL, ANUS, RECTUM (8761)
  ULTRASOUND, TUMOR, PANCREAS (8053)
  VI HEMAGGLUTINATION TEST, TYPHOID CARRIERS (8019)
DIALYSIS
  FECAL ANALYSIS, IN VIVO, ANION, ANTIBIOTIC (0942)*
  PERITONEAL, COMPLICATIONS (4657)
DIAPHRAGM
  CANCER STOMACH, CANCER ESOPHAGUS, HIATAL HERNIA (0997)
  HERNIA, LIVER (4418)
  HERNIA, RUPTURE, ASCITES, DIAGNOSIS (2189)*
  JEJUN, CONGENITAL, SURGERY, FETUS (4221)
  SUBPHRENIC ABSCESS, SURGERY, RADIOLOGIC DIAGNOSIS AND CONTROL (3614)
  TRAUMATIC RUPTURE, RADIOLOGY, SURGERY (9235)
DIARRHEA
  ABNORMAL ANUS (4301)
  ACUTE, FATAL, CHILDREN, E. COLI (3710
  AMEBIC DYSENTERY, PARASITOLOGICAL EXAMINATION, INTESTINAL COMPLICATIONS, HEPATIC AMEBIASIS (6253)
  BACTERIA, E.COLI, KLEBSIELLA (2227)
  BACTERIA, ENTERITIS, SHIGELLA (2971)
  BACTERIA, SUDAN, CHILDREN (2200)
  BACTERIA, WATER CONTAMINATION, TRAVELING (2972)
  BACTERIAL INFECTION, IRAN, CHILDREN, ANTIBIOTIC (2228)
  BALANTIDIUM COLI (7756)
  BERBERINE, PEDIATRIC, GASTROENTERITIS (3743)
  BOVINE VIRAL, ULTRASTRUCTURE, MUCOSAL DISEASE (6955)
  CHILDHOOD, ARIZONA ORGANISMS, S.INDIA (1528)*
  CHOLERA, ANTIBIOTIC, VIBRIO (4584)
  CHOLERA, ANTIBODY, SENSITIVITY, 2-MERCAPTOETHANOL (4574)*
  CHOLERA, CHOLERAGEN, CHOLERAGENOID, ANTIGEN (4004)
  CHOLERA, DISACCHARIDE DEFICIENCY (2948)*
  CHOLERA, ETIOLOGY, ANTIGEN, IMMUNOLOG (5107)
  CHOLERA, INFANT, RABBIT (0918)
  CHOLERA, TREATMENT, CHILDREN (6180)
  CHRONIC, COLIC, TREATMENT (1234)
  CHRONIC, DIAGNOSIS, FECES (2204)
  CHRONIC, PANCREATIC, ORIGIN, CHILD (4332)
  CHRONIC, PARACLINICAL STUDY (4056)
  CHRONIC, RARE DISEASES (4648)
  CORYNEBACTERIUM DIPTHERIAEX, NEONATE (3753)
  COW'S MILK, GASTRIC JUICE, VEGETABLES (5366)
  DEHYDRATION, TREATMENT (2238)
  DIABETES MELLITUS, JEJUNAL BIOPSY (1203)
  DIBROMOHYDROXY-QUINOLINE, IODOCHLOROHYDROXY-QUINOLINE, GASTROENTERITIS (9244)
  DIFFERENTIAL DIAGNOSIS, THERAPY (2201
  DISACCHARIDE INTOLERANCE (4647)
  DISEASES, HOUSEFLIES, WATER AVAILABILITY (3746)
  DISEASES, MICROBES, CHILDREN (2220)
  DUMPING SYNDROME, DUODENUM, ILEUM, IO (5080)
  DYSENTERY, SHIGELLA (4637)
  E. COLI, SALMONELLA, SHIGELLA, PATHOGENESIS (1525)

ENTERITIS, ANTIBIOTIC, NEONATE (5371)
ENTERITIS, PEDIATRIC, TREATMENT (3749)
EPIDEMIOLOGY, MEXICO, DYSENTERY, GASTRITIS, ENTERITIS (2742)
ESCHERICHIA COLI (2236), (2237)
ESCHERICHIA COLI, SALMONELLOSIS, TYPHOID FEVER (2187)•
EXCRETION, CR 51 CL3, CONSTIPATION (2352)
FLUID, INTESTINE, ELECTROLYTES (4595)
GASTRIC SURGERY, INTESTINAL MALABSORPTION (8102)
GASTROENTERITIS, EPIDEMIOLOGY (2605)
GASTROENTERITIS, EPIDEMIOLOGY, INFANCY (2234)
GASTROENTERITIS, VIRUS, TRANSMISSIBLE, PIGS (0368)
GASTROGENIC, GASTRIN (1360)
GIARDIASIS, CHILDREN (6264)
GIARDIASIS, CHLORHYDROXYGUIONLIN (1548)
GIARDIASIS, HALQUINOL (6265)
GIARDOSIS, SIGMOIDOSCOPY, ADULT (6262)
HOUSING AND SOCIOENVIRONMENTAL FACTORS, ENTEROPATHOGENIC BACTERIA, INFANTS, PANAMA (1508)•
ILEOSTOMY, COLOSTOMY, CONSTIPATION, PSYCHOLOGICAL PREPARATION (5903)
INFANT, PARASITES, MALNUTRITION, KABUL (2999)
INFANT, SUGAR TRANSPORT, ABSORPTION (8167)•
INFANTILE, ANTIBIOTICS, CHEMOTHERAPEUTICS (1519)
INFANTILE, BACTERIOLOGY (3476)
INFANTILE, E. COLI (3488)
INFANTILE, UNEOMYCIN, THERAPY (2700)
INFECTIOUS, NEOMYCIN TREATMENT, CHILDREN (9202)
IRRITABLE COLON SYNDROME, MALABSORPTION (4302)
ISLETS-CELL ADENOMA, HYPOKALEMIA, PANCREAS (2176)
LARGE INTESTINE, FECAL FLORA, PARASITE (7195)•
MALABSORPTION, CROHN'S DISEASE (6688)
MALABSORPTION, DIABETES MELLITUS (3757)
MALABSORPTION, JEJUNUM (3698)•
MALNUTRITION, DIPHENOXYLATE, HYDROCHLORIDE THERAPY, INFANT (6965)
MECKEL'S DIVERTICULUM, RADIOLOGY, SURGERY (5051)
METRONIDAZOLE, PROTOZOA, PARASITES (7757)
NEONATES, ENTEROPATHOGENIC COLI (3711)
NONSPECIFIC, TINCTURE OF OPIUM - HMB - PECTIN COMBINATION, CHILDREN (8442)
OSMOTIC, NACL, SMALL INTESTINE RESECTION (4637)
PARASITOLOGY, FECAL SMEAR, THERAPY (2199)
PEDIATRIC, DYSPEPSIA (3750)
POSTVAGOTOMY (3376)
POSTVAGOTOMY, GASTRECTOMY (3712)
POSTVAGOTOMY, PATHOGENESIS (0340)
POSTVAGOTOMY-PYLOROPLASTY, DUMPING, JEJUNUM, GASTRIN MECHANISM (0298)
PROCTOCOLITIS, ABSORPTION, POTASSIUM (3463)•
SALMONELLA, ENTEROCOLITIS, RAT (6247)
SALMONELLA TYPE, CHILDREN (1528)•
SHIGELLOSIS, GUATAMALA INDIANS, INFANTS, BREAST-FEEDING (1529)•
SMALL INTESTINE, MALABSORPTION, HISTOLOGY, TROPICAL SPRUE (2194)•
STOMACH, MULTIPLE POLYPS, GASTROECTOMY (5818)
SYNDROME, PANCREATIC TUMOR, MANAGEMENT (3520)
SYNDROME, TREATMENT, ENTEROCOL (3721)
THYROID CANCER, WATER LOSS (3696)•
THYROID TUMOR, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)
TRAVELER'S, IMMUNITY, AGENT, ETIOLOGY (0477)
TREATMENT, AETHACRIDIN (3382)
TREATMENT, ANTIBIOTIC (2203)
TREATMENT, ILECTOMY, POLYSORBATE-80, CHOLESTYRAMINE (3421)•
TROPICAL SPRUE (5894)
TROPICAL SPRUE, NIGERIA, MALABSORPTION (5889)
VAGOTOMY, GASTRECTOMY, PYLOROPLASTY, GASTROENTEROSTOMY (1902)•
VAGOTOMY, PEPTIC ULCER, GASTROJEJUNOSTOMY, PYLOROPLASTY (2642)
VAGOTOMY, STOMACH, ACID (5375)
VIBRIO PARAHAEMOLYTICUS (6181), (7737)
VIRUS, BACTERIA, INFANTS (6981)
VOLUMOGENIC, FLUID DYNAMICS, ANAL SPHINCTER, ILEOCECAL SPHINCTER (3886)•

DIET
AMINO ACID, HEPATOMA, SERUM DEHYDRATASE SYNTHESIS (3941)•
BILE, CHOLESTEROL, GALLSTONE (5314)
BIOTIN DEFICIENCY, EGG-ALBUMIN DIET, HEPATIC ENZYMES, GLYCOLYSIS (5569)•
CARBOHYDRATE-FREE, LIVER, GLUCONEOGENESIS, GLYCOLYSIS (5598)
CASEIN, LIVER, SELENIUM (3216)
CHOLELITHIASIS, FORMATION, THERAPY (2174)
CHOLELITHIASIS, GALLSTONES (8400)
CHOLINE, METHIONINE, PHOSPHOLIPID (7138)•
CHRONIC CLOFIBRATE, ULTRASTRUCTURAL ALTERATIONS, HEPATOCYTE PEROXISOME, RAT (2315)
COMPOSITION, PANCREATIC ENZYME, ACTIVITY, DOG (0810)•
CORN OIL, LEVEL, HEXOBARBITAL, HEPTACHLOR METABOLISM, ANILINE METABOLISM, LIVER (3192)
DEFICIENCY, THERAPY, LIVER DISEASE (2840)
EARLY, FLUID, WEIGHT, BILIRUBIN LEVEL, PREMATURE INFANTS (1762)
EFFECT OF, GLYCOLYTIC ENZYME, HUMAN JEJUNUM (5613)•
FAT, LIVER, ALCOHOL (5236)
FAT INTOLERANCE, SENSITIVITY, ADULT (1172)
FISTULA, FECES (5116)
FOLATE-METABOLIZING ENZYMES, JEJUNUM, METABOLISM (5411)•

    HEPATOMA, PYRUVATE KINASE, LIVER (6821)
    HIGH PROTEIN, LIVER, ENZYMES (7189)
    HIGH PROTEIN, PANCREATIC SECRETION, CHRONIC PANCREATITIS (7519)
    ILEOSTOMY, FLATULENCE (7413)*
    INFECTION, MALNUTRITION, UNITED STATES (2981)
    IRON (3742)
    LACTOSE, LACTOSE MALABSORPTION (5886)*
    LINOLEATE DEFICIENCY, LIPID METABOLISM LIVER, MOUSE (6482)
    LIPID, METABOLISM (4848)
    LIVER, ENZYME, FAT (3214)
    MALNUTRITION, PHYSICAL GROWTH (6968)
    MASSIVE RESECTION, SMALL INTESTINE, MEDICAL TREATMENT (8920)
    METHIONINE, CHOLINE, FAT, METABOLISM, WEANLING RATS (5558)*
    MINERAL REQUIREMENTS, EXPERIMENTAL ANIMALS, METHIONINE, DIET, MICE, RATS, GUINEA PIGS (5640)
    PANCREATIC AMYLASE, SALIVA, REDUCING SUBSTANCE (6418)
    PANCREATIC CALCIFICATION, ETIOLOGY, CEYLON (6750)
    PARTICLE SIZE, FIBER CONTENT, GASTRIC ULCERATION, SWINE (5827)*
    PELLETED, GASTRIC SECRETION, ENERGY REQUIREMENT, LABORATORY ANIMALS (4879)
    PEPTIC ULCER, CORONARY DISEASE, CIRCULATION (2639)
    PHENYLALANINE, MICROSOME, LEUCINE (6446)*
    PROTEIN, LIVER INJURY (5250)
    PROTEIN, METABOLISM, CIRRHOSIS (5299)
    PROTEIN DEFICIENCY, INDIA (6215)
    PROTEIN-FREE, POLYSOMES, LIVER, RAT (0127)
    SATURATED FAT, ANILINE METABOLISM, HEXOBARBITAL METABOLISM, LIVER (3189)
    SMALL INTESTINE, MALABSORPTION, GEFARNATE, INFANTS (7443)
    SOYBEAN FLOUR, ENZYME ACTIVITY, PANCREATIC, ENZYMES (6410)*
    THROMBOGENIC, PHOSPHOFRUCTOKINASE ACTIVITY, GLUCOLYSIS (2405)*
    TPN-LINKED ENZYME, TISSUE PROTEIN, LIVER, RAT (0130)
    ULCER, STOMACH, DUODENUM (3395)
    UNSATURATED FAT, PLASMA, CHOLESTEROL (6352)*
    VITAMIN DEFICIENT, HYMENOLEPIS DIMINUTA DEVELOPMENT, RAT (2259)
    WEIGHT, MALNUTRITION, PROTEIN, CHILD MORTALITY, SENEGALESE CHILDREN (5349)
DIETARY DEFICIENCY
    CHOLINE, FATTY LIVER, ALCOHOL, RAT (0101)*
    CHOLINE, MORPHOLOGY, GOLGI APPARATUS LIVER, RAT (0008)*
    CHOLINE, PHOSPHATIDYL BIOSYNTHESIS (7962)
    IRON, RIBOFLAVIN, IODIDE, LIVER (7110)*
    KWASHIORKOR, INFANT, MIDDLE CLASS FAMILY, U.S.A. (1521)
DIETARY FACTOR
    LACTOSE, ABSORPTION, CALCIUM, SMALL INTESTINE (0034)
    THIAMINE, LINOLEATE, DRUG, METABOLISM LIVER (0895)
DIETHYLSTIBESTEROL
    MONOGLUCRON FORMATION, LIVER HOMOGENATES, HAMSTER (1748)
DIGESTION
    AGE DEPENDENCY, ABSORPTION, GASTROINTESTINAL TRACT (7849)
    CARBOHYDRATES (1638)
    DISORDERS, ENZYME DEFICIENCY, HYPOACIDITY (8863)
    DUODENUM, ABSORPTION, PHYSIOPATHOLOGY (3108)
    FAT, ABSORPTION, ENZYME (4773)
    GASTRITIS, ATROPHIC, NEUTROPHILES, EOSINOPHILES (6628)
    PROTEIN, ABSORPTION, MAN (4768), (4769)
    SMALL INTESTINE, SECRETION, ABSORPTION (3235)
    SMALL INTESTINE, SECRETION, ION, SHEEP (4877)
DILATION
    BILE DUCT, GALLBLADDER (4545)
    DUODENUM, MUSCLE DEGENERATION (2585)
    IDIOPATHIC, CHOLEDOCHUS (4561)
    PYELIC, URETERAL COMPRESSION, ILEOCOLIC, CROHN'S DISEASE (0438)
    TOXIC, DYSBACTERIOSIS, LARGE INTESTINE, COLITIS, ULCER, ANTIBIOTIC (2748)
DIPHTHERIA
    CORYNEBACTERIUM DIPTHERIAEX, DIARRHEA, STOMATITIS, NEONATE (3753)
    TOXIN, ADENOSINE DIPHOSPHATE RIBOSYLATION, AMINOACYL TRANSFERASE, LIVER, RAT (2460)
DISACCHARIDE
    FRUCTOSE, INTOLERANCE, BIOPSY, LIVER, STEATOSIS, FIBROSIS (9038)*
    INTESTINAL, ENZYME, LACTASE, PURIFICATION (1782)*
    MALABSORPTION, LACTOSE INTOLERANCE, LACTASE ACTIVITY (8177)
DISEASE
    ACUTE, INTESTINE, INFANTS, DYSENTERY (7605)
    AMYLOIDOSIS, HEPATIC, SPLENIC, RESORPTION HISTOLOGY, MOUSE (8480)
    CELIAC, INTESTINAL PEPTIDASES, GLUTEN (3448)*
    CHRONIC GRANULOMATOUS, ESOPHAGUS (7319)
    CONGESTIVE HEART FAILURE, CENTRILOBULAR SINUSOIDAL CHANGES (6929)*
    CROHN'S, ADENOCARCINOMA, EXCLUDED LOOP OF ILEUM, SURGERY (8163)
    CROHN'S, COLON, MEGACOLON (7505)
    CROHN'S, COLON, SURGERY (8222)
    CROHN'S, COLON, ULCERATIVE COLITIS (8223)
    CROHN'S, MACROSCOPIC, PATHOLOGY (8160)
    CROHN'S, RECTUM, ANUS, ULCERATIVE COLITIS (8225)

CROHN'S, TRANSMISSABLE AGENT (8157)*
CROHN'S, ULCERATIVE COLITIS (7500)*
CYSTIC, CARCINOMA, STOMACH (8834)
DANBOLT AND CLOSS, ACRODERMATITIS ENTEROHEPATICA, CHRONIC DIARRHEA (9213)
GANGLIOSIDOSIS, ULTRASTRUCTURE, HUMAN LIVER (8284)
GRANULOMATOUS, ACUTE, LIVER (7901)*
HARTNUP, INTESTINAL ABSORPTION, AMINO ACIDS (8170)
HARTNUP, MALABSORPTION, INTESTINAL (8166)*
HIRSCHSPRUNG'S, AGANGLIONIC RECTUM, ENLARGED COLON, CHRONIC CONSTIPATION (7482)
HIRSCHSPRUNG'S, ENTEROCOLITIS, INTESTINAL OBSTRUCTION, COLOSTOMY, INFANT (8192)
HYPOGAMMAGLOBULINEMIA, PERNICIOUS ANEMIA, ARTHRITIS, DIARRHEA (8465)
INFLAMMATORY INTESTINAL, ULCERATIVE COLITIS, REGIONAL ENTERITIS (8989)
ISOLATED MESENTERIC LIPODYSTROPHY (8173)
LIVER, PANCREAS, DUODENUM (7239)
LIVER INTOXICATIONS, RESORT TREATMENT (8336)
WALDMANN'S, INTESTINAL LYMPHANGIECTASIA, CHYLOUS ASCITES (8471)
WILSON'S, GLIOPATHY, HEPATOGENIC (8272)*
WILSON'S, NEUROLOGICAL LESIONS, LIVER FUNCTION (9045)

DIURETIC
  ETHACRYNIC ACID, CIRRHOSIS (1523)
  PANCREATITIS (4356)

DIURNAL RHYTHM
  JEJUNAL CRYPTS, MITOSIS, DNA SYNTHESIS (0906)*
  LIVER, ADRENAL CORTEX, ENZYME (2403)*
  LIVER GLYCOGEN, PLASMA FREE FATTY ACID, AD LIBITUM DIET, SINGLE DAILY MEAL, RAT (3207)

DIVERTICULA
  ESOPHAGUS, RADIOLOGIC DIAGNOSIS (1000)
  SIGMOID, RECTUM, RESECTION, MOTILITY, PRESSURE STUDY, ETIOLOGY (4268)*

DIVERTICULITIS
  ACUTE, ILEUM (2668)
  ANUS, DIVERTICULOSIS, SURGERY (2727)
  COLON, ABDOMINAL MUSCULATURE DEFICIENCY (8957)
  COLON, CLINICAL FEATURES (2002)
  COLON, CROHN'S DISEASE, STOMACH, CASE REVIEW (3375)
  COLON, ETIOLOGY, EPIDEMIOLOGY (8944)
  COLON, HEMORRHAGE (2982)
  COLON, HEMORRHAGE, SURGERY (8198)
  COLON, OBSTRUCTION, CARCINOMA, COLECTOMY (6696)
  COLON, PELVIC SEPSIS, SURGERY (8975)
  COLON, PERFORATION (2701)
  COLON, PROGRESSION, PROGNOSIS (2003)
  COLON, SIGMOID MYOTOMY, LAPAROTOMY (8973)
  COLON, SURGERY (2007), (2755)
  DIVERTICULOSIS, COLON, PATHOGENESIS (0489)
  DUODENUM, MOTILITY, STOMACH (7259)
  HEMORRHAGIC, SMALL INTESTINE (1171)
  PERFORATED, COLON, SURGERY (4288)
  SIGMOID, FREE PERFORATION, SURGICAL TREATMENT (0488)
  SIGMOID, UTERINE PERFORATION, ANATOMOPATHOLOGY (8960)
  SIGMOID COLON, ANASTOMOSIS, CRITERIA (8188)

DIVERTICULOSIS
  COLON, CLINICAL FEATURES (2002)
  COLON, DIVERTICULITIS, SURGERY (1287)
  COLON, HEMORRHAGE (1255)
  COLON, PROGRESSION, PROGNOSIS (2003)
  COLON, RADIOLOGY, STENOSIS, TUMOR (6576)
  COLON, SURGERY (8197)
  COLON, TREATMENT (1271)
  CONGENITAL, ULCERATION, CHOLECYSTOGRAPHY, MUCOSA (6921)
  DIVERTICULITIS, ANUS, SURGERY (2727)
  DIVERTICULITIS, COLON, PATHOGENESIS (0489)
  INTRALUMINAL PRESSURE, COLON, RECTUM, SIGMOID MYOTOMY (3459)*
  JEJUNUM, ENTEROLITH, OBSTRUCTION (1187)
  JEJUNUM, MALABSORPTION (3457)
  JEJUNUM, VOLVULUS, METABOLISM (8146)
  PATHOGENESIS, DIET (0478)
  PATHOGENESIS, INTESTINE, MEGALOBLASTIC ANEMIA (4222)
  SIGMOID, RECTUM, CONTRACTION, ENEMA, POLYSILOXANE FOAM (4267)*

DIVERTICULUM
  APPENDIX, APPENDICITIS, SURGERY (6718)
  CECUM, INNERVATION, RABBIT (0020)
  COLON, CECUM (4273)
  COLON, DIVERTICULITIS (5919)
  COLON, DIVERTICULITIS, DIFFERENTIATION, RADIOLOGY (5681)
  COLON, DIVERTICULITIS, SURGERY (1287)
  COLON, OVERVIEW (6715)
  COLON, PROCTORRHAGIA (4274)
  COLON, SURGERY (6713)
  COLONIC PERFORATION, CANCER, PERITONITIS (7493)
  CONGENITAL, CHOLECYSTOGRAPHY, ULCERATION (6921)
  DISEASE, COLON, RESECTION (4283)
  DIVERTICULITIS, APPENDIX, APPENDICITIS, SURGERY (5103)
  DIVERTICULITIS, COLON, FISTULA (5117)
  DIVERTICULITIS, COLON, RADIOLOGY (7484)
  DIVERTICULITIS, COLON, SURGERY (5114)
  DIVERTICULITIS, GASTROINTESTINAL TRACT, RADIOLOGY, DIAGNOSIS (6197)
  DIVERTICULITIS, PEPTIC ULCER, APPENDICITIS, PERITONITIS (6961)
  DIVERTICULITIS, PSEUDO TUMORS, DOUBLE CONTRAST, SIGMOID COLON, STENOSIS, INFLAMMATION (4894)*
  DIVERTICULITIS, SURGERY, PERFORATION, PERITONITIS, DRAINAGE, COLOSTOMY, PALPABLE TUMORS, HEMORRHAGE (5916)
  DIVERTICULOSIS, COLON, CECUM, SIGMOID, CARCINOMA, BLEEDING, RESECTION (5914)

DIVERTICULOSIS, JEJUNUM, MALABSORPTION, OSTEOMALACIA, RICKETS (5078)
DUODENUM, CONGENITAL ANOMALIES (7363)
DUODENUM, ESOPHAGEAL HERNIA, GASTRIC TUMOR (5802)
DUODENUM, OBSTRUCTION, BILIARY TRACT (5317)
DUODENUM, PERFORATION, ENTEROLITH (4997)
DUODENUM, RADIOLOGY, SURGERY (8116)
DUODENUM, ROENTGENOLOGY, ETIOLOGY (8760)
DUODENUM, SURGERY, PEPTIC ULCER (8859)
EPIPHRENIC, ESOPHAGUS, LEIOMYOMA (1846)
ESOPHAGEAL, MULTIPLE, SPASM, STRICTURE (3326)
ESOPHAGUS, INFANTS, CHILDREN (6597)
ESOPHAGUS, RADIOLOGY (1831), (1836), (1837)
ESOPHAGUS, SURGERY, MORPHOLOGY (8814)
GASTROINTESTINAL TRACT, PERFORATION, SURGERY (7715)
GREATER GASTRIC CURVATURE (2753)
INTRALUMINAL, DUODENUM, EMBRYOGENETIC BASIS, PHYSIOPATHOLOGY, ACUTE PANCREATITIS (0335)
JEJUNUM, DIVERTICULITIS (6681)
MECKEL'S, ABDOMINAL, TRAUMA (7417)
MECKEL'S, ANOMALY, SMALL INTESTINE (1197)
MECKEL'S, BLEEDING, PANCREATIC HETEROTOPIA (0377)
MECKEL'S, CHRONIC ANEMIA (5870)
MECKEL'S, COMPLICATION (4235)
MECKEL'S, COMPLICATIONS, ULCER, PERITONITIS, OBSTRUCTION (3430)
MECKEL'S, ECTOPIC TISSUE, ULCER, MASSIVE HEMORRHAGE (0367)
MECKEL'S, ENTEROLITH ILEUM (4226)
MECKEL'S, FOREIGN BODIES, SURGERY, NEOPLASM (8913)
MECKEL'S, ILEOINTRACOLIC, INVAGINATION, MAN (0374)
MECKEL'S, INTERNAL HERNIA THROUGH MESENTERY (3423)
MECKEL'S, INTESTINE, HEMORRHAGE, SURGERY, GASTRIC MUCOSA, SHOCK (5064)
MECKEL'S, LEIOMYOSARCOMA (7418)
MECKEL'S, PATHOLOGY, SMALL INTESTINE (7427)
MECKEL'S, PERFORATION, PERITONITIS, SURGERY, NEWBORN, INTESTINAL OBSTRUCTION (5050)
MECKEL'S, RADIOLOGY, DIAGNOSIS, OBSTRUCTION (3421)
MECKEL'S, ROENTGENOLOGY, EMBRYOLOGY ANATOMY, COMPLICATIONS (0363)
MECKEL'S, SARCOMAS, NEONATE (4220)
MECKEL'S, SMALL INTESTINE (5873)
MECKEL'S, SMALL INTESTINE, PATHOLOGY (5871)
MECKEL'S, SURGICAL INDICATIONS (1178)
MECKEL'S, TUMOR, CARCINOID SYNDROME (1934)
MECKEL'S CARCINOID TUMOR, DUODENAL ULCER, ABDOMINAL COLIC (0371)
PHARYNGOESPAGEAL, SQUAMOUS CELL CARCINOMA, DEVELOPMENT (0265)
PSEUDO-, TRAUMATIC, ESOPHAGUS, NEONATE (4114)
SIGMOID COLON, MYOTOMY, MANOMETRY (3482)
SMALL INTESTINE, DUODENUM, JEJUNUM (2665)
STOMACH, CHOLECYSTECTOMY, RADIOLOGY (8871)
STOMACH, SMALL INTESTINE, LOCALIZATION GASTRIC MUCOSA, HEMORRHAGE, MALIGNANCY (5784)
SURGERY, SMALL INTESTINE, DUODENUM (2673)
ZENKER'S, DIAGNOSIS; SURGERY (2750)

DL-ETHIONINE
  ETHANOL, PROTEIN DEFICIENCY, PANCREAS LEUCINE AMINOPEPTIDASE, RAT (1683)*

DNA
  AZOBENZENE DERIVATIVE BINDING, REGENERATING LIVER (3981)
  BLOOD, PANCREATITIS, PANCREAS, DIAGNOSIS (0526)
  CARCINOGEN BINDING, GLUCORONIDE CONJUGATE, LIVER, RAT (0107)
  DNA POLYMERASE, NUCLEIC ACID METABOLISM, HEPATOMA (1728)
  JEJUNUM, EPITHELIUM, FORMATION, LOSS MICE (1786)*
  LIVER, NUCLEOPLASMIC PARTICLES (3804)*
  LIVER, RNA, PROTEIN (3948)*
  METABOLISM, PROTEIN, LIVER AUTOTRANSPLANTATION (0817)*
  NUCLEAR, SYNTHESIS, LIVER (7145)*
  SMALL INTESTINE, MUCOSA, HISTOCHEMISTRY (1563)*
  SYNTHESIS, DIURNAL RHYTHM, JEJUNAL CRYPTS, MITOSIS, (0906)*
  SYNTHESIS, INHIBITION, HYDROCORTISONE (2435)
  SYNTHESIS, LIVER, REGENERATION, DICCONTINUATION, RAT (2299)
  SYNTHESIS, LIVER, THYMECTOMY (3986)
  SYNTHESIS, PROTEIN SYNTHESIS, PANCREATIC, ACINAR CELL DIFFERENTIATION, RAT (0749)*
  SYNTHESIS, SMALL INTESTINE (0162)*
  THYMIDINE INCORPORATION, ISOLATED MITOCHONDRIA, LIVER, RAT (3069)
  X-RAY DAMAGE, ADENOSINE TRIPHOSPHATE (4371)*

DOLICHOCOLON
  CONSTIPATION, SURGERY (3757)

DOPAMINE
  CIRRHOSIS, RENAL FUNCTION (3651)*
  DOPA-DECARBOXYLASE, LIVER TISSUE, DIALYSIS (7115)*

DRUG
  ABSORPTION, ACETAZOLAMIDE, D-AMPHETAMINE, SALICYLIC ACID (7062)*
  ABSORPTION, GASTROINTESTINAL TRACT, PHYSIOCHEMICAL PROPERTIES (1636)
  ABSORPTION, MODEL, GASTROINTESTINAL TRACT (3870)
  ABSORPTION, MODEL, GASTROINTESTINAL TRANSPORT (3871)
  ABSORPTION, SALICYLIC ACID, BARBITAL, SULFAETHIDOLE (7071)*

ABUSE, ACUTE VIRAL HEPATITIS, LIVER (7604)
ACETYLCHOLINE, NITROGEN METABOLISM, NOREPINEPHRINE (3255)
ACETYLESALICYLIC ACID, PHENYLBUTAZONE, GASTRODUODENAL BLEEDING (8866)
ACUTE AMEBIC DYSENTERY, ANTIBIOTICS (7021)
AFLATOXIN, ACUTE NON-VIRAL HEPATITIS, LIVER, MONKEY (6065)
AFLATOXIN, NON-VIRAL HEPATITIS, UGANDA (6070)
ALDEHYDES, SEROTONIN METABOLISM, LIVER (3919)
AMINAZINE, ACUTE NONVIRAL HEPATITIS, JAUNDICE (7586)
AMINOSIDIN, DYSENTERY (6983)
AMPICILLINE, BILIARY TRACT, BACTERIAL INFECTION, JAUNDICE, LITHIASIS (5323)
ANTIBACTERIAL, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
ANTIBACTERIAL, INTESTINAL FLORA, BONE MARROW CELL PROLIFERATION (6503)
ANTISPASMODIC, PENTAPEPTIDE, METHYLSULFATE, ANTICHOLINERGIC (5523)
ANTITUBERCULOTICS, HEPATOTOXICITY, TUBERCULOTIC EXCESSIVE DRINKERS, LIVER FUNCTION TESTS (0595)
ATROPINE, GASTRIC SECRETORY INHIBITION, ACID PRODUCTION (5534)*
ATROPINE, ILEUM, COLON, RECTUM (4804)
AZATHIOPRINE, CROHN'S DISEASE, REGIONAL ENTERITIS, HEMOGLOBIN SERUM ALBUMIN, CHRONIC ULCERATIVE COLITIS (5881)
AZATHIOPRINE, CHRONIC HEPATITIS (9145)
BACTRIM, SALMONELLOSES, THERAPY (9237)
BARBITURATE, LIVER, MICROSOME, ENZYME, RAT (5401)
BARBITURATE, LIVER METABOLISM, ENZYME INDUCTION (8673)
BARBITURATE, OROTIC ACID SYNTHESIS, LIVER (5593)
BARBITURATE, PORPHYRIN METABOLISM, LIVER METABOLISM, HEPATIC ENZYMES (5563)*
BENZYDAMINE HCL, LIVER FUNCTION (9058)
BETAZOLE HYDROCHLORIDE, GASTRIC SECRETION, GASTRIC TUMOR, MAN (8878)
BLEOMYCIN, CANCER, ESOPHAGUS (6603)
CACIULATA, HEPATO-PROTECTIVE, PB POISONING (4453)
CARBENOXOLONE, GLYCYRRHETINIC ACID, GASTRIC SECRETION (7091)*
CARDIAC GLYCOSIDES, GASTROINTESTINAL DISTRIBUTION, REABSORPTION (8566)
CHLOROQUIN, JAUNDICE, INFECTIOUS HEPATITIS (6841)
CHOLERETIC, INDAZOLE DERIVATIVES, PHARMACODYNAMICS, RAT (8675)
CHOLESTEROL SYNTHESIS, LIVER, RAT (6478)
CHOLESTYRAMINE, ILEAL RESECTION, CHOLERIC DIARRHEA (7743)
CHOLESTYRAMINE, ILEAL RESECTION, DIARRHEA (7744)
CHOLESTYRAMINE, RECURRENT CHOLESTASIS, PREGNANCY (7553)
CHOLINOMIMETICS, CARBOHYDRATE METABOLISM, FAT METABOLISM, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)*
CHLOROFORM, MERCURY, GOLD, HEPATOTOXICITY, IATROGENIC, LIVER STEATOSIS (9100)
CLOFIBRATE, GALLSTONES, SODIUM DEHYDROCHOLATE, CHOLESTYRAMINE (6911)*
COCAINE ILEUM, 5-HYDROXY-TRYPTAMINE SUPERSENSITIVITY (6495)
CODEINE, AMINOPHENAZONE, LIVER METABOLISM (8614)*
COENZYME PREPARATION, LIVER PATHOLOGY, CLINICAL TRIAL (9054)
COLCHICINE, PEPTIDASE, DISACCHARIDASE, SMALL INTESTINE (4711)*
COMBINATION, HEPATOPROTECTIVE (5984)*
COUMARIN, 4-METHYLCOUMARIN, ETHIONINE, THIOACETAMIDE, HEXOBARBITAL, PHENOBARBITAL, 3-METHYLCHOLANTHRENE, LIVER ENZYME, TOXICITY (5425)*
CYCLOPHOSPHAMIDE ACTIVATION, EHRLICH CARCINOMA, YOSHIDA SARCOMA (7177)
DAPSONE, ANEMIA, MALABSORPTION (7678)*
DELAYED-ACTION, SIDE-EFFECTS (4655)
DIAZEPAM, ENDOSCOPY, GASTROINTESTINAL TRACT (4926)
DIAZEPAM, GASTROINTESTINAL MOTILITY, DUODENAL ULCER (6391)
DIBROMOHYDROXY-QUINOLINE, IODOCHLOROHYDROXY-QUINOLINE, DIARRHEA (9244)
DIGITALIS, SIDE EFFECTS, GASTROINTESTINAL BLEEDING (8860)
DIGLIUM, GASTRIC, ULCER, PSYCHOSOMATIC (6665)
DIMETHYL SULFIDE, MERCAPTONS, METHIONINE, CIRRHOSIS (5281)*
DIOXYPHENYLISATIN, COLON, MUCOSA, PRESSURE, INTESTINAL RESISTANCE (6695)
DIPHENYLHYDANTOIN, DEXAMETHASONE METABOLISM (7162)
DIROMO, COLITIS, GASTROENTERITIS (9203)
DISSOLUTION RATE, TABLET FORMULATION, GASTRIC JUICE, MAN (0906)
DIURETICS, HEPATIC COMA, ASCITES, CIRRHOSIS (6901)
DMSO, LIVER ENZYMES, MICROSOMAL ENZYMES, HEPATIC METABOLISM (5581)*
DOGMATIL, DIGESTIVE DISEASES, ANTIDEPRESSANT, PSYCHOTROPIC DRUG, HYPOTHALAMIC CENTER (5335)
DOGMATIL, SULPHIRIDE, PEPTIC ULCER, HYPOTHALAMIC CENTER (5035)
D-PENICILLAMINE TREATMENT, CHRONIC AGGRESSIVE HEPATITIS, LIVER FUNCTION TESTS (9143)
DROPERIDOL, GASTROINTESTINAL MOTILITY, ELECTROMYOGRAPHY, FENTANYL (6385)
DYSENTERY, AMOEBIASIS (5383)
EFFECT, DIPHENYLHYDANTOIN, LIVER, MICROSOME, METABOLISM, BIOTRANSFORMATION (5607)
EFFECT, GASTRIC MOTILITY, CONTRACTION, SYMPATHETIC STIMULATION, SYMPATHOMIMETIC DRUGS, BLOCKING AGENTS (5518)*

EFFECT, HYPERLIPOPROTEINEMIA, ENZYME, STEROIDS, LIVER (5564)*
EFFECT, LIVER, HYDROXYLAMINE DERIVATIVE, CHOLESTEROL (5565)*
EFFECTS, HEPATIC BLOOD FLOW, CHOLERESIS (7924)
ENTERIC COATING, PROTECTION AGAINST GASTRIC JUICE, ABSORPTION AT SMALL INTESTINAL LEVEL (8567)
ENZYMED, DIGESTIVE DISORDERS, ENZYME DEFICIENCIES, HYPOACIDITY (8863)
ESTRADIOL, LIVER, HENS, RNA (6481)
EUBIOSIS, INTESTINE (5406)
5-FLUORO-2-DEOXYURIDINE, LIVER, INFUSION (7728)
FLAVIASTASE, DYSPEPSIA, GASTROINTESTINAL TRACT DISORDERS (9226)
FLUOROURACIL, LIVER METASTASES, METABOLISM, PANCREATIC CARCINOMA (6014)
GASTROINTESTINAL TRACT, ABSORPTION, AVAILABILITY, IN VITRO (3865)*
GASTROTHERAPEUTIC, NEW (4178)
GI BLEEDING, ACUTE, PROPANOLOL, EPINEPHRINE (8420)*
GUANETHIDINE METABOLISM, INHIBITION, HEPATIC MICROSOMES (3056)
HALOGENATED ANESTHETICS, LIVER SENSITIZATION, CLINICAL SYNDROME (3602)
HALOTHANE ANESTHESIA, HEPATITIS (7590)
HALOTHANE NARCOSIS, LIVER DAMAGE, SURGERY (9112)
HEMOSTATIC, PEPTIC ULCER, STOMACH, HEMORRHAGE (5007)
HEXAMETHYLMELAMINE, PRIMARY HEPATIC CANCER (6796)
HEXOBARBITAL, CHLORPROMAZINE, PETHIDINE, MICROSOME, LIVER, INTESTINAL OBSTRUCTION (1950)
HISTAMINE, PENTAGASTRIN, SECRETION (7872)
IMMUNOSUPPRESSIVE, CHRONIC LIVER DISEASE, ANTIVIRAL (2828)
IMMUNOSUPPRESSIVES, GRANULOMATOUS ILEOCOLITIS, FEVER, LYMPHOID HYPERTROPHY, ULCERATION, CORTICOIDS (5135)
INSIDON, GASTROENTEROLOGY, PHARMACOLOGY (9211)
INTOXICATION, HEPATIC FAILURE, PERITONEAL DIALYSIS (6964)
IODOTHYMOL PIPERAZINE THERAPY, HOOKWORM (7006)
ISONIAZID, ABSORPTION, STOMACH, SMALL INTESTINE (6366)
ISONIAZID, HEPATIC LESION, ANTITUBERCULAR ACTIVITY, LUNG TUMOR, RIFAMPICINE (5230)
KETOSCILIUM, BILIARY TRACT, SPASTICITY (7749)
LEUCOGENENOL ISOLATION, BOVINE LIVER, HUMAN LIVER (3193)
LEUCOVORIN, METHOTREXATE, GI LESION (8429)
LIVER, MICROSOMES, PARATHION, PESTICIDES (7124)*
LIVER PREPARATIONS, BIOLOGICAL EVALUATION (0559)
METABOLAN, LIVER DISEASE (8292)
METABOLISM, ALCOHOL INTERFERENCE, LIVER FUNCTION (8667)
METABOLISM, LIVER, ADVERSE REACTIONS (3966)
METABOLISM, LIVER, CYTOCHROME P-450, HEXOBARBITAL (5566)*
METABOLISM, RETICULOENDOTHELIAL SYSTEM, HORMONE (6472)
METHYSERGIDE, DUMPING SYNDROME, ANTISEROTONIN, GASTRECTOMY, GASTROENTEROSTOMY, ULCER (5979)
METOCLOPRAMIDE, GASTRIC SECRETION, PHARMACODYNAMICS (8590)
METOCLOPRAMIDE, PHARMACOLOGY, GASTROINTESTINAL MOTILITY (8577)
METRONIDAZOLE, DIARRHEA, PROTOZOA, PARASITES (7757)
METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, AMEBIC LIVER ABSCESS (7011)
MICROSOME, ALCOHOL, OXANDROLONE, PHENOBARBITAL (6768)*
MICROSOME, ANDROGEN, ESTROGEN (7967)
M-TOLUYLENEDIAMINE, CARCINOGEN, LIVER, RAT (6827)
NEMATICIDE, TETRACHLOROTHIOPHENE, PESTICIDE, MICE, SYPHACIA OBVELATA (5408)
NEOMYCIN, COLCHICINE, CHOLESTEROL LOWERING (8374)*
NEOMYCIN, MALABSORPTION SYNDROME, METABOLIC DISORDERS (8697)
NICOTINE, GASTRIC SECRETION (4142)
NIRIDAZOLE, SCHISTOSOMIASIS, ANTIBODIES (8486)*
NITROGEN MUSTARD, ILEUM (6389)
NITROSTIGMINE, OBIDOXIME, HEPATOTOXICITY (4451)
OROTATE, GALACTOSAMINE HEPATITIS, LIVER (6845)
OXIDATION, LIVER MICROSOMES (7925)
PANCREABIL, L L 505, CHOLERETIC, ANTISPASMODIC, CONSTIPATION, POSTHEPATITIS (5354)
PARASYMPATHOLYTIC, INHIBITION, GASTRIC SECRETION, GASTRITIS (7331)
PB106, DIGESTIVE DISEASES, PAIN (4593)
PENTAGASTRIN, GASTRIC SECRETION, GASTRITIS (7327)*
PENTOBARBITAL, PHENOBARBITAL, HEPATIC ENZYME INDUCTION, REVERSIBILITY, SLEEPING TIME, MICE (4743)
PHENOBARBITAL, ETHANOL, FATTY LIVER (7578)*
PHENOBARBITAL, HYPERBILIRUBINEMIA, RAT (8679)
PHENOBARBITAL, LIVER METABOLISM, MALARIA (6270)
PHENOBARBITAL, NEONATAL JAUNDICE, HYPERBILIRUBINEMIA (6220)
POLYMERS, GASTROINTESTINAL ABSORPTION (6376)
PYRAZOLE, ETHANOL, FATTY LIVER (7579)*
PYRAZOLE, FATTY LIVER, ETHANOL (7577)*
PYRAZOLE, FUNCTION, LIVER (7125)*
PYRROLE DERIVATIVE, PYRROLIZIDINE ALKALOIDS, LIVER LESIONS (6844)
PREDNISONE THERAPY, CHOLESTASIS, VIRAL HEPATITIS, CHILDREN (9124)

- PROPAXOLINE THERAPY, GASTRODUODENAL INFLAMMATION, RADIOLOGY, ENDOSCOPY (8843)
- QUINOLINE DERIVATIVES, INTESTINAL FLORA, MAN (9253)
- RESERPINE, DUODENAL, ULTRASTRUCTURE (6306)*
- RIFAMPICIN, LIVER FUNCTION, BILIRUBIN (9089)
- SILYMARIN, FATTY LIVER, ALCOHOLISM, BLOOD CHEMISTRY, ELECTRON MICROSCOPY, PARENCHYMAL DAMAGE (5165)
- SODIUM DEOXYCHOLATE, PHENOL RED, ABSORPTION, INTESTINE (3868)
- SODIUM OXYFERRISCORBONE, PEPTIC ESOPHAGITIS, ENDOSCOPY, GASTRODUODENAL ULCER, HYPERACIDITY (4958)
- SULFAGUANIDINE, ABSORPTION, SMALL INTESTINE, BILE SALTS (5477)*
- SULFOBROMOPHTHALEIN, BILIARY TRANSPORT, GLUTATHIONE CONJUGATE, BILIARY EXCRETION, HEPATIC UPTAKE (4754)*
- SULFOBROMOPHTHALEIN, CLEARANCE, LIVER, RAT, HALOTHANE EXPOSURE (5223)*
- SULFONAMIDE, ABSORPTION, PH, IN VITRO MODEL, SULFACETAMIDE, SULFADIAZINE, SULFADRIMIDINE (5487)*
- SULFONAMIDE THERAPY, SHIGHELLA SONNEI INFECTIONS, ADULTS (9248)
- SULPIRIDE, CORTICOSTEROIDS, ULCER (7349)
- SULPIRIDE, GASTRODUODENAL ULCER, HEMORRHAGE, ARTERIAL TENSION, DUMPING SYNDROME (5038)
- SULPIRIDE, GASTRODUODENAL ULCERS, TREATMENT, MIGRAINE, ANTI-EMETIC, ENDOSCOPY, RADIOLOGY (6242)
- SULPIRIDE, GASTROINTESTINAL PATHOLOGY, CLINICAL EXPERIENCE (9221)
- THEOPHYLLINE, PORTAL VEIN, MOTILITY, ADRENERGIC RECEPTOR (5627)*
- THERAPY, ALPHA-LIPOIC ACID, ENDOCRINE CONTRACEPTIVES, LIVER DAMAGE (9109)
- THERAPY, SULPIRIDE, ANTICHOLINERGIC DRUGS, GASTRIC ULCER, GASTRIC EMPTYING (8887)
- THERAPY, SULPIRIDE, GASTRIC ULCER, CLINICAL USE (8888)
- THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE, AMP DEAMINASE (7150)*
- TOXICITY, RESERPINE, ULTRASTRUCTURE (8329)
- TRANQUILIZER, ULCER, STOMACH, DUODENUM, GASTRIC SECRETION (5040)
- TRANQUILIZERS, LIVER DISTURBANCE, HISTOPATHOLOGY (8329)
- TREATMENT, N(2'-CHLORO-4'-NITROPHENYL) 5-CHLOROSALICYLAMIDE TRICHOCEPHALOSIS (9267)
- TWEEN 80, OBSTRUCTION, MECONIUM ILEUS (7414)*
- ULCEROGENIC, ANTIULCER, GASTRIC SECRETION (7863)*
- URETHAN, TUMOR, HEPATECTOMY (8268)*
- VASOACTIVE, PORTAL, CIRCULATION (6804)

- DRUG ADDICTION
  - ACUTE VIRAL HEPATITIS, ANTIGEN ADOLESCENT (6100)
  - AUSTRALIA ANTIGEN, DENMARK (6101)
  - CHRONIC LIVER DISEASE, DIAGNOSIS, NUTRITION (0557)
  - CIRRHOSIS, ACUTE VIRAL HEPATITIS (6085)
  - SERUM HEPATITIS, SH ANTIGEN (5695)
- DRUG EFFECT
  - CANCER, ESOPHAGUS, RADIOLOGY, SURGERY (2553)
  - CHRONIC HEPATITIS, CHRONIC CIRRHOSIS, ANTIBODY, SERUM PROTEIN FRACTION (2819)
  - CHRONIC HEPATITIS, HEPATIC CIRRHOSIS, BLOOD, DIAGNOSIS (2889)
  - DEXAMETHASONE, CIRRHOSIS, ENZYME (2898)
  - GASTROENTERITIS, ENTEROCOLITIS, IRRITABLE-BOWEL SYNDROME, FAULTY DIGESTION (2953)
  - GASTROINTESTINAL TRACT, ENZYME, MOTILITY, ABSORPTION, PEPSIN, PANCREAS (2489)
  - HEPATIC DRUG METABOLISM, FETUS, NEWBORN, RAT (3208)
  - MUCOSA, COLON, CAT, PERISTALSIS (2477)
  - PANCREAS, SECRETION, ELASTASE (2364)
  - PROTEIN, TRACER TECHNIQUE, ULCER (2488)
  - QUATERON, STOMACH LAYERS, ADRENALINE, NORADRENALINE (0073)
  - SECRETION, ULCER, GASTRODUODENITIS, HEMORRHAGE (2634)
  - SKF 525A, CC14, DISTRIBUTION (7061)*
  - SPIRONOLACTONE, LIVER ULTRASTRUCTURE (3809)*
- DRUG METABOLISM
  - HYPOTHERMIA, BILIARY EXCRETION, LIVER, RAT (0110)
  - LIVER, ADJUVANT-INDUCED ARTHRITIS, RAT (3210)
  - LIVER, DRUG EFFECTS, FETUS, NEWBORN, RAT (3208)
  - LIVER ENZYMES, SMOOTH ENDOPLASMIC RETICULUM, HEPATECTOMY PHENOBARBITAL (3813)*
  - MAGNESIUM, DIVALENT CATIONS, MICROSOMES, LIVER, RAT (3072)
- DUMPING SYNDROME
  - BLOOD SEROTONIN, URINARY CATECHOLAMINES (1042)
  - DIARRHEA, POSTVAGOTOMY-PYLOROPLASTY, GASTRIN MECHANISM (0298)
  - GASTRIC RESECTION, SURGICAL TREATMENT (0327)
  - PATHOGENESIS, PARTIAL GASTRECTOMY, GASTRIC ULCERS (1044)
  - SURGERY, GASTRIC ULCERS, VAGOTOMY (1105)
- DUODENITIS
  - MORPHOLOGY, INCIDENCE, DIVERTICULOSIS (8109)
- DUODENO-PANCREATECTOMY
  - ONCOLOGY (0320)

DUODENUM
- ABSORPTION, TRIGLYCERIDES, RAT (0032)•
- ACID, PEPSIN, STOMACH, SECRETIN (2369)
- ACID, SECRETION, STOMACH (4866)
- ACIDIFICATION, EFFECT, GASTRIC, SECRETION (6398)•
- ACUTE ULCER, EROSION, STOMACH (5806)
- ACUTE ULCER, STOMACH, COMPLICATIONS (5804)
- ADENOMA, BRUNNER'S GLAND (1892)
- ALKALINE PHOSPHATASE, PYROPHOSPHATASE INHIBITION, MOUSE (0171)
- AMPULLA OF VATER, ENDOSCOPY, PATHOLOGY, ULCER, POLYP, DIVERTICULUM (0192)•
- ARTERIOMESENTERIC OBSTRUCTION, CHILD (4176)
- ASPIRATE, OSMOLALITY, SECRETIN (7987)
- ASPIRATES, EPINEPHRINE, SECRETIN (1092)
- ATRESIA, STENOSIS, OCCLUSION, MESENTERY ARTERY, MALROTATION (5013)
- ATRESIA, STENOSIS, SURGERY (0361)•
- ATROPINE, METACINE (0979)
- BICARBONATE RESPONSE, SECRETIN, PANCREAS (3228)•
- BILE DUCT, CHOLEDOCHO-DIGESTIVE, ANASTOMOSIS, COMPLICATIONS (0666)
- BILE DUCT, SPHINCTER OF ODDI, CHOLANGIOGRAPHY, MOTOR ACTIVITY, PANCREATITIS (2914)
- BILLROTH RESECTION, PERITONITIS, ANTIBIOTICS, DUODENAL FISTULA, DRAINAGE, PROTEASE INHIBITORS (4983)
- BIOPSY, DUODENITIS, GASTROINTESTINAL DISEASES (7321)•
- BRUNNER'S GLAND, POLYPOID HARMARTOMA, SURGERY (2607)
- BRUNNER'S GLANDS, POUCH, PANCREOZYMIN, MOTILITY (7194)•
- BULB, CARCINOMA, SURGERY (5800)
- CALCIUM ABSORPTION, CHRONIC RENAL DISEASE, RATS (0037)
- CALCIUM, VITAMIN D (3239)
- CANCER, DIAGNOSIS, TREATMENT (0330)
- CANCER, DUODENOSCOPY, SCOPIC BIOPSY (6645)
- CANCER, ULCER, EMBOLISM, HEMORRHAGE (3413)
- CARCINOID TUMOR, LANGERHANS ISLET TUMORS, ZOLLINGER-ELLISON SYNDROME (3372)
- CARCINOMA (5000)
- CARCINOMA, PRIMARY TUMOR (1049)
- CHOLECYSTOKININ-PANCREOZYMIN, GASTRIC PEPSIN, GASTRIN, INHIBITION OF SECRETIONS (3135)•
- CHOLEDOCHODUODENOSTOMY, AMPULLOSTOMY (4054)
- CHOLEDOCHODUODENOSTOMY, SPHINCTEROTOMY, COMPARISON, PAPILLOSTENOSIS (0375)
- CHOLESTEROL ESTER, STORAGE DISEASE, MUCOSA, ULTRASTRUCTURE (0358)•
- CHROMATIC FRACTIONAL CATHETERIZATION, BILE DUCT (3673)
- CHRONIC ILEUS, SURGERY (6643)
- CHRONIC OBSTRUCTION (7359)
- CHRONIC ULCER, SURGERY, CHILDREN (5837)
- COMMON BILE DUCT, HEMATEMESIS, ATELECTASIS, LIVER BIOPSY PUNCTURE (2518)
- COMPRESSION, ULCER, RADIOGRAPHY (4090)
- CONGENITAL ANOMALIES, DIVERTICULA (7363)
- CONGENITAL DIAPHRAGMATIC OCCLUSION (6650)
- CONTENT SAMPLING, NEW TECHNIQUE, PATHOGEN DEMONSTRATION (3311)
- CONTENTS, IMMUNOGLOBULINS, ANTIBODIES GASTROINTESTINAL SECRETIONS (0906)•
- CONTENTS, VOLUME, BICARBONATE, SECRETIN (6411)•
- CONTRACTION, NICOTINE, STOMACH (4801)
- CROHN'S DISEASE, HYPOTONIC DUODENOGRAPHY, RADIOLOGY (8926)
- CRYPT CELLS, DNA SYNTHESIS, CHELATING AGENTS (7198)
- CYST, BILE DUCT, STONE (5318)
- CYSTIC DYSTROPHY, STENOSIS (5147)
- CYTOLOGY, SECRETIN, CARCINOMA, PANCREAS (7221)•
- DEOXYCHOLATE, REABSORPTION, ILEITIS, TERMINAL (3418)•
- DIAGNOSIS, BIOPSY, RADIOLOGY (2523)
- DIAGNOSIS, PROLAPSE, GASTRIC MUCOSA, RADIOLOGY (2593)
- DIAGNOSIS, THERAPY, LITERATURE, REVIEW (8830)•
- DIGESTION, ABSORPTION, PHYSIOPATHOLOGY (3108)
- DILATION, MEGADUODENUM, CAST SYNDROME (1889)
- DISEASE, STOMACH, SEA WORKERS (4614)
- DIVERTICULA, SURGERY, PEPTIC ULCER (8859)
- DIVERTICULUM, BILIARY TRACT, OBSTRUCTION (5317)
- DIVERTICULUM, ESOPHAGEAL HERNIA, GASTRIC TUMOR (5802)
- DIVERTICULUM, JEJUNUM (2665)
- DIVERTICULUM, PERFORATION, ENTEROLITH (4997)
- DIVERTICULUM, RADIOLOGY, SURGERY (8116)
- DOG, PH, NEUTRALIZING CAPACITY (7191)•
- DRAINAGE, SPHINCTEROTOMY (1869)
- DRUG ABSORPTION, INSTILLATION, INJECTION, ATROPINE SULFATE, N-BUTYL HYOSCINE BROMIDE, DOGS (0056)
- DUMPING SYNDROME, ILEUM, ION (5080)
- DUODENAL BULB, MUCOSA, STOMACH (5004)
- DUODENOGRAPHY, RADIOLOGIC DIAGNOSIS, PANCREATICODUODENAL DISEASE (0943)•
- DUODENOJEJUNOSTOMY, ULCER, AMPULLA OF VATER (6561)
- DUPLICATION, SURGERY, CYSTO-JEJUNOSTOMY (5522)
- DYSKINESIA, OBSTRUCTIVE JAUNDICE, ODDI SPHINCTER, RADIOKINETICS (5322)
- ELECTRICAL STIMULATION, CHRONIC PANCREATITIS (7520)
- ENTEROKINASE, LOCALIZATION, RAT (3024)•
- ENZYMES, GASTRIN (0741)•
- ENZYMES, PANCREOZYMIN, CHOLECYSTOK-

IN, RADIOIMMUNOASSAY (0084)*
ENZYME ACTIVITY, LOCALIZATION, ALKALINE PHOSPHATASE (1617)
ENZYME HISTOCHEMISTRY, INTESTINES, MAN, ANIMALS (0752)*
EPITHELIUM, IRRADIATION, DNA SYNTHESIS, MITOSIS (7813)
EPITHELIUM, MITOSIS, IRRADIATION, MICE (0687)*
EPITHELIUM, ULTRASTRUCTURE, ENZYMATIC LOCALIZATION, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)*
ESOPHAGUS, JEJUNUM, GASTRECTOMY (1027)
FAMILIAL ATRESIA (6619)
FILLING DEFECT, CALCULI, BILIARY TRACT (3692)
FILLING DEFECT, GALLSTONE ILEUS, RADIOLOGY, JEJUNUM (5857)
FILLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, ILEUM, GASTRIC MUCOSA (5875)
FISTULA, COLON, DIAGNOSIS, SURGERY (5709)
FISTULA, SURGERY, DUODENOJEJUNOSTOMY (5774)
FISTULA, TRYPSIN INACTIVATOR, ACUTE PANCREATITIS (4981)
5-HYDROXYTRYPTAMINE, ADRENAL HORMONES, BORDETELLA PERTUSSIS VACCINE (7200)
FUNDIC MUCOSA, HISTOPATHOLOGY, GASTRIC ULCER, HIATAL HERNIA (8831)
G-2 POPULATION CELL, CELL DIVISION, MOUSE (2479)
GALLBLADDER, PRESSURES, VAGOTOMY, CHOLECYSTOKININ STIMULATION, CAT (1649)*
GASTRIN, HISTAMINE, ENZYME (3146)
GASTRODUODENAL, ALKALINE REFLUX, GASTRITIS (4164)
GASTRODUODENAL FISTULA, MULTIPLE (1040)
GASTRODUODENAL ULCER, ACUTE COMPLICATIONS, HEMORRHAGE, PERFORATION (0348)
GASTRODUODENAL ULCER, PERFORATION, PNEUMOGASTROGRAPHY, DIAGNOSIS (0219)
GASTRODUODENAL ULCER, PULMONARY TUBERCULOSIS, STATISTICAL CORRELATION (0344)
GASTRODUODENOSTOMY, ANTRECTOMY, VAGOTOMY (4174)
GLUCOSE-6-PHOSPHATE DEHYDROGENASE ACTIVITY, MUCOSA (0160)*
HEMATOMA, GALLBLADDER, BILE DUCT, SURGERY (5813)
HEMATOMA, TRAUMA (0587)
HEMORRHAGE, GASTRIC, LIVER CIRRHOSIS (6889)
HEMORRHAGE, STOMACH, PORTAL HYPERTENSION (4582)
HEMORRHAGE, STOMACH, SURGERY (4213)
HEMORRHAGE, ULCER (3379)
HERNIA, PARADUODENAL, INTESTINE (4218)
HETEROTOPIC GASTRIC MUCOSA, HISTOLOGY, PEPTIC ULCER (5826)*
HUNGER, MOTILITY, FOOD (7078)*
HYDROCHLORIC ACID, ELECTROLYTE CHANGE ASPIRATE (1070)
HYPOTONIC DUODENOGRAPHY, INDICATIONS, CONTRAST MEDIA (8762)
ILEUM, COLON, MUCOSA, SURGERY (5045)
ILEUM, MUCOSA, VITAMIN D (2471)
INFLAMMATION, GIARDIASIS, CHLOROQUINE MAN (1097)
INPAPAPILLARY, CARCINOMA, PARATHYROID ADENOMA (6621)
INTERNAL HERNIA, DIAGNOSIS, ANGIOGRAPHY, FOSSA (3278)
INTRALUMINAL DIVERTICULUM, PHYSIOPATHOLOGY, EMBRYOGENETIC BASIS, ACUTE PANCREATITIS (0335)
INTRAMURAL HEMATOMA, EVACUATION, BYPASS (0278)
INTRAMURAL HEMATOMA, TRAUMA (7343)
ISOLATED, BRADYKININ, PROSTAGLANDIN E1, MOTILITY, RAT (4797)*
JEJUNUM, ELECTRICAL ACTIVITY, CAT (3888)*
JEJUNUM, HISTOLOGY, MORPHOLOGY, VILLI (1570)*
JEJUNUM, ILEUM, SLOW WAVE (3884)*
JEJUNUM, REFLEX, SMALL INTESTINE (1655)
JUICE, AMYLASE, DETERMINATION, AMYLOCLASTIC TECHNIQUE, AUTOANALYZER (4812)
LESION, GASTRIC, HEMORRHAGE, PORTAL HYPERTENSION (7735)
LESIONS, HEMICOLECTOMY, COLIC FISTULA (1237)
LIPOMA, SMALL INTESTINE (1079)
LIPOPROTEIN, LYMPH, ULTRASTRUCTURE, TRANSPORT (5417)*
LYMPHOSARCOMA, SMALL INTESTINE (1091)
MAGNET-TIPPED TUBE STUDIES (3291)
MALIGNANT MELANOMA, STOMACH, SMALL INTESTINE, LUNG (0334)
METABOLISM, LYSOLECITHIN (5621)*
MORPHOLOGY, RADIATION EFFECTS (7038)
MOTILITY, STOMACH, BILE FLOW (5526)
MUCOSA, BACTERIAL FLORA, DUODENUM (2190)*
MUCOSA, CANCER, GASTRIC, DUODENAL (7334)
MUCOSA, CHRONIC HEPATITIS, CIRRHOSIS (7628)
MUCOSA, CONGENITAL LACTOSE, MALABSORPTION (6691)
MUCOSA, EPITHELIUM, ULTRASTRUCTURE, GOLGI APPARATUS, TRACER STUDY (4704)*
MUCOSA, JEJUNUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
MUCOSA, JEJUNUM, ENZYME (3823)
MUCOSA, MICROSCOPY, MALABSORPTION, DIFFERENTIAL DIAGNOSIS (8740)
MUCOSAL CELL, ENZYME, VITAMIN D (7021)*
NECROSIS, ACUTE PANCREATITIS (1335)
NICOTINE ACTION, CONTRACTILITY, DOG (4793)*
OBSTRUCTION (2601)
OBSTRUCTION, ANNULAR PANCREAS, CONGENITAL ANOMALY (5956)
OBSTRUCTION, EMBRYOLOGY, CONGENITAL (0287)
OBSTRUCTION, GALLSTONE (5330)

OBSTRUCTION, MALIGNANT VILLOUS ADENOMA (6675)
OCCLUSION (3358)
OCCLUSION, INTESTINAL ROTATION-FIXATION (4172)
OCCLUSION, NEONATE (2617)
O2 CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, PANCREAS (6507)
PACESETTER POTENTIAL, TRANSECTION EFFECT (3238)
PANCREAS, CLOSED TRAUMA, SURGERY (8288)
PANCREAS, PSEUDOCYST, RUPTURE (1315)
PANCREATECTOMY, DUODENECTOMY, AVASCULAR CLEAVAGE, LIGATION (0323)
PANCREATICODUODENECTOMY, TRAUMA (1316)
PANCREATO-DUODENAL INJURY, PANCREATODUODENECTOMY (7509)
PANCREATODUODENECTOMY, CARCINOMA, PERIAMPULLARY (0297)
PANCREATODUODENECTOMY, HERKSHEIMER-MANSFELD PHENOMENON (0303)
PANCREATODUODENECTOMY, PANCREATIC FISTULAE, METABOLIC DISORDERS (0508)
PANCREATIC JUICE, POUCH, CANNULATION (7101)•
PANETH CELL, MITOSIS, CELLULAR REGENERATION (1567)•
PAPILLA, CANCER, RADICAL SURGERY (5803)
PAPILLA, CANCER, SURGERY (5814)
PAPILLA, DUODENOSCOPY, PANCREOZYMIN (6517)•
PAPILLA MAJOR, OPERATIONS (3386)
PARAGANGLIOMA, NONCHROMAFFIN (5001)
PEPTIC ULCER, ANTRO-FUNDAL REGION, STOMACH (1903)•
PEPTIC ULCER, CHRONIC GASTRITIS, SURGERY (6195)
PEPTIC ULCER, CHRONIC RENAL INSUFFICIENCY (7398)
PEPTIC ULCER, DRUG THERAPY (1922)
PEPTIC ULCER, EPIDEMIOLOGY, CHILDHOOD (3397)
PEPTIC ULCER, FAMILY (5838)
PEPTIC ULCER, FAMILY, OCCUPATION, RELIGION (5839)
PEPTIC ULCER, GASTRIC SECRETION, MINERAL WATER (5851)
PEPTIC ULCER, GASTRIN STOMACH (7384)•
PEPTIC ULCER, GLUCOCORTICOID, STOMACH (5850)
PEPTIC ULCER, INHIBITION, PANCREATIC LIPID, DOG (4205)
PEPTIC ULCER, PALPABLE MASSES (1919)
PEPTIC ULCER, PERFORATED, SUTURE (0342)
PEPTIC ULCER, SELECTIVE VAGOTOMY, DIATHESIS (1901)•
PEPTIC ULCER, SMALL INTESTINE (1129)
PEPTIC ULCER, STOMACH, PANCREATIC SECRETION (5843)
PEPTIC ULCER, STOMACH, SURGERY (5844)
PEPTIC ULCER, SURGICAL TREATMENT (1904), (1924)
PEPTIC ULCER, SYMPTOMS (2650)
PEPTIC ULCER, VAGOTOMY (1921)
PEPTIC ULCER, VAGOTOMY (7402)
PERFORATED ULCER, VAGOTOMY, DRAINAGE (2653)
POLYPOID CARCINOMA, DIAGNOSIS, TREATMENT (1891)
PRIMARY CARCINOMA (1898)
PRIMARY CARCINOMA, DIAGNOSIS, TREATMENT (1890)
PRIMARY MALIGNANT TUMOR (4135)
RADIOGRAPHIC STUDY, PULMONARY EMPHYSEMA (1918)
RADIOLOGIC-GASTRIC ACID SECRETION CORRELATION, PEPTIC ULCER (3403)
RARE LESIONS, CROHN'S DISEASE, RADIOLOGY, ANATOMOPATHOLOGY (8873)
RETROPERITONEAL, TRAUMATIC RUPTURE, ABDOMEN, ESOPHAGUS (3729)
RUPTURE, BLUNT TRAUMA, RETROPERITONEAL (5797)
RUPTURE, STOMACH TRAUMA (7364)
RUPTURE, TRAUMA (1934)
SACS, MUCOSAL TRANSLOCATION, RAT (0060)
SECRETION, BICARBONATES, ASTRUP'S METHOD (4064)
SMALL INTESTINE, SURGERY, AMPULLA (1864)
STENOSIS, DYSPNEA, CYANOSIS, ATRESIA, EMERGENCY, CHILDREN (5345)
STENOSIS, PYLORUS, CONGENITAL, ULCERATION, ADOLESCENT (0294)
STENOSIS, SURGERY, RADIOLOGY (4151)
STOMACH, ANTICHOLINERGIC (1661)
STOMACH, BENIGN TUMOR, DIAGNOSIS, SURGERY (2609)
STOMACH, HEMORRHAGE, VAGOTOMY, DRAINAGE (1030)
STOMACH, PEPTIC ULCER, SURGERY (1135)
STOMACH, PYLOROPLASTY, DIARRHEA, GASTROENTEROSTOMY, VAGOTOMY (1902)•
STOMACH, STRESS ULCER, TREATMENT (1911)
STOMACH, ULCER, ANTICHOLINERGIC (1828)
STRESS ULCER, POSTOPERATIVE HEMORRHAGE STOMACH (5772)
STRESS ULCER, STOMACH (7393)
STRESS ULCER, TRAUMA, DUODENUM (5771)
STUMP, CLOSURE, GASTRIC SURGERY (3374)
STUMP CLOSURE, OX FASCIA (7358)
STUMP, INSUFFICIENCY, VAGOTOMY, DRAINAGE, RESECTION (6653)
SUBMUCOSAL HEMATOMA (7419)
SURGERY, CHOLEDOCHAL SPHINCTER, GALLBLADDER, PAPILLA (4544)
SURGERY, DIVERTICULUM, SMALL INTESTINE (2673)
SURGERY, GALLBLADDER (2347)
SURGERY, GASTRO-DUODENAL ULCER (3406)
SURGERY, PAPILLA, APHINCTER (3270)•
SURGICAL APPROACH, BILE DUCT (1498)
TRANS-SPHINCTEROTOMY, TECHNIQUE BIOPSY, VATER'S PAPILLA (4944)
TRAUMATIC RUPTURE, CHILD (4162)
TUMOR, BENIGN, GALLBLADDER, OBSTRUCTION (0338)
TUMORS, BENIGN, MALIGNANT, DIAGNOSIS (7269)
TUMOR, CANCER, MAN (0336)
TUMOR, RADIOLOGY, PAPILLOMA, METASTASES (5012)

ULCER, ABDOMINAL VAGOTOMY, CARDIA COMPETENCE (6642)
ULCER, ABSORPTION, SMALL INTESTINE (5888)
ULCER, ACID OUTPUT, HISTAMINE (3410)
ULCER, ACID SECRETION, CALCIUM CARBONATE (5768)
ULCER, ACID SECRETION, HISTALOG (5678)
ULCER, ALLERGIC PATHOGENESIS (2630)
ULCER, BLEEDING, GASTRIC MUCOSA FREEZING (0281)
ULCER, BLEEDING, SURGERY, NEONATE (4200)
ULCER, BLOOD GLUCOSE (1128)
ULCER, CHILDHOOD (2652)
ULCER, CHRONIC, BIOPSY TECHNIQUE (3290)
ULCER, CHRONIC, VAGOTOMY, DRAINAGE (0339)•
ULCER, CIRRHOSIS, HEMORRHAGE (4038)
ULCER, CLINICAL TREATMENT (2626)
ULCER, COEXISTING HIATUS HERNIA, TREATMENT (3325)
ULCER, DIETARY EFFECT (0341)
ULCER, DIETARY TREATMENT (1149)
ULCER, DOGMATIL, SULPIRIDE (5035)
ULCER, DRUG THERAPY, DUOGASTRONE (4186)•
ULCER, DUOGASTRONE, CARBENOXALONE NA (4186)•
ULCER, FUNCTIONAL BOWEL DISTRESS, GALLBLADDER (7678)
ULCER, GASTRECTOMY, PYLOROPLASTY, PANCREAS (4993)
ULCER, GASTRIC, BILROTH-II/FINSTERER RESECTION (4214)
ULCER, GASTRIC, CHRONIC HEPATITIS, CIRRHOSIS (0351)
ULCER, GASTRIC, GASTRIC SECRETION, SURGERY (7400)
ULCER, GASTRIC, STOMACH RESECTION (4210)
ULCER, GASTRIC ACID, INTUBATION, SURGERY (4212)
ULCER, GASTRIC ACIDITY, CLINICAL EVALUATION (1875)
ULCER, GASTRIC JUICE, SALIVA, BILE (5832)
ULCER, GASTRIC MUCUS, VISCOSITY (1916)
ULCER, GASTRIC OBSTRUCTION, CARCINOMA, TUBERCULOSIS (6634)
ULCER, GASTRIC RESECTION (3411)
ULCER, GASTRIC RESECTION, ENZYMATIC INHIBITOR (4208)
ULCER, GASTRIC RESECTION, HEMORRHAGE (7339)
ULCER, GASTRIC RESECTION, PANCREATITIS (5155)
ULCER, GASTRIC RESECTION, VAGOTOMY, PYLORIC STENOSIS, HYPERSECRETION (4951)
ULCER, GASTRIC RESECTION, WOMEN (3398)
ULCER, GASTRIC SECRETION, ACID (5033)
ULCER, GASTRIC SECRETION, HISTAMINE, GASTRIN, PEPSIN (4935)
ULCER, GASTRIC SECRETION, IRON BINDING CAPACITY (3390)•
ULCER, GASTRIC SECRETION, PENTAGASTRIN EFFECT (3387)•
ULCER, GASTRIC ULCER, GASTRIC SECRETION, TRANQUILIZER (5040)
ULCER, GASTRODUODENAL, ETIOPATHOGENESIS (0347)
ULCER, GASTROINTESTINAL MOTILITY, DIAZEPAM (6391)
ULCER, GERIATRICS, GASTROENTEROSTOMY, SUTURE (2638)
ULCER, HEMIGASTRECTOMIES, GASTRODUODENOSTOMY (3408)
ULCER, HEMORRHAGE, CELIAC OCCLUSION, ANGIOGRAPHY, LOCALIZATION, DIAGNOSIS (5674)
ULCER, HEMORRHAGE, SURGERY (1915)
ULCER, HEREDITY (5852)
ULCER, HYPERPARATHYROIDISM, DIATHESIS, PARATHYROID ADENOMA (5840)
ULCER, MOTILITY, SURGERY (5032)
ULCER, MUCOSA, BIOPSY, TELEMETRY (5847)
ULCER, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
ULCER, OSMOLARITY, INHIBITION, GASTRIC JUICES (3391)•
ULCER, PEDIATRICS (1912)
ULCER, PEPTIC, GASTRIC, INCIDENCE (7385)•
ULCER, PERFORATED, TREATMENT, VAGOTOMY (0345)
ULCER, PERFORATION (4201)
ULCER, PERFORATION, PYLOROPLASTY (5028)
ULCER, PERFORATION, STOMACH (4080)
ULCER, PERFORATION, SUTURE (4190)
ULCER, PERFORATION, VAGOTOMY, PYLOROPLASTY (0350)
ULCER, PYLOROPLASTY, RADIOLOGICAL ASSESSMENT (2610)
ULCER, PYLORUS, ESOPHAGUS (4191)
ULCER, RADIATION THERAPY, GASTRIC SECRETORY RESPONSE, HISTAMINE STIMULATION (4185)•
ULCER, RESECTION, JEJUNAL ULCER, PERITONITIS, VAGOTOMY, DYSTONIA, PAIN, NUTRITION (5025)
ULCER, SECRETAGOGUES, RAT (7386)•
ULCER, SERUM IRON, SERUM TRANSFERRIN, STOMACH OPERATION (1127)
ULCER, SMOKING, STOMACH (5029)
ULCER, STENOSIS, CHILD, PAPILLA, DIFFERENTIAL DIAGNOSIS, GASTRIC JUICE, RADIOLOGY (5915)
ULCER, STOMACH, CHRONIC PNEUMONIA (7410)
ULCER, STOMACH, MULTIPLE (0289)
ULCER, STOMACH, PHARMACOTHERAPY (5834)
ULCER, STOMACH, REPEATED SURGERY (3412)
ULCER, STOMACH, SMOOTH MUSCLE CONTRACTION BLOOD (5521)
ULCER, STOMACH, SURGERY (4194), (5027), (7390), (7401)
ULCER, STOMACH, SURGERY, SCANDINAVIA (4203)
ULCER, STOMACH, VAGOTOMY (5778), (5841)
ULCER, STRESS, SURGERY (1908)
ULCER, SULPIRIDE, HEMORRHAGE, DUMPING SYNDROME (5038)

- ULCER, SURGERY (1920), (2600), (3356), (3402), (4196), (4198), (4899), (7388), (7389)
- ULCER, SURGERY, COMPLICATIONS (8357)
- ULCER, SURGERY, ERRORS, SECRETION TEST, VAGOTOMY RESECTION, ACIDITY (5036)
- ULCER, SURGERY, GASTRIC SECRETION (5845)
- ULCER, SURGERY, GASTRIC VAGOTOMY, ANTRECTOMY (3405)
- ULCER, SURGERY, RECURRENCE (5037)
- ULCER, SURGERY, VAGOTOMY (1906)
- ULCER, SURGICAL TREATMENT (2651)
- ULCER SYNDROME, STOMACH, SULPIRIDEX TREATMENT (3407)
- ULCER, TREATMENT, STOMACH (4195)
- ULCER, VAGOTOMY, ANTRECTOMY, PYLOROPLASTY (8093)
- ULCER, VAGOTOMY, DISTAL ANTRECTOMY, GASTRIC ACID STIMULATION, CLINICAL FOLLOW-UP (1900)*
- ULCER, VAGOTOMY, DRAINAGE (6662)
- ULCER, VAGOTOMY, PARIETAL CELL MASS (5030)
- ULCER, VAGOTOMY, PYLOROPLASTY (5842)
- ULCER, VAGOTOMY, SURGERY (1907)
- ULCER, XYLAMIDE, STOMACH (4193)
- ULCERATION, CARCINOID TUMOR, MECKELS DIVERTICULUM (0371)
- ULCERATION, UROLOGICAL SURGERY (2647)
- ULCEROGENIC TUMOR, GASTRODUODENITIS, METASTASES (6644)
- ULTRASTRUCTURE, ARGYROPHILE, ARGENTAFFIN, RESERPINE (6306)*
- URETER, FISTULA (1881)
- VARICES, RADIOLOGY, DIFFERENTIAL DIAGNOSIS (8759)
- VASCULAR COMPRESSION, SCOLIOSIS, RADIOLOGY, SURGERY (6616)
- VILLUS EPITHELIAL CELLS, HISTOPATHOLOGY, MALABSORPTION, DIARRHEA, CHRONIC ALCOHOLISM (3707)*
- X-RAY TELEVISION, MASS SURVEY, ROLL FILM (3269)*

DWARFISM
- DYSTROPHIC, FAMILIAL, HIRSCHPRUNG'S DISEASE, CHILDREN (0476)

DYE
- CHOLEPHILIC, BROMOSULFOPHTHALEIN, CLINICAL CHEMISTRY (1747)
- FOOD, TRANSPORT, KIDNEY, LIVER (1641)
- INDOCYANINE GREEN, CLEARANCE (6454)*
- PROPYLIODON, PERISTALSIS, BARIUM, ILEUS (6574)

DYE TEST
- INFECTIOUS HEPATITIS, CHOLESTASIS, FUNCTIONAL CLEARANCE, DIAGNOSIS, DYE TEST (2878)
- TOXOPLASMA, IDIOPATHIC RETROPERITONEAL FIBROSIS (0696)

DYSCHEZIA
- IRRITABLE COLON, STASIS (1233)

DYSENTERY
- ACUTE, THERAPY, ANTIBIOTICS (7711)
- ACUTE, UROPEPSIN, SECRETION, GASTRIC JUICE (2957)
- ACUTE AMEBIC, DRUGS, ANTIBIOTICS (7021)
- AMEBIASIS, ENTAMOEBA HISTOLYTICA, INTESTINE (6272)
- AMEBIASIS, HISTORY (1553)
- AMEBIC, DISTRIBUTION (3004)
- AMEBIC, ELECTROCARDIOGRAM, EMETINE (3741)
- AMEBIC, MEXAFORM THERAPY, ENTOBEX THERAPY (3772)
- BACILLARY, AMINOSIDIN (6983)
- BACILLARY, INCIDENCE, S. SONNEI (3730)
- BACILLARY, KANENDOMYCIN THERAPY, RECTOSCOPY, ADULTS, CHILDREN (9243)
- BACILLARY, SUSCEPTIBLE HOSTS (4607)
- BACILLUS, SHIGELLA (2225)
- BACILLUS, SHIGELLA, DIARRHEA (4637)
- DIAGNOSIS, BACTERIOLOGY (5712)
- DRUG, AMOEBIASIS (5383)
- E. COLI, SEROLOGY (7729)
- ENTEROKINASE, ALKALINE PHOSPHATASE, BLOOD, URINE (7713)
- EPIDEMIC, SHIGELLA, ANTIBIOTIC RESISTANT (8463)
- EPIDEMIC, JAPAN ISLETS, SANITATION (2247)
- EPIDEMIOLOGY, FLY (3005)
- EPIDEMIOLOGY, MEXICO (2742)
- EPIDEMIOLOGY, U.S.S.R. (8454)
- INFANTS, EPIDEMIOLOGY (7693)
- LIVER DISEASE, ABSCESS, HEPATOMEGALY, JAUNDICE (4686)
- SHIGELLA, APPENDICITIS (3461)*
- SHIGELLA, COLICIN, EPIDEMOLOGY (0479)
- SHIGELLA, SALMONELLA, E.COLI, INFANT (6169)
- SONNE, SHIGELLA, EPIDEMIOLOGY, NEW ZEALAND (6274)

DYSPEPSIA
- ACUTE, FEBRILE, PEDIATRIC (3750)
- BILIARY, GALLBLADDER (4621)
- BISMUTH-SORBITOL, HIATAL HERNIA, ULCER, BILIARY DISEASE, COLITIS, CONSTIPATION (6167)
- FLAVIASASE THERAPY, HEPATOBILIARY TRACT DISEASES (9226)
- GASTRIC JUICE, COW'S MILK, CONSTIPATION, DIARRHEA, DEHYDRATION, VEGETABLES (5366)
- L L 505, CHOLERETIC, ANTISPASMODIC, CONSTIPATION, POST-HEPATITIS, MIGRAINE, PANCREARIL (5354)
- LIVER, METASTASES, ALKALINE PHOSPHATASE, LAPAROSCOPY, HYPOCHONDRIUM (5204)
- RECURRENT INVAGINATIONS, DIAGNOSIS, CHILDREN (8911)
- TREATMENT, AETHACRIDIN (3382)

DYSPHAGIA
- DIAGNOSIS, PHYSIOPATHOLOGY, ADULT (8776)
- DIAGNOSIS, TYPES (3323)
- ESOPHAGEAL LESION, STENOSIS, REFLUX, GASTRIC ASPIRATIONS, ESOPHAGEAL SPHINCTER (5735)
- ESOPHAGEAL RING, PNEUMATIC DILATION (5759)
- ESOPHAGEAL RING, SURGERY (8074)
- ESOPHAGEAL RING, SYMPTOMOLOGY, STENOSIS (6606)

- ESOPHAGEAL ULCERATION, STRICTURE, ULCERATIVE COLITIS (0499)
- ESOPHAGEOSCOPY, HYPERPLAGIC ADENOMATOSIS, REFLUX, DYSPEPSIA (0242)
- ESOPHAGITIS, STENOSIS, CROHN'S DISEASE (6604)
- ESOPHAGUS, STRICTURE, HIATAL HERNIA (2558)
- HIATAL HERNIA, ESOPHAGUS, DYSRHYTHMIA (2563)
- LOWER ESOPHAGEAL RING, RADIOLOGY (7307)
- LUSORIA, ESOPHAGUS, SUBCLAVIAN ARTERY (8058)
- PALLIATION, CELESTIN TUBE, CARCINOMA ESOPHAGUS, CARDIA (0261)
- PEPTIC ESOPHAGITIS, STENOSIS, EDER PUESTOW, DILATATION, HIATAL HERNIA (5736)
- PLUMMER VINSON'S SYNDROME (1015)
- POST-VAGOTOMY, ESOPHAGUS, RADIOLOGY (7295)*
- SALIVATION, REGURGITATION, ESOPHAGITIS, HIATAL HERNIA, GASTRIC ULCER, CHOLELITHIASIS, MALABSORPTION (6237)
- TREATMENT, MOUSSEAU-BARBIN TUBE, CARCINOMA, STOMACH (0992)

DYSPLASIA
- ABDOMINAL MUSCLES, MALFORMATION, GASTROINTESTINAL TRACT, GENITOURINARY TRACT (1513)

DYSRHYTHMIA
- ESOPHAGUS, HIATAL HERNIA, DYSPHAGIA (2563)

DYSTROPHY
- ACUTE, SERUM HEPATITIS (1426)
- GASTRIC, ELECTRICAL STIMULATION, DRUG EFFECTS, CATECHOLAMINE LEVELS ULCERATION (0329)

E. COLI
- DIARRHEA (3488)
- LIPOPOLYSACCHARIDE, ENDOTOXEMIA, LIVER MITOCHONDRIA (7683)*

ECHINOCOCCOSIS
- ABDOMEN, ASCITES, HEPATIC CIRRHOSIS (1538)
- CYST, THORACIC AREA, LIVER (4675)
- HYDATID CYST, TRANSMISSION (9261)*
- LIVER, RADIOISOTOPE SCANNING (7235)
- LIVER, SCINTOGRAPHY (6578)
- LIVER, SURGERY (4666)

EDEMA
- ALCOHOLIC CIRRHOSIS, CONTROL (4524)
- CIRRHOSIS, ASCITES, DIURETIC, MISCELLANEOUS DISEASES (1523)

EDTA
- ABSORPTION, IRON, CHELATION (3882)

ELASTASE
- AMINO ACID SEQUENCE, PORCINE PANCREAS (2361)*
- CHRONIC PANCREATITIS, ANTIELASTASE, FIFTH ENZYMATIC FRACTION (0517)
- PANCREAS, SECRETION, DRUG EFFECT (2364)

ELECTRICAL POTENTIAL
- LIVER, ACUTE SURGICAL CONDITIONS, RABBITS (0816)*
- TRANSMURAL, STOMACH, DOG, FEEDING, PEPTIDE STIMULATION (1683)

ELECTRICAL STIMULATION
- GASTRIC ANTRUM, HISTAMINE, INSULIN, ACID SECRETION, DOG (0789)*

ELECTROCARDIOGRAM
- EMETINE, DYSENTERY (3741)
- VIRAL HEPATITIS, SERUM BILIRUBIN, TRANSAMINASES (1431)

ELECTROCARDIOGRAPHY
- ALTERATIONS, ASCITIC CIRRHOSIS (2161)

ELECTROGASTROGRAM
- GASTRIC ULCERATION, STRESS, RAT (3294)

ELECTROLYTE
- ABSORPTION, COLON, BILE ACID (7060)*
- ABSORPTION, COLON, RECTUM, MAN (7845)
- ACID-BASE BALANCE, GASTRIC SECRETION (3144)
- ADENOCARCINOMA, RECTUM, COLON (3471)
- ALTERATION, LIVER CIRRHOSIS (2147)
- BALANCE, ALDOSTERONISM, ACID-BASE BALANCE (6948)
- BALANCE, CALCIUM, POTASSIUM, PHOSPHATE, CHILDREN, GASTRIC ACID EXCRETION (2386)
- BICARBONATES, CHLORIDES, PANCREATIC JUICE, PANCREATIC FISTULA (0083)*
- CALCIUM, ABSORPTION, INTESTINE, VITAMIN D3, STRONTIUM (4775)
- CALCIUM, ABSORPTION, PHOSPHORUS, INTESTINE, LACTOSE, TOLERANCE (5612)*
- CALCIUM, DEFICIENCY, GASTRECTOMY, DUMPING SYNDROME (5779)
- CALCIUM, MAGNESIUM, ABSORPTION, SMALL INTESTINE, JEJUNUM (1631)*
- CALCIUM, MALABSORPTION, CIRRHOSIS (5081)
- CALCIUM, SODIUM, ULCERATIVE COLITIS, GRANULOMATOUS (7499)*
- CHLORIDES, POTASSIUM, SODIUM, FLUID LOSS, UPPER GASTROINTESTINAL TRACT (8868)
- COPPER, HEPATIC CANCER, ZINC, POTASSIUM (5698)
- COPPER, LIVER, CARANOGEN, LACTATE DEHYDROGENASE, ISOENZYMES, MORPHOLOGY (5994)*
- COPPER, LIVER, TRAUMA, NON-VIRAL HEPATITIS (6067)
- COPPER, WILSON'S DISEASE, CERULOPLASMIN, CIRRHOSIS, LIVER, NEUROPATHY, LENTICULAR DEGENERATION (6019)
- COPPER, WILSON'S DISEASE, METABOLISM, DIAGNOSIS, TREATMENT (6820)
- COPPER, WILSON'S DISEASE, X-RAY, LIVER BIOPSY, BRAIN, FLUORESCENCE (5677)
- DISORDER, RECTAL PAPILLOMA (4303)
- FECAL LOSS, COLON RESECTION (7492)
- FERRITIN, HEPATOMA (6813)
- GASTROENTERITIS, UREA (5385)
- ILEUM, CELLULAR CALCIUM TRANSPORT SYSTEM, SMOOTH MUSCLE (1646)
- ILEUM, INTESTINAL TRANSPORT, SODIUM DEPLETION, THIRY-VELLA LOOP (1629)*
- INORGANIC, BILE SALT, ADSORPTION, CHOLESTYRAMINE, TEMPERATURE, IN VITRO STUDIES (5486)*
- INTESTINE, FLUID DIARRHEA (4595)

  IRON, ABSORPTION, AMINO ACID, VEGETABLE, FOOD (6353)*
  IRON, ABSORPTION, INTESTINE, REGULATION, FERRITIN (4755)*
  IRON, ABSORPTION, SMALL INTESTINE, CIRRHOSIS, PORTACAVAL SHUNT, DOG (6114)*
  IRON, ABSORPTION, SMALL INTESTINE, MUCOSA, NON-HEME IRON, HEMOGLOBIN (5484)*
  IRON, ACCUMULATION, LIVER, RADIOIRON KINETICS, HEMATOLOGICAL DISEASE, HUMAN-PHANTOM-REMCAL (5251)
  IRON, HEMOCHROMATOSIS, MALABSORPTION, PHLEBOTOMY THERAPY (5982)*
  IRON, METABOLISM, IRON-BINDING CAPACITY, HEMOCHROMATOSIS (5071)*
  IRON DEPOTS, HEMACHROMATOSIS, LIVER, PANCREAS, DIABETES, ENDOCRINE FACTORS (6045)
  IRON SORBITOL, MALABSORPTION (6692)
  IRON UTILIZATION, ABSORPTION, LACTOSE, MANNITOL, BLOOD CORPUSCLES, RAT (4763)
  K, POST-OPERATIVE CARDIAC MANAGEMENT (3683)
  K AND NA TISSUE LEVELS, VITAMIN A, NACL, ALANINE (3178)
  K+, RB+, ABSORPTION, LIVER (6354)*
  LIVER, POTASSIUM CONCENTRATION, METABOLISM (1740)
  LIVER FERRITIN, TUMOR, RAT (6990)
  LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)*
  MAGNESIUM, DEFICIENCY, ALBUMIN, SYNTHESIS (6438)*
  MAGNESIUM, SECRETION, PEPTAVLON, HISTAMINE (7094)*
  METABOLISM, STOMACH, SURGERY (5807)
  METALISOTOPE, METAL ELIMINATION, SMALL INTESTINE, PANETH CELL (5481)*
  NA+ -K+ -DEPENDENT ATPASE, AMP, GASTRIC MUCOSA (3914)
  NA+, K+, MG++ - ACTIVATED ATPASE, SMALL INTESTINE (3052)
  NUTRITION, GASTROENTERITIS (5384)
  OSTEOMALACIA, JEJUNUM, DIVERTICULOSIS, MALABSORPTION, RICKETTS (5078)
  OSTEOMALACIA, PANCREATITIS, BLIND LOOP SYNDROME, MALABSORPTION (5159)
  OSTEOMALACIA, RENAL, CADMIUM, ITAI ITAI DISEASE (5388)
  POTASSIUM, CHLORIDE, GLUCOSE, INSULIN, CIRRHOSIS, DIABETES (6121)
  POTASSIUM, GASTROINTESTINAL LESIONS (4596)
  POTASSIUM ION, THIAZIDE DIURETICS, SMALL INTESTINE LESIONS (8484)
  POTASSIUM THERAPY, SMALL INTESTINE LESIONS (6997)
  POTASSIUM, TRANSPORT, COLON, ADRENALECTOMIZED, SODIUM DEPLETED (0760)*
  POTASSIUM CHLORIDE, GASTROINTESTINAL TRACT, GASTRIC PERFORATION, ULCERATION, GASTRIC MUCOSA (4984)
  POTASSIUM CHLORIDE, ULCER, INTESTINE, MUCOSA, STENOSIS (5048)
  RESPIRATORY, HYDROGEN, EXCRETION, CARBOHYDRATE, MALABSORPTION (5648)*
  RUTIN, CONCREMENT, LIVER, BILE DUCT, SIDE EFFECT, INFLAMMATION, ANIMAL EXPERIMENT (5228)
  SALT LOADING, ILEUM, ABSORPTION, CAT (4783)
  SECRETION, GASTRIC ACID, PENTAPEPTIDE (3918)
  SODIUM, ABSORPTION, INTESTINE, SUGAR (4771)
  SODIUM BALANCE, RENAL ARTERY COMPRESSION, ANGIOTENSIN (7143)*
  SODIUM, SENSITIVITY, TRANSPORT, INTESTINE, AMINO ACID, SUGAR (5478)*
  SODIUM, SMALL INTESTINE, GLYCINE TRANSPORT, BIRD (4776)
  SODIUM, POTASSIUM, INTESTINAL, BULLFROG (8553)*
  STOMACH, ION TRANSPORT (1674)*
  ION, SODIUM, POTASSIUM, CIRRHOSIS, SURGERY (7645)
  TRANSPORT, CHOLERA, MARKER PERFUSION TECHNIQUE, INTESTINAL FLUID (1212)*
  TRANSPORT, EXCRETION, SODIUM, HEPATIC CONTROL (2400)*
  TRANSPORT, SMALL INTESTINE, VOLTAGE, RAT (0768)*
  WATER CONTENT, PYLORIC STENOSIS, SKELETAL MUSCLE (2583)*
  WATER LOSS, CHOLERA, INFANTS, CHILDREN (3754)
  WATER TRANSPORT, ABSORPTION, INTESTINE, OUABAIN, DIPHENYLHYDANTOIN, RAT (2348)
  WATER TRANSPORT, RECTUM, AMPULLA (6370)
  WATER TRANSPORT, RECTUM, AMPULLA RENAL (6699)
ELECTROMYOGRAPHY
  HUMAN STOMACH, CYCLIC VARIATIONS, MOTILITY (6387)
  SMALL INTESTINE, VASCULAR OCCLUSION, GANGRENE, DOG (0049)
ELECTRON MICROSCOPY
  CHARACTERISTICS, AMINE-STORING CELLS, GASTRIC, MUCOSA (6285)*
  DIGESTIVE TRACT EPITHELIUM, PHORONIS (3055)
  DUODENUM, ULTRASTRUCTURE, ENDOCRINE CELLS (6284)*
  ENDOPLASMIC RETICULUM, LIVER, PATHOLOGY (3596)
  GASTROINTESTINAL MUCOSA (3835)
  HEPATOCYTE, GLYCOGEN, LIVER (3047)
  IDIOPATHIC, JAUNDICE, PREGNANCY (6771)*
  LIVER, HAOLTHANE EFFECT (3603)
  LIVER, PLASMA MEMBRANES, HISTOCHEMISTRY (1619)
  LIVER, RUNTING SYNDROME, GRAFT VS. HOST REACTION, BACTERIAL ENDOTOXEMIA, MICE (1564)*
  LIVER CHANGES, LYNESTRENOL (4468)
  MITOCHONDRIA, PREPARATION, FIXATION (1565)*
  SCANNING, GASTRIC MUCOSA, SECRETION, PILOCARPINE (0737)*

- WHIPPLE'S DISEASE, INTESTINAL MUCOSA, MICRO-ORGANISM (6687)

ELECTRON TRANSPORT
- LIVER, MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, HALOTHANE, RAT (1707)*

ELECTROPHORESIS
- ACETYLGLUCOSAMINE, PHOSPHOTRANSFERASE (5618)*
- IMMUNOELECTROOSMOPHORESIS, SERUM, HEPATITIS, SH ANTIGEN (6518)*
- LIVER, IRON, FERRITINS (3222)
- LIVER PROTEIN, CHOLECYSTITIS (6154)
- PATTERNS, LIVER PROTEIN, HEPATOMA, RIBOSOME (1623)
- PEPSINOGEN, STOMACH, MUCOSA (3393)*
- PEPSINOGEN FRACTIONS, GASTRIC MUCOSA (2390)
- POLYACRYLAMIDE GEL, SECRETION, COLON LYSOGENIC FACTOR, RABBIT (0170)
- SERUM PROTEIN, CIRRHOSIS (0936)*

ELECTROPHYSIOLOGY
- COLON, SMOOTH MUSCLE, INNERVATION, ANIMALS (0774)*
- INTESTINE, MUCOSA, MOTILITY, OSMOTIC (6351)*
- JEJUNUM, MUSCLES, WAVES, SLOW, CAT, RABBIT (2358)*
- MUCOSAL POTENTIAL, RECTUM, COLON ALDOSTERONE (7064)*
- SMALL INTESTINE, BIOPOTENTIAL, SMOOTH MUSCLE (0039)*
- SMALL INTESTINE, DOG (0775)*
- SMALL INTESTINE, ELECTROLYTES, VOLTAGE, RAT (0768)*
- STOMACH, SMOOTH MUSCLE, MOTILITY, ATROPINE, GUINEA PIG (3865)*
- STOMACH WALL, DRUG EFFECT, DIETARY EFFECT, SHEEP (0051)

EMBOLISM
- MESENTERIC ARTERY, INTESTINE, ISCHEMIA (3746)

EMETIC
- ANTIMONY DIMERCAPTOSUCCINIC ACID, SCHISTOSOMIASIS, VEHICLE (1555)

EMETINE
- DYSENTERY, ELECTROCARDIOGRAM (3741)

EMPHYSEMA
- INTERSTITIAL, STOMACH (2586)

ENCEPHALITIS
- TICK-BORNE, LIVER FUNCTION (7574)

ENCEPHALOPATHY
- ACUTE, HEPATIC DYSFUNCTION, VARICELLA, CHILDREN (2066)
- EXPERIMENTAL, ELECTROENCEPHALOGRAPHIC STUDIES, CLINICAL STUDIES, RAT (2156)
- HEPATIC, EEG, CIRRHOSIS (6803)
- LIVER, CIRRHOSIS, CHRONIC AGGRESSIVE HEPATITIS, LACTULOSE THERAPY (9166)
- LIVER, EEG ANALYSIS, NEOMYCIN, LACTULOSE (6522)*
- PORTACAVAL SHUNT, TREATMENT, LACTULOSE (3548)*
- PORTAL SYSTEMIC, CIRRHOSIS, COLON, MICROFLORA (6941)*
- PORTOSYSTEMIC, SODIUM BICARBONATE TREATMENT, CEREBRAL BLOOD FLOW (0534)

ENDOCRINE SYSTEM
- CIRCADIAN RHYTHM, BILE ACIDS, CHOLESTEROL-7-ALPHA-HYDROXYLASE, RIBONUCLEIC ACIDS, RIBOSOMAL PROTEINS (4853)
- HYPOPHYSECTOMY, PITUITARY GRAFT, MOTILITY, SMALL INTESTINE (7087)
- HYPOPHYSECTOMY, SYNTHESIS, NUCLEIC ACID, PROTEIN, SMALL INTESTINE (7196)*
- HYPOTHYROIDISM, SURGERY, SLOW WAVES, COLON, ILEUM, OXYGEN CONSUMPTION, RABBITS (4786)*
- HYPOPHYSECTOMY, NUCLEIC ACIDS, ZINC, MANGANESE, LIVER, RAT (4829)*
- ISLET CELL, PANCREAS, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
- PARATHYROID, ADENOMA, DUODENAL CARCINOMA (6621)
- PARATHYROID, ADENOMA, DUODENAL ULCER, HYPERPARATHYROIDISM (5840)
- PARATHYROID, ADENOMA, HYPERCALCEMIA, PEPTIC ULCER (5836)
- PARATHYROID, FUNCTION, BILHARZIAL HEPATIC FIBROSIS (6281)
- PITUITARY CONTROL, GASTRIC EMPTYING (7088)
- THYROID, LIVER FUNCTION, BILE, HEPATIC BLOOD FLOW (6040)
- THYROID, TUMOR, DIARRHEA, MEDULLARY CARCINOMA, RECTOSCOPY, BRONCHOSCOPY, SURGERY (5341)
- THYROID DISTURBANCES, LIVER FUNCTION (2843)

ENDOCRINOPATHY
- PANCREAS, TUMOR (0708)
- ZOLLINGER-ELLISON SYNDROME, BIOASSAY, DIAGNOSIS, PANCREAS, ADENOMA (1520)
- ZOLLINGER-ELLISON SYNDROME, PANCREAS, TOTAL GASTRECTOMY (2240)
- ZOLLINGER-ELLISON SYNDROME, PEPTIC ULCER (1524)
- ZOLLINGER-ELLISON SYNDROME, SECONDARY AMENORRHEA, FATAL OUTCOME (2210)

ENDOMETRIOSIS
- LARGE INTESTINE, MORPHOLOGY, SYMPTOMATOLOGY (8981)
- SIGMOID COLON, OBSTRUCTION (1235)

ENDOPARASITE
- BIOCHEMICAL COMPOSITION, SEASONAL VARIATION (0883)

ENDOPLASMIC RETICULUM
- LIVER, PATHOLOGY, ELECTRON MICROSCOPY (3596)

ENDOPROSTHESIS
- CANCER, CARDIOESOPHAGEAL (1018)

ENDOSCOPY
- AMPULLA OF VATER, PANCREATOGRAPHY, CHOLANGIOGRAPHY, UROGRAFIN (6516)*
- ATROPHIC BORDER, PYLORIC GLAND, FUNDIC GLAND, CHRONIC GASTRITIS (0362)
- CANCER, ULCERATIVE GASTRIC, PROLIFERATING, SUPERFICIAL (4173)
- COLON, SURGERY (0432)
- DIRECT VISION, STOMACH, BIOPSY (1823)
- DUODENUM, FIBERDUODENOSCOPE, AMPULLA OF VATER (0192)*
- DUODENUM, FIBERDUODENOSCOPE, PAPILLA

- OF VATER, DIRECT VISUALIZATION, CANCER DIAGNOSIS (3272)
- ESOPHAGUS, VALIUM, I.V. (2541)
- FIBERDUODENOSCOPE, DUODENOSCOPY, DUODENAL MORPHOLOGY (6517)*
- FIBEROPTIC, UPPER GASTROINTESTINAL HEMORRHAGE (0189)*
- FIBROSCOPE, IMPACTION, ESOPHAGUS (0989)
- GASTRIC ULCER, HEALIC PROCESS, GASTROCINEMATOGRAPHY (8891)
- GASTROCAMERA, DIAGNOSTIC VALUE (0203)
- LIVER, METASTASIS (3284)
- OPERATIVE BILIARY, FLEXIBLE CHOLEDOCHOSCOPE, CHOLEDOCHOLITHOTOMY (2520)*
- PANCREATOCHOLANGIOGRAPHY, PANCREATIC CANCER, GALLSTONES (6519)*
- PREMEDICATION, PATIENT PERFORMANCE, MEPERIDINE, PSYCHOLOGICAL FACTOR (4017)*
- STOMACH, DIAGNOSIS (3304)
- STOMACH, FIBROSCOPE, PREPYLORIC ULCERIFORM CANCER, DIAGNOSIS(0319)
- STOMACH, GASTRIC BRUSH, DIRECT VISION CYTOLOGY, WASHING (0229)
- SURFACE CELLS, LIVER, STRUCTURAL VISUALIZATION (0190)*
- TUMOR, PSEUDO-TUMOR, ESO-CARDIAL REGION (4098)
- XANTHOMA, STOMACH, LIPID CONCENTRATION (1018)

ENEMA
- BARIUM, COMPLICATION (2508)*

ENTERIC FEVER
- CHLORAMPHENICOL, AMPICILLIN, ANTIBODY RESPONSE (2974)
- SALMONELLOSIS, DIAGNOSIS, INDIA (2973)
- SALMONELLOSIS, SMALL INTESTINE (1195)
- SALMONELLOSIS, SUDAN, WIDAL TEST (1194)
- TRIMETHOPRIM, SULPHAMETHOXAZOLE, TYPHOID FEVER, PARATYPHOID FEVER (0697)

ENTERITIS
- ACTINIC, ILEUS, OBLITERATIVE, VASCULITIS (6673)
- ACUTE, BACTERIA (2266)
- ACUTE REGIONAL, ETIOLOGY, ILEUM (4295)
- AEROMONAS, DIARRHEA (6984)
- ANTIBIOTIC, DIARRHEA, NEONATE (5371)
- CHRONIC, MOTILITY, SMALL INTESTINE (6194)
- CLOSTRIDIUM, DIARRHEA, SMALL INTESTINE (4884)
- COLI, INFANTS, STOOLS, RESISTANCE TYPE, EPIDEMIOLOGY (6164)
- COLON, ULCERATIVE COLITIS, DIAGNOSIS (1300)
- CROHN'S DISEASE, HYPERVASCULARIZATION, MESENTERIC ARTERY, ANGIOGRAPHY (5066)
- CROHN'S DISEASE, ILEUM (2671)
- DIAGNOSIS, CHARACTERISTIC, H-ANTIGEN, IMMUNOFLUORESCENCE, SYMPTOMATOLOGY (8722)
- DIAGNOSIS, IMMUNOFLUORESCENCE, CHARACTERISTIC, H-ANTIGEN, EPIDEMIOLOGY (8723)
- DIARRHEA, BACTERIA, SHIGELLA (2971)
- E. COLI, EPIDEMIOLOGY, NEONATE (7730)
- E. COLI, FLUORESCENT ANTIBODIES, DIAGNOSIS, INFANTS (7287)
- E. COLI, NEONATE (7731)
- EOSINOPHILIC, RADIOLOGY (7722)
- EPIDEMIOLOGY, MEXICO (2742)
- ETIOLOGY, ADENOVIRUS TYPE 2, CHILDREN (9205)
- FUROZOLIDONE, CHLORAMPHENICOL, ANTIBIOTICS (2226)
- HEMORRHAGE, GASTROINTESTINAL TRACT (5070)
- JEJUNUM, ILEUM, OSCARIS (5358)
- MALABSORPTION, PANCREATIC INSUFFICIENCY (5076)
- PEDIATRIC, TREATMENT, DIARRHEA (3749)
- POSTOPERATIVE, ANTIBIOTIC THERAPY, COLIFORM DIARRHEA, ABDOMINAL DISTENSION (0376)
- RADIATION, SURGICAL TREATMENT (0357)*
- REGIONAL, APPENDIX (1999)
- REGIONAL, CARCINOMA, SMALL INTESTINE (1960)
- REGIONAL, CEROID DEPOSITION, SMALL INTESTINE, DIFFUSE MALABSORPTION (0400)
- REGIONAL, CROHN'S DISEASE, APPENDIX (5067)
- REGIONAL, CROHN'S DISEASE, CHRONIC ULCERATIVE COLITIS, HEMOGLOBIN, SERUM ALBUMIN (5881)
- REGIONAL, CROHN'S DISEASE, COLITIS, GRANULOMATOSIS (1210)
- REGIONAL, CROHN'S DISEASE, COLON, DIVERTICULITIS, DIAGNOSIS (2697)
- REGIONAL, EPIDEMIOLOGY, STRESS FACTOR (3507)
- REGIONAL, GLUCOCORTICOIDS, STEROIDS (0702)
- REGIONAL, GRANULOMATOUS COLITIS, FOCAL (2759)
- REGIONAL, GROWTH RETARDATION (3435)*
- REGIONAL, ILEOCOLIC, PYELIC DILATION, URETERAL COMPRESSION (0438)
- REGIONAL, LARGE INTESTINE (1250)
- REGIONAL, RECTUM, ANUS, APPENDIX (2000)
- REGIONAL, SMALL INTESTINE, RADIOLOGY (1959)
- REGIONAL, ULCERATIVE COLITIS, CROHN'S DISEASE, CYTOSTATICS, ANTIBIOTIC (5127)
- SHIGELLOSIS, FATAL, CHILDREN (4583)
- SMALL INTESTINE, STENOSIS, CELIAC ARTERY (5069)
- YERSINIA ENTEROCOLITICA (3713)

ENTEROCOLITIS
- ACUTE, E. COLI O 124 (1161)
- CLINICAL CHARACTERISTICS, EPIDEMIOLOGY, SANITATION, CHILDREN (0689)
- DRUG EFFECT, DIARRHEA, PAIN, VOMITING, TENESMUS, CONSTIPATION (2953)
- INTESTINAL MUCOSA, DUODENUM, ILEUM, JEJUNUM, COLON, REGENERATION (6248)
- INTESTINE, BACTERIA (4622)
- REGIONAL, CROHN'S DISEASE, ABSORPTION SURGERY (1208)*
- SEGMENTAL, METEORISM, CARDIOVASCULAR

DISEASE (6947)
TUBERCULOUS, SURGERY, COLON (6987)
ENTEROGASTRONE
POLYPEPTIDE, ACID SECRETION, CHOLECYSTOKININ-PANCREOZYMIN (7095)•
SECRETION RELATIONSHIP, HEIDENHAIN POUCH, DUODENAL POUCH PH, DOGS (0081)
ENTEROKINASE
AROMATIC DIAMIDINE, INHIBITORY EFFECT (2379)
ENTEROLITHIASIS
RADIOLOGY, SMALL INTESTINE, MECKEL'S DIVERTICULUM (1958)
ENTEROPATHY
ACUTE ALLERGIC SEGMENTAL, PRETERMINAL ILEUM, NOVOCAINE (1947)
CHROMIUM (8459)
CHRONIC DIARRHEA, FLORA, ANTIBIOTIC (2960)
EXUDATIVE, SECONDARY, INTESTINAL LYMPHATIC (4591)
MALABSORPTION, MALIGNANCY (4257)
MALABSORPTION SYNDROME, PROTEIN-LOSS (0420)
MELANOMA, MALABSORPTION, SMALL INTESTINE (7736)
PROTEIN-LOSING, DERMATITIS HERPETIFORMIS, JEJUNAL MUCOSA (3447)•
PROTEIN-LOSING, GASTROPATHY (1859)•
PROTEIN LOSS, RETAINED INTESTINAL TUBE (2696)
STAPHYLOCOCCUS, PASTRY CREAM POISONING, EPIDEMIC (9229)
STENOSIS, ULCER, CROHN'S DISEASE (2664)
ENTEROSTOMY
PEDIATRICS, GASTROSTOMY, SURGERY (1074)
ENTEROTOMY
ILEUM, GALLSTONE (1941)
ENZYME
ACETYL COENZYME A, LIVER, RAT, IN VITRO (0864)
ACETYL-COA CARBOXYLASE, TRYPSIN TREATMENT, SENSITIVITY TO EFFECTORS LIVER, RAT (0823)
ACETYLCHOLINESTERASE, ACTIVITY, ALTERATION, ILEAL DENERVATION, RABBIT (5620)•
ACID HYDROLASE, SERUM LIVER, MUCOPOLYSACCHARIDOSIS I AND III (9078)
ACID PHOSPHATASE, ALKALINE PHOSPHATASE, OBSTRUCTIVE JAUNDICE (7162)•
ACID PHOSPHATASE, ALKALINE PHOSPHATASE, SMALL INTESTINE, DUODENAL EPITHELIUM, ULTRASTRUCTURE (5413)•
ACID PHOSPHATASE, RAT LIVER, ACTIVE CENTER (8526)
ACID PHOSPHATASE, SOLUBLE, MEMBRANE-BOUND, RAT LIVER (2278)•
ACTIVE ACETYL COA CARBOXYLASE, LIVER, RAT (0139)
ACTIVITIES, CHOLESTASIS, LIVER INJURY (4472)
ACTIVITIES, GASTROINTESTINAL DISEASES (7748)
ACTIVITIES, SMALL INTESTINE, DISACCHARIDASES (2285)•
ACTIVITY, HEPATIC INJURY, ETHIONINE, TRYPTOPHAN PYRROLASE, CORTISONE (1406)
ACTIVITY, HEPATITIS, CIRRHOSIS, METHODS, HEMOLYSIS, SGOT, SGPT, SERUM, LDH, PLASMA, LIVER METASTASES (4933)
ACTIVITY, LIVER, LIPOGENESIS, GROWTH FACTORS (6423)•
ACTIVITY, LOW TEMPERATURE, STORAGE TIME, LIVER, KIDNEY, JEJUNUM, RAT (1606)
ACTIVITY, PANCREAS, AMYLASE, LIPASE, CHYMOTRYPSIN, RAT EMBRYO, METHIONINE DEFICIENCY (4701)•
ADENOSINE DEAMINASE, LIVER, SPLEEN (3818)•
ADENOSINE DEAMINASE, SERUM, TYPHOID FEVER (4610)
ADENOSINE DEAMINASE, STRUCTURE, CALF INTESTINE (2998)•
ADENOSINE MONOPHOSPHATE DEAMINASE, THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (7150)•
ADENOSINE TRIPHOSPHOTASE, HEPATOCYTES, CELL CULTURE, FIBROBLASTS, CHICK EMBRYO (4741)•
ADENYL CYCLASE, HORMONE, BINDING (6447)•
ADENYL CYCLASE, SODIUM FLUORIDE, LIVER, RAT (3181)
ADRENAL CORTEX, LIVER, DIURNAL RHYTHM (2403)•
ALA-DEHYDRASE ACTIVITY, ALA-OXYDASE, ACTIVITY, SEVERE LIVER FAILURE (3577)
ALCOHOL DEHYDROGENASE, CIRRHOSIS, LIVER, ZINC, COPPER MANGANESE, SELENIUM, CADMIUM, WILSON'S DISEASE (6002)
ALCOHOL DEHYDROGENASE, COENZYME BINDING SITES, CATALYTIC SITES, AROMATIC ALDEHYDE REDUCTION, HORSE (1753)
ALCOHOL DEHYDROGENASE, COENZYME INTERACTION, LIVER, HORSE (0132)
ALCOHOL DEHYDROGENASE, HEPATIC, ALCOHOLISM (1401)
ALCOHOL DEHYDROGENASE, INACTIVATION, LIVER, HORSE (5445)
ALCOHOL DEHYDROGENASE, LIVER, CHELATION (7140)•
ALCOHOL DEHYDROGENASE, LIVER, PYRAZOLE (7126)•
ALCOHOL DEHYDROGENASE, METHANOL ACTIVITY (7973)
ALCOHOL DEHYDROGENASE, PROTEIN, ETHANOL, LIVER, TOXICITY, RATS (6062)•
ALDOLASE, HEPATOMA, YOSHIDA ASCITES, ALDOLASE C (5175)•
ALDOLASE, SPLITTING, FRUCTOSE PHOSPHATE, DEFECT (4259)
ALDOLASES A, C, HEPATOMA (6818)
ALKALINE DEOXYRIBONUCLEASE, REGENERATING LIVER (8643)

ALKALINE INORGANIC PYROPHOSPHATASE, ISOENZYMES, LIVER, CYTOSOL (3030)•
ALKALINE PHOSPHATASE, AMINOPEPTIDASE, ATPASE, GLUCURONIDASE, VIRAL HEPATITIS, ACUTE ATROPHY (5267)
ALKALINE PHOSPHATASE, GAMMA-GLUTAMYL TRANSPEPTIDASE, SERUM, LIVER METASTASES (2035)•
ALKALINE PHOSPHATASE, INDUCTION, BILE DUCT, OBSTRUCTION, LIVER, SERUM, RAT (3661)•
ALKALINE PHOSPHATASE, INTESTINE, X-IRRADIATION, RAT (4721)
ALKALINE PHOSPHATASE, LEUCOCYTE, CIRRHOSIS, OBSTRUCTIVE JAUNDICE, CHRONIC HEPATITIS, CHOLECYSTITIS (5725)
ALKALINE PHOSPHATASE, LEUCOCYTE, OBSTRUCTIVE JAUNDICE, ACUTE VIRAL HEPATITIS, TUMOR (5723)
ALKALINE PHOSPHATASE, LEUCOCYTE, VIRAL HEPATITIS, JAUNDICE (7259)
ALKALINE PHOSPHATASE, L-HOMOARGININE, INHIBITOR (7923)
ALKALINE PHOSPHATASE, LIVER, METASTASES, DYSPEPSIA, LAPAROSCOPY, HYPOCHONDRIUM (5204)
ALKALINE PHOSPHATASE, LYSOSOMES, ILEUM, NEONATE, RAT (1593)
ALKALINE PHOSPHATASE, NADP DEPHOSPHORYLATION, INTESTINE (7204)
ALKALINE PHOSPHATASE, PHOSPHORYLASE, VIRAL HEPATITIS (7615)
ALKALINE PHOSPHATASE, PYROPHOSPHATASE INHIBITION, DUODENUM, MOUSE (0171)
ALKALINE PHOSPHATASE, SERUM, GALLBLADDER, COMMON DUCT BILE (9187)
ALKALINE PHOSPHATASE, SERUM, PARTIAL GASTRECTOMY (5789)
ALKALINE PHOSPHATASE, SMALL INTESTINE, RAT (0167)
ALKALINE PYROPHOSPHATASES, INORGANIC, NUCLEOSIDE PHOSPHATE, HYDROLYSIS, LIVER (3200)
ALPHA AMYLASE, SERUM TRANSAMINASES, ACUTE PANCREATITIS (2027)•
ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, LIVER, HEPATOMA, THYROID (8270)•
ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, THYROID, MITOCHONDRIA, RIBOFLAVIN (7178)
ALPHA-KETO ACID DEHYDROGENASE, PYRUVATE DEHYDROGENASE, MITOCHONDRIA (0881)
AMINE OXIDASE, LIVER, MITOCHONDRIA, BEEF (6485)
AMINE OXIDASE SEPARATION, LIVER MITOCHONDRIA (1578)•
AMINO ACID CATABOLIZING, LIVER, DIET (7893)•
AMINOACYL TRANSFERASE, ADENOSINE DIPHOSPHATE RIBOSYLATION, DIPHTHERIA TOXIN, LIVER, RAT (2460)
AMINOPYRINE METHYLASE, NICKEL CARBONYL LIVER (7922)•
AMINOTRANSFERASE, AMINO ACID, GASTRIC MUCOSA, PEPTIC ULCER (3388)•
AMYLASE, AUTOMATED DETERMINATION (8729)
AMYLASE, DUODENAL JUICE, DETERMINATION, AMYLOCLASTIC TECHNIQUE, AUTO-ANALYZER (4812)
AMYLASE, GLUCOSE, BLOOD TEST STUDY, PANCREAS (3309)
AMYLASE, INTESTINE (6296)•
AMYLASE, LIPASE, PANCREATITIS, BILIARY LITHIASIS, ABDOMINAL PAIN, LEUCOCYTE (5153)
AMYLASE, LIPASE, TRYPSIN, PANCREATITIS (7257)
AMYLASE, PANCREAS, LIVER, SERUM, FETAL RAT (8601)
AMYLASE, PANCREATITIS, ALBUMIN (5156)
AMYLASE, PANCREATITIS, DIAGNOSIS, AUTOANALYZER (4942)
AMYLASE, PANCREATITIS, SHOCK, TRYPSIN INHIBITORS, INTERNAL BURN (5150)
AMYLASE, PYLORUS, DOG (7096)
AMYLASE, SECRETION, PANCREAS (4816)
AMYLASE, SYNTHESIS, INHIBITION, LIVER, CYANIDE POISONING, PROTECTION RAT (5567)•
ARGINASE, GLUCOSE-6-PHOSPHATASE, LIVER (7159)•
ARGINYL-TRANSFER RIBONUCLEIC ACID-PROTEIN TRANSFERASE, ISOLATION, LIVER, CYTOPLASM, RAT (2301)
ASCITES, CARCINOMA (2302)
ATPASE, INHIBITION, AMP, HUMAN MUCOSA (5479)•
ATPASE, NA+ -K+ -DEPENDENT, AMP, GASTRIC MUCOSA (3914)
ATPASE, CALCIUM, SMALL INTESTINE, BRUSH BORDER (3226)•
ATPASE, LIVER, MEMBRANE, FATTY ACID (6295)•
ATPASE, STEROID, LIVER, RAT (6339)
ATP-D-GLYCERALDEHYDE-3-PHOSPHOTRANSFERASE, LIVER AT VARIOUS AGES, RAT (8533)
AZO-REDUCTASE, BACTERIA, LARGE INTESTINE, FLAVOPROTEIN (3791)•
B-GLUCOSIDASE ACTIVITY, GAUCHER'S DISEASE (4440)
BARBITAL INDUCTION, LIVER (3049)
BETA-GLUCURONIDASE, ALIMENTARY CANAL, ANURAN TADPOLES, HERBIVOROUS, CARNIVOROUS (3066)
BETA-GLUCURONIDASE, LIVER, GROWTH, METAMORPHOSIS, TADPOLE (3067)
BETA-GLUCURONIDASE, PARATHION, SERUM, LIVER, RAT (3617)
BETA-HYDROXYBUTYRATE DEHYDROGENASE, MITOCHONDRIA, SHEEP, CATTLE (0121)
BILOKINASE, ACTIVITY, SODIUM TAUROCHOLATE, SECRETIN (2395)•
BLOOD, PANCREAS, STIMULATION, HISTOLOGY (1693)
CARBONIC ANHYDRASE, LOCALIZATION, PARIETAL, STOMACH (6308)•
CARBOXYLASE, LIVER, HISTOCHEMISTRY, MICROSOMES, PHOSPHOPYRUVATE (4689)•
CARBOXYPEPTIDASE, PANCREAS, ISOLATION PORCINE (1590)
CARNITINE ACETYLTRANSFERASE, MITO-

CHONDRIA, COMPARATIVE (0883)
CARNITINE PALMITOYLTRANSFERASE ACTIVITY, LIVER, FETAL, NEONATAL RAT (3206)
CAROTENE DIOXYGENASE, B-CAROTENE, RETINAL (6494)•
CATALASE, CHEMISTRY, AMINO ACID (5470)
CATALASE, LIVER, RHEUMATOLOGY, GOUT (1731)
CATALASE, PEROXISOME, HALF-LIFE, LABELLED LEUCINE (5610)
CATECHOL-O-METHYLTRANSFERASE, PURIFICATION, LIVER, RAT (2309)
CC14 LIVER DAMAGE, SORBITOL DEHYDROGENASE, GLUTAMATE DEHYDROGENASE (8320)•
CHITINASE, MUCOSA, MEMBRANE, IONS, LACERTA VIRIDIS (6401)
CHOLECYSTECTOMY, TRANSAMINASES, SORBITOL DEHYDROGENASE, GASTRIC RESECTION, LDH ACTIVITY, LIVER DISEASE (6223)
CHOLESTEROL-7 ALPHA-HYDROXYLASE, CIRCADIAN RHYTHM, BILE ACIDS, RIBONUCLEIC ACIDS, RIBOSOMAL PROTEINS (4853)
CHOLESTEROL ESTERIFYING, LIVER, NUTRITIONAL STATE (0112)
CHOLINESTERASE, LIVER, NICOTINAMIDE CC14 (7917)•
CHOLINESTERASE, DIAGNOSIS, PROGNOSIS, LIVER DISEASE (2138)
CHOLINESTERASE, EMBRYONIC LIVER, ENDOTHELIAL CELLS, CHICK (4736)
CHOLINESTERASE, HEPATITIS, HEPATIC COMA (3633)
CHOLINESTERASE, SERUM, LIVER DISEASE, DIAGNOSIS, PROGNOSIS (2138)
CHRONIC PANCREATITIS, SURGERY (2788)
CHYMOTRYPSIN-A, ESTER AND AMIDE CLEAVAGE, RATE (3054)
CIRRHOSIS, DEXAMETHASONE, DRUG EFFECT (2898)
COLON, BETA-GLUCURONIDASE, PHOSPHATASE ESTERASE (7454)•
CONCENTRATIONS, BILE (0144)
CREATINE PHOSPHOKINASE, SERUM, ACUTE PANCREATITIS (5970)
CYSTATHIONINE, ASSAY, LIVER (4735)
CYSTATHIONINE SYNTHASE, LIVER, PYRIDOXINE EFFECT, RAT (6484)
CYTIDINE TRIPHOSPHATE SYNTHETASE, LIVER, PURIFICATION, PROPERTIES (5464)
CYTOCHROME B CYCLE, CATIONS, MITOCHONDRIA (2430)
CYTOCHROME-C-OXIDASE, INHIBITION, REGENERATING LIVER, INTERCOLATING DYES (3933)•
D-AMINO AXIDASE, CATALASE, URATE OXIDASE (7033)•
DECARBOXYLASE, SMALL INTESTINE, MITOCHONDRIAL FRACTIONS, 5-HYDROXYKYNURENINE, 4, 6-DIHYDROXYQUINALINE (3025)•
DEFECT, MALABSORPTION (3458)
DEHYDROGENASE, ASSAY, LIVER (4737)
DEHYDROGENASE, GLUCOSE, XYLOSE, LIVER MICROSOME (6465)
DEHYDROGENASE, OXIDOREDUCTASE, LIVER, METABOLISM (4857)
DELTA 4-STEROID HYDROGENASE, TUMOR-BEARING LIVER, RAT (2279)•
DELTA-AMINOADIPATE AMINOTRANSFERASE, RAT LIVER MITOCHONDRIA (2289)•
DELTA-AMINOLEVULINIC ACID SYNTHETASE ACTIVITY, SEMIMICROASSAY METHOD (1601)
DELTA-AMINOLEVULINIC ACID SYNTHETASE, GLUCAGON-INDUCED, CHICK LIVER (2287)•
DELTA-AMINOLEVULINIC ACID SYNTHETASE, LIVER, BONE MARROW, COPROPORPHYRIA, MAN (1351)•
DEMETHYLASE, O-DEMETHYLASE, LIVER (3050)
DEOXYCYTIDYLATE DEAMINASE, HEPATOMA, RAT (2043)
DESOXYRIBONUCLEASE I, PANCREAS, PANCREATITIS, DIAGNOSIS (0526)
DEOXYTHYMIDINE KINASE, RNA TURNOVER, NEONATAL LIVER, HEPATOMA (7117)•
D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE, L-GLUTAMINE, CHOLESTEROL DIET (7181)
DIAGNOSIS, LIVER DISEASE (2080)
DIHYDROURACIL DEHYDROGENASE, PIG LIVER (7812)
DIPEPTIDYL AMINOPEPTIDASE I, GLUCAGON DEGRADATION, INACTIVATION, LIVER (0876)
DISACCHARIDASE, ASSAY, INTESTINE (3305)
DISACCHARIDASE, CYCLOPHOSPHAMIDE, INTESTINAL MUCOSA (4653)
DISACCHARIDASE, INTESTINAL MUCOSA (3993)
DISACCHARIDASE, INTESTINAL MUCOSA, ACTIVITY, CHANGE, COLCHICINE (3035)•
DISACCHARIDASE, MUCOSA, JEJUNAL GERIATRICS (0161)•
DISACCHARIDASE, PEPTIDASE, COLCHICINE, JEJUNUM (4711)•
DISACCHARIDASE, SMALL INTESTINE MUCOSA (3636)
DISACCHARIDASE, SUCRASE (0162)•
DISULFIDE REDUCTASE, TRANSHYDROGENASE, MICROSOMES, NADH, PYRIDINE NUCLEOTIDES (4688)•
DNA POLYMERASE, DNA SYNTHESIS, LIVER, MITOCHONDRIA (6474)
DNA POLYMERASE, RNA POLYMERASE, CANCER (7137)•
DOPA-DECARBOXYLASE, LIVER HOMOGENATES, PH OPTIMUM (7115)•
DPN-DEHYDROGENASE, PURIFICATION, CHICKEN BREAST AND LIVER (0131)
DRUG EFFECT, GASTROINTESTINAL TRACT, PEPSIN, PANCREAS, ABSORPTION (2489)
DRUG METABOLISM, INDUCTION, COUMARIN (3827)
DRUG METABOLISM, INHIBITION, LIVER, MICROSOME, HYDRAZINE DERIVATIVE (2298)
DRUG METABOLISM, LIVER, EMETINE (4708)•
DUODENUM, JEJUNUM, MUCOSA (3823)

ENTEROKINASE, ALKALINE PHOSPHATASE, DYSENTERY (7713)
ENTEROKINASE, LOCALIZATION, DUODENUM, RAT (3024)•
ENTEROKINASE, TRYPSIN, AROMATIC DIAMIDINE, INHIBITORY EFFECT (2379)
ESOPHAGUS, STOMACH, DUODENUM (3146)
ESTERASE, ISOZYME, LIVER, MOUSE (5447)
ESTERASE, LIVER, ACYL TRANSFER, KINETICS (7175)
ESTERASE, LIVER, SUBMICROSOMAL FRACTION (7774)•
ESTERASES, LOCALISATION, AUTORADIOGRAPHY (7037)•
EXCRETION, LIVER, DIAGNOSIS (7246)
FAT, ABSORPTION, DIGESTION (4773)
FATTY ACID SYNTHETASE, BINDING SITES, LIVER (5442)•, (5460)
FATTY ACID SYNTHETASE, FATTY ACID BIOSYNTHESIS, RAT, LIVER (8609)•
FATTY ACID SYNTHETASE, LIVER, UNSATURATED FATTY ACIDS, DIET, RAT (0887)
FATTY LIVER, ALCOHOL CONSUMPTION (7576)•
5-HYDROXYTRYPTOPHAN DECARBOXYLASE, SMALL INTESTINE (7035)•
FORMAMIDASE, RAT LIVER, PURIFICATION, PROPERTIES (2292)
FRUCTOSE DIPHOSPHATASE, LIVER, KIDNEY, COA (6290)•
FRUCTOSE PHOSPHATE ALDOLASE, CC14-DAMAGED LIVER (3608)
FUNCTION, METHYLENEDIOXYPHENYL COMPOUNDS, MICROSOMES, LIVER, RAT (3059)
GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, CONGENITAL LACK, GALACTOSEMIA, SIBLINGS (9067)
GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, INBORN ERROR OF METABOLISM, LIVER ANOMALIES, DIGESTIVE DISORDERS (9091)
GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, MUCOSA, GALACTOSEMIA (8273)•
GALACTOSYL-TRANSFERASE, INTESTINAL MUCOSA, CYTOPLASMIC FRACTIONS, GLYCOPROTEINS, RAT (4742)•
GALLBLADDER, ADENYL CYCLASE, WATER TRANSPORT, HORMONAL CONTROL (2398)•
GAMMA-GLUTAMYL-TRANSPEPTIDASE, ALKALINE PHOSPHATASE, LIVER METASTASES, OBSTRUCTIVE JAUNDICE (4936)
GASTRIC, SECRETORY FUNCTION, BLOOD AND URINE COMPOSITION, ADRENAL CORTEX, CHILDREN (0178)
GASTROINTESTINAL, DIGESTIVE PROTEASES, PANCREAS, INTESTINE, ACTIVITITIES, PROPERTIES (0087)
GDH, GOT, GPT, ACUTE VIRAL HEPATITIS (7609)
GLUCOAMYLASE, INTESTINE, LIVER, MORPHOLOGY, MONKEY (5410)•
GLUCOKINASE, LIVER, HYDROCORTISONE ACETATE, GLUCOSE, ESTRADIOL (5578)•
GLUCOKINASE, LIVER, MICROSOME (3845)
GLUCOSE-6-PHOSPHATASE, ETHANOL, DEOXYCHOLATE, LIVER, DIABETES (3956)
GLUCOSE-6-PHOSPHATASE, HEPATOCYTES, BLOOD CELLS, RAT (0120)
GLUCOSE-6-PHOSPHATASE, LIVER, GLYCOGEN, TRYPANOSOMA GAMBIENSE, GUINEA PIG (7018)
GLUCOSE-6-PHOSPHATE DEHYDROGENASE, LIVER, RHODAMINE SARCOMA (7042)
GLUCOSE-6-PHOSPHATE DEHYDROGENASE, STOMACH, DUODENUM, RATS, ALIMENTARY-CONDITIONED REFLEX (0160)•
GLUCURONIDASE, GASTRIC MUCOSAL CELL, GASTRIC JUICE (4976)•
GLUCURONIDE TRANSFERASE, BILIRUBIN CONJUGATION, TRANSFER (7956)
GLUCURONYL TRANSFERASE, JAUNDICE, BILIRUBIN COUPLING, NEWBORN INFANT (6003)
GLUCURONYL TRANSFERASE, LIVER, BILIRUBIN, MENTHOL (4844)•
GLUCURONYL TRANSFERASE, LIVER, URANYL NITRATE, RENAL ACTIVITY, RAT (5225)
GLUTAMATE DEHYDROGENASE (2308)
GLUTAMATE DEHYDROGENASE, BIOSYNTHESIS, AMPHIBIAN LIVER PREPARATIONS (1764)
GLUTAMATE FORMIMINOTRANSFERASE, SERINE HYDROXYMETHYLTRANSFERASE, METHYLENETETRAHYDROFOLATE DEHYDROGENASE, FORMYLTETRAHYDROFOLATE SYNTHETASE, JEJUNUM, DIET, FOLATE, METABOLISM (5611)•
GLYCERALDEHYDEPHOSPHATE DEHYDROGENASE, LIVER, BOVINE (6327)
GLYCOGEN PHOSPHORYLASE, LIVER, GLUCOSE, GLUCOCORTICOID (7142)•
GLYCOGEN SYNTHETASE, LIVER, GLUCOCORTICOIDS (7146)•
GLYCOGEN SYNTHETASE ACTIVITY, ASCITES, ALKYLATING AGENTS (7173)
GLYCOGENOSIS, PHOSPHORYLASE, METABOLISM (3062)
GLYCOLYTIC, PHOSPHOFRUCTOKINASE, PYRUVATE KINASE, FRUCTOSEDIPHOSPHATASE, HEXOKINASE, FRUCTOSE-1, 6-DIPHOSPHATE ALDOLASE, JEJUNUM, STEROID (5427)•
GLYCOLYTIC, PYRUVATE KINASE, PHOSPHOPHATASE JEJUNUM, DIETARY REGULATION, FOLIC ACID (5613)•
GLYCOLYTIC ACTIVITY, HORMONES, JEJUNUM RAT (5619)•
GLYCOSIDASE, INTESTINE, KIDNEY (7031)•
GUANASE, SERUM, LIVER DISEASE (3572)
GUANASE, SGPT, DIAGNOSIS, ACUTE VIRAL HEPATITIS, LIVER DISEASE (5686)
GUANASE, XANTHINE OXIDASE, DEVELOPMENT (0894)
GUANINE DEAMINASE, LIVER, INDUCTION (7969)
HEPATIC, BIOSYNTHESIS, SOMAN, DFP (4452)
HEPATIC, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS, PARTIAL HEPATECTOMY, RAT (5999)
HEPATIC, GLYOXALASE, LYMPHOSARCOMA (3953)•
HEPATIC, MONOAMINE OXIDASES, MITOCHONDRIA, ELECTROPHORESIS, RADIOISOTOPE ASSAY (4691)•
HEPATIC FRUCTOSE-1, 6-DIPHOSPHATASE, DEFICIENCY, METABOLIC ACIDOSIS (7527)•

HEPATIC MICROSOMAL, MITOCHONDRIAL, EHANOL (7127)*
HEPATIC RIBONUCLEASE, INHIBITOR, AGE (6468)
HEPATIC TRANSALDOLASE, HYPERTHYROID (3834)
HEPATITIS, VIRAL, CIRRHOSIS, MALATE DEHYDROGENASE, SORBIT DEHYDROGENASE, SERUM (0241)
HEPATOCARCINOGENESIS, MUSCLE TYPE ALDOLASE, TOTAL ALDOLASE (6831)*
HEPATOCEREBRAL SYNDROME, LIVER (4423)
HEXOKINASES, DEHYDROGENASES, PENTOSE-PHOSPHATE CYCLE, HEPATOMA (7547)
HEXOKINASE REACTION, GLYCOLYSIS, ASCITES TUMOR CELLS (3077)
HISTIDINE DECARBOXYLASE, BACTERIAL, STOMACH (7992)*
HISTIDINE DECARBOXYLASE, GASTRIC TISSUE (7796)*
HISTIDINE DECARBOXYLASE, HISTAMINE, FORMATION, RAT, MECHANISMS (0798)*
HISTIDINE DECARBOXYLASE, STOMACH, MUCOSA (6397)*
HISTIDINE DECARBOXYLASE, STOMACH, MUCOSA, HISTOCHEMISTRY (0071)*
HISTONE, METHYLASE ACTIVIEY, EMBRYONIC ADULT, NEOPLASTIC LIVER (7952)
HISTONE DEACETYLASE, LIVER, NOVIKOFF HEPATOMA (6459)
HISTONE KINASES, ADENOSINE 3'-5'CYCLIC PHOSPHATE (7022)*
HISTONE SPECIFIC TRANSACETYLASES, LIVER, NUCLEI (7051)
ILEUM, JEJUNUM, MUCOSA (1942)
INACTIVATION, SERINE DEHYDRATASE, SULFUR, MERCURIALS (5585)*
INBORN ALDOLASE DEFICIENCY, FRUCTOSE INTOLERANCE, TYROSINE, METABOLISM (8313)
INDUCTION, PHENYLBUTAZONE, LIVER MORPHOLOGY, RAT (7898)*
INDUCTION, PHOSPHOENOL PYRUVATE CARBOXYKINASE, HORMONE, ALTERATION, IRRADIATION (2415)*
INDUCTION, SPIRONOLACTONE, LIVER MICROSOME, MOUSE (7941)
INDUCTION, THERAPEUTICS, HYPERBILIRUBINEMIA (5469)
INHIBITORS, ACUTE PANCREATITIS, LIPASE, ANTITHROMBIN III, SPLANCHNIC BLOCK (5163)
INHIBITORS, TRYPSIN, PANCREATITIS, CONTRYCAL, DUODENAL FISTULA (4791)
INTESTINAL, CHRONIC COLITIS (1295)
INTESTINAL, FATS, EMULSIFICATION, LIPASE, TRIGLYCERIDE, HYDROLYSIS, ATP (4869)*
INTESTINAL, GLYCOSIDASE, DISACCHARIDE, CARBOHYDRATE, ABSORPTION, DIARRHEA, MEMBRANE PERMEABILITY (4870)*
INTESTINAL, NEONATAL, ADULT (0005)*
INTESTINAL GAMMA GLUTAMYL CARBOXYPEPTIDASE, DIPHENYL HYDANTOIN, BSP (7193)*
INTESTINE, MUCOSA, ACTH, CORTISONE (3853)
INTESTINE, MUCOSA, DNA (4723)
INTESTINE, MUCOSA, RAT (4748)
IODOTYROSINE DEIODASE, THYROID, LIVER (3850)
ISO-, ASPACTATE-AMINOTRANSFERASE, LIVER, CC14 POISONING (6850)
ISO-, CLINICAL SIGNIFICANCE, LIVER (6166)
ISO-, GLUCOSE-6-PHOSPHATE-DEHYDROGENASE, LIVER EXTRACT, ERYTHROCYTE, RAT (4740)
ISO-, ULCERATIVE COLITIS, LACTICDEHYDROGENASE, RECTOSCOPY, ISOENZYME, RECTAL MUCOSA (5131)
ISOENZYME, LIVER, DIAGNOSIS (4037)
ISOENZYME, LIVER, PROTEIN, RAT, GUANINE DEAMINASE (5453)
ISOENZYME, LIVER, PURIFICATION, HUMAN, CHICKEN (4717)
JEJUNUM, COLON, HISTOCHEMISTRY, ACTH CORTISONE (0169)
JEJUNUM, VILLI, CELLULAR DIFFERENTIATION (1784)*
KALLIKREIN, SALIVA, CYSTIC FIBROSIS, PANCREAS (1306)
KINASE, KININOGENASE, ACUTE HEMORRHAGIC PANCREATITIS, DOG (2026)*
KININASE, HEPATITIS, ARTERIOSCLEROSIS DIABETES (2118)
LACTASE, JEJUNAL DEFICIENCY, UNSPECIFIC ABDOMINAL COMPLAINTS (0356)*
LACTASE DEFICIENCY, JEJUNUM, LACTOSE MALABSORPTION, ESKIMOS (0403)*
LACTATE DEHYDROGENASE, CANCEROUS LIVER (4431)
LACTATE DEHYDROGENASE, EHRLICH-LETTRE ASCITES TUMOR (7041)
LACTATE DEHYDROGENASE, GASTRIC MUCOSA, JEJUNAL MUCOSA, SHEEP (8528)
LACTATE DEHYDROGENASE, LIVER, CARCINOGEN, COPPER, MORPHOLOGY (5994)*
LACTATE DEHYDROGENASE SUBUNITS, LIVER, PLASMA, VIRAL HEPATITIS (9010)
LACTIC DEHYDROGENASE, ACTIVITY, ISOENZYMES, ISOLATED LIVER PERFUSION (3082)
LACTIC DEHYDROGENASE, LIVER, PERFUSION, MITOCHONDRIA, MICROSOMES, RAT (5575)*
LACTOSE, SUCROSE, MALTOSE CARBOHYDRATE, DISACCHARIDE, INTESTINE, RAT , MALNUTRITION (5622)
LACTOSE ACTIVITY, SMALL INTESTINE MUCOSA, CARBOHYDRATE TOLERANCE TEST (7283)
LACTOSE DEFICIENCY, SMALL INTESTINE (7445)
L-ASPARAGINASE, LIVER REGENERATION, DNA SYNTHESIS (3162)*
LDH ISOENZYMES, SGOT, SGPT, ALKALINE PHOSPHATASE, ENDOTOXIN SHOCK, LIVER, CIRULATION (3551)*
LECITHIN-CHOLESTEROL ACYLTRANSFERASE, OBSTRUCTIVE, JAUNDICE (5301)*
LIPASE, GASTRIC MUCOSA, TRIGLYCERIDE (7027)*
LIPASE, LIPOLYTIC PANCREATITIS, CORTISONE (5961)*
LIPASE, LYSOSOMES, LIVER (1697)*
LIPASE, PANCREAS, SODIUM TAUROCHOLATE (6413)*

LIPASE, PANCREAS, TETRACYCLINE (4814)
LIPASE, PANCREAS, TRIOCTANOIN (4817)
LIPASE, SMALL INTESTINE, PANCREAS, SECRETION, TRIBUTYRINE (4815)
LIPID, SMALL INTESTINE, ABSORPTION (3867)•
LIPID METABOLISM, HEPATOMA, DIETARY FACTOR (3042)
LIPOGENESIS, FATTY ACID SYNTHESIS, LIVER (1716)•
LIVER, ABNORMALITIES, DIABETES (7919)•
LIVER, ACID PHOSPHATASE, CHICK EMBRYO (0884)
LIVER, ACTIVATION (3218)
LIVER, ACTIVITY, FATTY ACID SYNTHETASE, ACETYLTRANSACYLASE, MALONYLTRANSACYLASE (5441)•
LIVER, ACTIVITY, MITOCHONDRIA, EMBRYO, PHOSPHOENOLPYRUVATE CARBOXYKINASE, HYDROCORTISONE (3805)•
LIVER, ACTIVITY, MONO-OXYGENASE, CYTOCHROME P-450 (2426)•
LIVER, ACTIVITY, UDP GLUCURONYLTRANSFERASE, ULTRASOUND (5415)•
LIVER, ACYL-COA, PHOSPHATIDATE SYNTHESIS (2275)•
LIVER, ADENOSINE, NUCLEOTIDE (4850)
LIVER, ALCOHOL, ALLYL FORMATE (3611)
LIVER, ALCOHOL, DEHYROGENASE, PHYSIOLOGICAL ROLE (7903)•
LIVER, AMINOLEVULINIC ACID SYNTHETASE, INDUCTION, NEONATAL (7897)•
LIVER, ALCOHOL, METABOLISM (5444)
LIVER, ALKALINE PHOSPHATASE, AMPHOLINE INHIBITION (6309)•
LIVER, ALLYL ALCOHOL, LDH, TRANSAMINASE, MALIC DEHYDROGENASE, RATS (5174)•
LIVER, AMINOACYL PHOSPHATES, AMINO ACID, NI (3087)
LIVER, BETA-GLUCURONIDASE, SUBSTRATE (7032)•
LIVER, BILIRUBIN, ATRIOVENTRICULAR BLOCK (2826)
LIVER, BILIRUBIN, UDP-GLUCURONYL TRANSFERASE (7779)•
LIVER, CANCER (0538)•
LIVER, CARBON TETRACHLORIDE, KIDNEY (3855)
LIVER, CIRRHOSIS, HEPATITIS, CHILD (0194)•
LIVER, CIRRHOSIS, PROTEIN (4519)
LIVER, COENZYME, ALDEHYDE (4724)
LIVER, CORTISOL, THYROID, ADRENAL (3856)
LIVER, CRYSTALLIZATION, PROPERTIES, HUMAN (5451)
LIVER, CYSTEINE SULPHINIC ACID DECARBOXYLASE, SERINE DEHYDRASE, RAT (0158)
LIVER, DEHYDROGENASES, AMINO ACID CATABOLISM, ALPHA-KETO ACIDS (4818)•
LIVER, DIET, FAT (3214)
LIVER, DOLICBOL SYNTHESIS, STEREOCHEMISTRY (6476)
LIVER, DRUG EFFECTS, STEROID (5564)•
LIVER, DRUG METABOLISM, ADRENALECTOMY (1773)
LIVER, FATTY ACID SYNTHETASE, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
LIVER, FETUS, HISTOCHEMISTRY, MORPHOLOGY (0001)•
LIVER, FETUS, TRANSULFURATION, CYSTATHIONASE, CYSTATHIONINE, METHIONINE, CYSTINE (5420)•
LIVER, 5 PRIME-NUCLEOTIDASE ACTIVITY, PLASMA MEMBRANE (2274)•
LIVER, GEL ELECTROPHORESIS, SPECIES VARIABILITY, PHYLOGENY (2288)•
LIVER, GILBERT'S SYNDROME ALKAPTONURIA (7562)
LIVER, GLUCONEOGENIC, GLYCOLYTIC, DIABETIC HAMSTERS (8279)
LIVER, GLUCOKINASE, GLUCOSE-6-PHOSPHATASE, HYPERTHYROID (7135)•
LIVER, GLUCURONYL TRANSFERASE, DISEASE, CONGENITAL, ACQUIRED (7528)•
LIVER, GLYCEROL, TROUT (4846)
LIVER, GLYCOPROTEIN, N-ACETYLGLUCOSAMINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)
LIVER, GRAFT, HEPATITIS, HUMAN, BABOON (6069)
LIVER, GROWTH, ORNITHINE DECARBOXYLASE (3940)•
LIVER, HEPATITIS (4478)•
LIVER, HEPATITIS, CIRRHOSIS (4014)•
LIVER, HEPATOMA, ADENYLATE KINASE, ISOZYME, DIET, DIFFERENTIATION (3810)•
LIVER, HEPATOMA, DNA POLYMERASE ACTIVITY, RIBOSOME MICROSOMES (5429)•
LIVER, HEPATOMA, MORRIS, ADULT RAT, BENZPYRENE HYDROXYLASE, METHYLCHOLANTHRENE (3935)•
LIVER, HISTOCHEMISTRY, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)•
LIVER, HISTOCHEMISTRY, THYROXINE, METIZOLE, RAT (0023)
LYSOSOMAL HYDROLASES, LIVER, NUCLEI, RAT (8518)
LIVER, HYPERTENSION, CIRRHOSIS (6124)
LIVER, INDUCTION, TYROSINE AMINOTRANSFERASE, PHENTOLAMINE (7157)•
LIVER, INTERACTION, NUCLEOSIDE (4862)
LIVER, ISOZYME (4728)
LIVER, KIDNEY, AMPHIBIAN (4845)
LIVER, KIDNEY, HORMONAL REGULATION, CYCLIC AMP, RATS (0114)
LIVER, KWASHIORKOR, CHILDREN (5394)
LIVER, LOBE LIGATION, RAT (1598)
LIVER, METABOLISM (2293)
LIVER, METABOLISM, AMINOTRANSFERASE ACTIVITY (7158)•
LIVER, METABOLISM, CORTISOL (3857)
LIVER, METABOLISM, DDT (3580)
LIVER, METABOLISM, IRON, RIBOFLAVIN, IODIDE (7110)•
LIVER, METABOLISM, MORPHOLOGY (3579)
LIVER, METABOLISM, NUCLEOTIDE (2284)•
LIVER, METABOLISM PATHOLOGY (3220)
LIVER, MICROSOME, BARBITURATE, RAT (5601)

LIVER, MICROSOME, ETHANOL, UDPGT ACTIVITY (5604)
LIVER, MICROSOME, GLUCOSE (3837)
LIVER, MICROSOME, WAX (4720)
LIVER MICROSOMES, PARATHION, PESTICIDE (7124)•
LIVER, MITOCHONDRIA (4725)
LIVER, MITOCHONDRIA, CHICKEN (4719)
LIVER, MITOCHONDRIA, DEVELOPMENT (4727)
LIVER, MITOCHONDRIA, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)•
LIVER, MITOCHONDRIA, METABOLISM (1713)•
LIVER, MITOCHONDRIA, PHOSPHOLIPID (2286)•
LIVER, MITOCHONDRIA, RAT, KINETICS (4843)•
LIVER, NADPH CYTOCHROME C REDUCTASE, HUMAN, RAT (5418)•
LIVER, N-DEALKYLASE, N-OXIDASE, AGE (7891)•
LIVER, NERVOUS CONTROL, HEXOBARBITAL (2401)•
LIVER, NUCLEI, ACTIVITY, HYDROLASE, DISTRIBUTION, LYSOSOME (3799)•
LIVER, NUCLEI, ACTIVITY, PALMITOYL-COA (3803)•
LIVER, OBIDOXIN, TOXOGONIN, HUMAN (6467)
LIVER, PHENOL, METABOLISM (2445)
LIVER, PHOSPHATE, METABOLISM (2294)
LIVER, PORPHYRIN METABOLISM, BARBITURATE EFFECT (5563)•
LIVER, POSTMORTEM CHANGE, RAT (2830)
LIVER, PYRUVATE, HOLOCARBOXYLASE, SYNTHESIS, CHICKEN (7935)
LIVER, RAT, 6X-HYDROXYLASE (2414)•
LIVER, RAT, FOLATE, T4 INFLUENCE (4827)•
LIVER, RAT, NUCLEOTIDE, PREGNANCY (2469)
LIVER, REGENERATION, THYMECTOMY (3988)
LIVER, REGULATION, GLYCOLYSIS, BIOTIN DEFICIENCY (5569)•
LIVER, RNA POLYMERASE, AFLATOXIN B1 (3789)•
LIVER, SALT, ATP (3061)
LIVER, SECRETION, CASTRATION (3989)
LIVER, SERINE DEHYDRATASE, DIET, PANCREAS, ADRENALS, RAT (6479)
LIVER, TOXICITY, CHLOROFORM (3607)
LIVER, TUMOR, DIETHYLNITROSAMINE, GLUCOSE-6-PHOSPHATASE (6761)•
LIVER, XANTHINE OXIDASE, REGULATION, NAD, XANTHINE DEHYDROGENASE (3819)•
LIVER ACYL-PHOSPHOHYDROLASES, PHENOBARBITAL, RAT (0122)
LIVER CATALASE INDUCTION, HEMATIN, CX-REACTIVE PROTEIN RESPONSE (7957)
LIVER DAMAGE, VITAMIN, CARBON TETRACHLORIDE, PROTECTION, RAT, MITOCHONDRIA (2822)
LIVER DISEASE, GASTROINTESTINAL DISEASE, SERUM, DUPUYTREN'S CONTRACTURE (4373)
LIVER HOMOGENATE, MICROSOMES, UDP-GLUCURONIC ACID PYROPHOSPHATASE (7776)•
LIVER NUCLEI, RNA POLYMERASE, 1-TRYPTOPHAN, TRACER STUDIES (3800)•
L-SERINE DEHYDRATASE, LIVER, CASEIN HYDROLYSATE, STARVATION (7120)•
LYSOSOMAL, STOMACH, SMALL INTESTINE, CHICK EMBRYO AGE (3792)•
LYSOSOMAL LIVER, STILBAMIDINES (7104)•
LYSOSOMAL PROTEASES, PANCREATITIS (7512)
LYSOSOME, LIVER, RAT, PHOSPHATASE, RELEASE (2413)•
LYSOZYME, GASTRIC SECRETION, GASTRIC PATHOLOGY (6652)
MALATE DEHYDROGENASE, ISOZYMES, LIVER MITOCHONDRIA, RAT (6336)
MALTASE, INTESTINE, HETEROGENEITY (7023)•
MALTASE FRACTIONS, INTESTINE, PURIFICATION (7024)•
MECHANISM, AMINO ACID METABOLISM, LIVER, RAT (1736)
METABOLISM, LIVER, CHICK (6228)
METABOLISM, PANCREATITIS, PANCREATIC SECRETION (5971)
MEXASE, COLON, PANCREATITIS, BILIARY TRACT (5356)
MG++ -ACTIVATED ATPASE, NA+, K+, SMALL INTESTINE (3052)
MG 2+-ATPASE, (K+-NA+)-ATPASE, K+-DEPENDENT P-NITROPHENYL PHOSPHATASE ACTIVITY, PLASMA MEMBRANES, LIVER, RAT (3203)
MICROSOMAL, BENZO (A) PYREN BREAKDOWN, AIRBORNE DUST EXTRACTS, POLAROMATIC HYDROCARBONS, LIVER, RAT (3183)
MICROSOMAL, CHOLINEPHOSPHOTRANSFERASE, ETHANOLAMINEPHOSPHOTRANSFERASE, DIACYLGLYCEROL ACYLTRANSFERASE (8646)
MICROSOMAL, (NA+ AND K+)-STIMULATED ATPASE, CARDIAC STEROIDS, AMINO ACID TRANSPORT, INTESTINAL MUCOSA, RAT (1639)
MICROSOMAL GLUCOKINASE, LIVER, GLYCOLYSIS REGULATION, SYNTHESIS, ATP INHIBITION, AMP, RAT (5428)•
MICROSOMAL HYDROXYLASE, LIVER, INDUCTION, REVERSIBILITY, SLEEPING TIME, BARBITURATE METABOLISM, RAT (4744)
MICROSOMAL HYDROXYLASE, LIVER, PENTOBARBITAL, SLEEPING TIME, INDUCTION (4743)
MICROSOMAL INDUCTION, GALLBLADDER EXCRETION, BSP (7134)•
MICROSOME, LIVER, INTESTINAL OBSTRUCTION (1950)
MICROSOME, LIVER, PHENOBARBITONE (3046)
MICROSOME, LIVER, RAT (4716)
MICROSOME, STIMULATION, ANTI-OXIDANT (1614)
MISCELLANEOUS, ATPASE ACTIVITY, ION DEPENDENCE, LIVER, HEPATOMA, RATS (0829)•
MISCELLANEOUS, DIPEPTIDE HYDROLASES, ILEUM, JEJUNUM (0904)•
MISCELLANEOUS, HISTOCHEMISTRY, INTESTINES, MAN, ANIMALS (0752)•
MISCELLANEOUS, LIVER, BRAIN, IMMOBILIZATION, RAT (0859)

MISCELLANEOUS, PANCREATIC SECRETION, OUABAIN, ACETAZOLAMIDE, ATPASE, RABBIT (0809)*
MISCELLANEOUS, TYROSINE AMINOTRANSFERASE, LIVER, COLD, SHAKING, MICE (0832)*
MITOCHONDRIAL, EVOLUTION, HEPATOCYTES (7931)
MITOCHONDRIAL DEHYDROGENASE, GASTRIC MUCOSA, BIOPSY, ELECTRON MICROSCOPY (4977)
MITOCHONDRIAL FERROCHELATASE, LIVER, PHENOBARBITAL (7161)*
MONAMINE OXIDASE, GASTROINTESTINAL TRACT, HISTOCHEMISTRY (3032)*
MONAMINE OXIDASE, LIVER, IRON-DEFICIENCY, RAT (0834)
MONOAMINE OXIDASE, LIVER MITOCHONDRIA, RADIOISOTOPE ASSAY, ELECTROPHORESIS, RAT (4691)*
MONAMINE OXIDASE INHIBITION, PERFUSED LIVER, AMPHETAMINE REMOVAL, CAT (7940)
MONOOXYGENASE, LIVER, ADRENAL, MICROSOME, GUINEA PIG (4732)
MONOOXYGENASE, STEROID HYDROXYLATION, LIVER, PHENOBARBITAL (7953)
MONOOXYGENASE INDUCTION, ASCORBIC ACID LIVER MICROSOME, RAT (7933)
MUCOSA, SMALL INTESTINE, ABORIGINE (5858)
MUCOSA, SMALL INTESTINE, ELECTRON MICROSCOPY (3796)*
MUCOSA, STOMACH, ATP (4751)
MUCOSAL CELL, CHICK, VITAMIN D (7021)*
MUTAROTASES, SUGAR REABSORPTION, KIDNEY, INTESTINE, EMBRYONIC RAT, NEWBORN RAT (2349)
NAD SYNTHETASE, SPECIFICITY, RAT (7028)*
NADP-DEPENDENT ISOCITRATE DEHYDROGENASE, LIVER, CYTOPLASM, PIG (6335)
NADPH-CYTOCHROME-C-REDUCTASE, DIAPHORASE, TRANSHYDROGENASE, LIVER, RABBIT (0125)
NADPH SYSTEM, LIVER, REDOX POTENTIAL (7131)*
NEONATE, DIABETIC MOTHERS, STEROID HORMONES, METABOLITES, HYPOGLYCEMIA (6240)
NEUTRAL, ACID B-GALACTOSIDASE, SMALL INTESTINE (4864)*
NITRO-REDUCTASE, NADPH2-DEPENDENT, CARCINOGEN, LIVER MICROSOME (3058)
NUCLEASE, PROTEASE, HEPATOMA, ASCITES (6765)*
NUCLEOSIDE DIPHOSPHATASE, LYSOSOMES, LIVER, RAT (1603)
ORNITHINE AMINOTRANSFERASE, CHANG'S LIVER CELL, METHIONINE (6431)*
ORNITHINE AMINOTRANSFERASE, IMMUNOFLUORESCENCE, LIVER, RAT (4700)*
ORNITHINE AMINOTRANSFERASE, LIVER (3839)
ORNITHINE AMINOTRANSFERASE, LIVER, MITOCHONDRIA (1586)
ORNITHINE AMINOTRANSFERASE, RAT LIVER, KIDNEY, INTESTINE (8527)
ORNITHINE-CARBAMYL TRANSFERASE, HEPATOMEGALY, AMEBIASIS, HISTOLOGICAL LESIONS, RADIOGRAPHY (5397)*
ORNITHINE DECARBOXYLASE, LIVER, GROWTH HORMONE (7108)*
ORNITHINE TRANSAMINASE, LIVER, MITOCHONDRIA (3807)*
OXIDASE, MICROSOME, LIVER (4858)
OXIDASE, TRANSAMINASE, DEHYDROGENASE, LIVER (8364)*
PANCREAS, ALKYLATION, BROMOACETATE (2306)
PANCREAS, AMYLASE, GLYCO-AMYLASE TEST (5728)
PANCREAS, AMYLASE, LIPASE, VAGOTOMY, BICARBONATES, SECRETIN (5825)*
PANCREAS, LIPASE, ISOLATION, PURIFICATION (2272)*
PANCREAS, MALNUTRITION, PROTEIN DIET, AMYLASE (4327)*
PANCREAS, PROTEIN, DIET (1573)*
PANCREAS, SECRETION, FASTING (4813)
PANCREAS, SYNTHESIS, DRUG EFFECT (3158)
PANCREATIC, ACTIVITY, DIETARY COMPOSITION, DOG (0810)*
PANCREATIC, AMYLASE, TRYPSIN, LIPASE, PROTEIN-CALORIE MALNUTRITION DISEASE (0807)*
PANCREATIC, LIPASE, AMYLASE, CHRONIC PANCREATITIS, ACUTE PANCREATITIS, PANCREOZYMIN (4938)
PANCREATIC, PANCREATITIS, ACUTE ABDOMEN, DUODENAL JUICE, STOOLS (5666)
PANCREATIC ENZYMES, SOYBEAN FLOUR (6410)*
PANCREATIC ISOAMYLASES, AMINO ACID CONTENT (7030)*
PANCREATIC LIPASE, SUBSTRATE SPECIFICITY, FATTY ACID (8504)*
PANCREATIC RIBONUCLEASE, LYSINE RESIDUES (7811)
PANCREATITIS, SECRETION, EDEMA, ACUTE, DIAGNOSIS, SCLEROSIS (2792)
PANCREOZYMIN, CHOLECYSTOKININ, RADIOIMMUNOASSAY, DUODENUM (0084)*
PANCREOZYMIN, ZYMOGEN, PANCREAS (1572)*
PEPSIN, GASTRIC JUICE, INHIBITOR (6399)
PEPSIN, GASTRIC MUCOSA, ZONES (7864)*
PEPSIN, GASTRIC SECRETION, ACID, ADRENOMIMETIC (5546)
PEPSIN, GASTRICSIN, AMINO ACID, HUMAN (4810)
PEPSIN, SECRETION, GASTRIN, FROG, ACID (5549)
PEPSIN, STOMACH MUCOSA, HYPERACIDITY, SIALIC ACID, PROTEOLYSIS (5531)*
PEPTIDE HYDROLASE, SMALL INTESTINE, MUCOSA, CELIAC DISEASE (3441)*
PEROXISOME, LIVER, CYTOLOGY, FUNCTION (5446)
PHS, INHIBITORY EFFECTS, PROTEIN SYNTHESIS, AMINO ACID INCORPORATING SYSTEM (1749)
PHENYL ACETATE ESTERASE, SERUM, LIVER FUNCTION (1763)

PHENYLALANINE HYDROXYLASE, METHODOLOGY, RAT (0865)
PHOSPHATASE, ACETOACETATE, MITOCHONDRIAL ATPASE, LIVER, RAT (0129)
PHOSPHATASE, COLON MUCOSA, ANTIGENS, MAN (7821)
PHOSPHATASE, DRUG-METABOLIZING, LIVER, TOXICITY, CARBON TETRACHLORIDE (5425)•
PHOSPHATASE, GLUCOSE-6, THIAMINE PYROPHASPHATASE, JEJUNUM, EPITHELIUM (4703)•
PHOSPHATASE, LIVER, BILE CANALICULAR (7029)•
PHOSPHOADENOSINEPHOSPHOSULFATE-TRANSFERASE, TAURINE, BIOSYNTHESIS, CHICK (0889)
PHOSPHODIESTERASE, LIVER, INTRACELLULAR LOCALIZATION (0730)•
PHOSPHODIESTERASE I, INTESTINAL MUCOSA, MICROSOMES (8692)
PHOSPHOFRUCTOKINASE, LIVER (5438)•
PHOSPHOGLUCOSE ISOMERASE, SERUM, LIVER DISEASE (1434)
PHOSPHOLIPASE, INTESTINE, MUCOSA (6492)•
PHOSPHOLIPASE A, HUMAN PANCREATIC JUICE, PURIFICATION (0814)
PHOSPHOLIPASE A, INTESTINAL PROSTAGLANDIN, FATTY ACIDS (7192)•
PHOSPHORYLASE, GLUCOSE-6-PHOSPHATASE, GLYCOGEN SYNTHETASE, LIVER (4372)•
PHOSPHORYLASE, NEONATAL LIVER (0731)•
PHOSPHORYLASE, PHOSPHORYLASE KINASE, GLYCOGENOSIS, LIVER, MUSCLE (7572)
PHOSPHARYLASE PHOSPHATASE, LIVER, INTERCONVERSION, ATP (0732)•
PHYTOHEMAGGLUTIN-INDUCED CHANGES, LIVER, SPLEEN, MICE (0106)
PLASMA MEMBRANE FRACTION, LIVER (2283)•
PLASMINOGEN, TRYPSIN, STOMACH, CANCER (1868)
PLEURAL EFFUSION, CHRONIC PANCREATITIS HEMORRHAGIC ASCITES, SURGERY (8255)
PLEURAL EFFUSION, PANCREATIC DISEASE, COMPLICATIONS, SURGERY (5957)
PROTEASE, ASPERGILLUS, PH (5642)
PROTEASE, LIVER, HISTAMINE (8659)
PROTEASE, STOMACH, PATHOLOGY (8529)
PROTEASE, PANCREATIC JUICE, ADAPTATION, DIETARY COMPOSITION, DOG (0810)•
PROTEASE, PAPAIN, HEPATIC REGENERATION, PARTIAL HEPATECTOMY, RATS (4851)
PROTEASE, PEPSINOGEN, ELECTROPHORESIS GASTRIC MUCOSA (0784)•
PROTEASE, SMALL INTESTINE, LYSOZYME, CHYMOTRYPSIN (5617)•
PROTEASE INHIBITOR, TRASYLOL, PANCREATITIS, URINE DAISTASE, ADMINISTRATION (4354)
PROTEIN, INTESTINE, ABSORPTION (4767)
PROTEOLYTIC, ABSORPTION, INTESTINE (6368)
PROTEOLYTIC, ACUTE PANCREATITIS, SECRETIN STIMULATION, HEMORRHAGIC NECROSIS, EDEMA (5781)
PROTEOLYTIC, ADENOCARCINOMA, COLON (2809)•
PROTEOLYTIC, PEPSIN, GASTRICSIN, INACTIVATORS (5538)
PROTEOLYTIC PURIFICATION, PANCREAS, FIN WHALE (0815)
PSEUDOCHOLINESTERASE, HEPATECTOMY, SEX HORMONE (8622)•
PYRIDINE COENZYMES, LIVER, O2 PRESSURE (3831)
PYRIMIDINE NUCLEOTIDE METABOLISM, DELTA-NAPTHYLISOTHIOCYANATE DIET, LIVER, RAT (3621)
PYROPHOSPHATASE, GLUCOSE PHOSPHOTRANSFERASE, GLUCOSE-6-PHOSPHATASE (7802)
PYRROLIDONYL PEPTIDASE (7039)
PYRUVATE CARBOXYLASE, DEFICIENCY, LIVER, HYPERALANINEMIA, PYRUVICEMIA (2063)
PYRUVATE CARBOXYLASE, LIVER, RAT, MAN, IN VITRO (2442)
PYRUVATE CARBOXYLASE, PHOSPHOENOLPYRUVATE CARBOXYKINASE, INTESTINE (4341)
PYRUVATE CARBOXYLASE PROTECTION, AVIDIN INHIBITION, LIVER, CHICKEN (7949)
PYRUVATE KINASE, ACTIVATION, LIVER (1705)•
PYRUVATE KINASE, HEPATOMA, DIET (6821)
PYRUVATE KINASE AND PHOSPHOENOLPYRUVATE CROSSROADS, REGULATION, LIVER (3191)
QUININEOXIDASE, TRANSAMINASE, SORBITOLDEHYDROGENASE, SERUM, LIVER DAMAGE, CALCULOSIS (2163)•
RAT LIVER, MITOCHONDRIA, E.COLI, AEROBIC OXIDATION (5452)
REDUCTASE, METYRAPONE, MICROSOME, LIVER (4839)•
REGULATION, LIVER, CARCINOGENIC COMPOUNDS, RAT (6079)
REGULATION, LIVER, RAT, GLUCOCORTICOID (1591)
REGULATORY MECHANISM, INTESTINE, EPITHELIAL CELLS, CYCLOHEXAMIDE, ACTINOMYCIN D (4692)•
RELEASE, LIVER DISEASES, DIAGNOSIS (7550)
RELEASE, MAMMARY GLAND, MUSCLE, LIVER (3844)
RENNIN, LOCALIZATION, STOMACH, CALF, IMMUNOFLUORESCENCE (8507)•
RHODANESE, LIVER, ISOLATION (3079)
RIBONUCLEASE, INHIBITOR, STABILITY, LIVER (0886)
RIBONUCLEASE, LIVER RIBOSOME (7179)
RIBONUCLEASE, PANCREAS, PROTEIN (4750)
RIBONUCLEASE, PRIMARY STRUCTURE, DISULFIDE BOND, PANCREAS, PIG (2316)
RIBONUCLEIC ACID POLYMERASE, INHIBITION, TOXIN, LIVER, NUCLEI, RAT (2305)
RIBONUCLEOTIDE REDUCTASE, HEPATOMA, GROWTH RATE (8636)•
RNA POLYMERASE, LIVER NUCLEI, ADRENALECTOMY, ALPHA-IRRADIATION (6458)

RNA POLYMERASE, LIVER NUCLEI, ANTHRALINE, RAT (0142)
RNA POLYMERASE, RIFAMPICIN, LIVER MITOCHONDRIA, RAT (7939)
RNA POLYMERASE ASSAY, LIVER NUCLEI, X-AMANITIN (6317)
ROLE, CONGENITAL HYPERBILIRUBINEMIA (9060)
SECRETION, COLON, NUTRITION (4884)•
SECRETION, EXOCRINE PANCREAS, GLUCAGON, GLUCOSE (5552)•
SECRETION, PANCREAS, PERFUSION, DUODENUM (6409)•
SECRETION, PANCREAS, TRYPSINOGEN, CHYMOTRYPSINOGEN (2276)•
SERINE DEHYDRATASE, HOMOSERINE DEHYDRATASE, CYSTINE DESULPHYDRASE, LIVER (7189)
SERINE PROTEINASE, ELASTASE HOMOLOGY (2361)•
SERUM, CHANGES, MORPHINE, LIVER DISEASES (4391)
SERUM, LIVER (4085)
SERUM ALKALINE PHOSPHATASE, URINARY HYDROXYLASE, ISOENZYMES, LIVER DISEASE, BONE DISEASE (3260)•
SERUM CHOLINESTERASE, INFANTILE HEPATITIS (8359)
SERUM CHOLINESTERASE, LIVER DISEASE, DIAGNOSIS (4062)
SERUM GUANASE, SERUM ALANINE AMINO TRANSFERASE, SERUM ASPARTATE AMINO TRANSFERASE (6859)•
SERUM PROTEOLYTIC ACTIVITY, HEPATOBILIARY DISEASE, ALPHA2-MACROGLOBULIN (7551)
SERUM TRANSAMINASE, CIRRHOSIS, INFANTILE (2901)
SERUM TRANSAMINASE, CONVALESCENCE, VIRAL HEPATITIS, CHILDREN (9135)
SERUM TRANSAMINASE, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE, MARASMUS, KWASHIORKOR, MARASMIC KWASHIORKOR (6966)
SERUM TRANSAMINASE, LIVER, CHOLECYSTOCHOLANGIOGRAPHY, HEPATITIS (6869)
SERUM TRANSAMINASE, LIVER, ISONIAZID, TUBERCULOSIS, (1358)
17-HYDORXYSTEROID NAD(P) OXIDOREDUCTASE, LIVER CYTOPLASM (7820)
SGOT, ACUTE CHOLECYSTITIS, COMMON DUCT STONES, JAUNDICE (7651)•
SGOT, LACTATE DEHYDROGENASE, BILIARY OBSTRUCTION (8397)•
SGOT, SGPT, ACUTE HEPATITIS, CAFFEINE, THEOPHYLLINE, HEPATOTOXICITY (5821)
SGOT, SGPT, LIVER, BILIARY TRACT, PANCREAS (0663)
SGOT, SGTP, NORMAL, HISTOLOGICAL CORRELATIONS (6347)
SGOT, SGPT, RESECTION (7180)
SGPT, ACUTE VIRAL HEPATITIS (7614)
6-PHOSPHOGLUCONATE DEHYDROGENASE, PURIFICATION, PROPERTIES, SHEEP LIVER (1604)
16-ALPHA-GLUCURONYLTRANSFERASE, LIVER CYTOSOL, PROPERTIES (7783)•
SMALL INTESTINE, INHIBITION, ANTIBIOTIC, AMINOPTERIN (2807)•
SMALL INTESTINE, LACTIC ACID DEHYDROGENASE, HEXOKINASE, GLUCOSE EFFECT (2470)•
SMALL INTESTINE, MUCOSA, CHILDREN (3852)
SMALL INTESTINE, RETINAL, RETINOIC ACID (1783)•
SOMAN-INDUCED BIOSYNTHESIS, LIVER, ETHIONINE (4450)
STEAROYL-COA DESATURASE, LIVER MICROSOME (7040)
STEROID TRANSFERASE, STEROID GLUCOSIDE SYNTHESIS, LIVER, MICROSOME, RABBIT (2447)
STOMACH, MUCOSA, ACTIVITY, HISTOLOGY, B-GLUCURONIDASE (4129)•
STOMACH, SMALL INTESTINE, LARGE INTESTINE, NUCLEASES, CANCER (0014)•
STREPTOKINASE, ARTERIAL THROMBOSIS, THROMBOCYTOPENIA (3414)
STRUCTURE, ACTIVITY, X-CHYMOTRYPSIN (5468)
SUBCELLULAR, THREONINE DEFICIENCY (4694)•
SUBSTITUTION, CHRONIC PANCREATITIS, STEATORRHEA, STOOL EXAMINATION (0518)
SUCCINATE CYTOCHROME C REDUCTASE COMPLEX, MITOCHONDRIA, FREEZING DAMAGE, LIVER, MOUSE (2312)
SUCCINATE DEHYDROGENASE, ACID PHOSPHATASE, SECRETION, GASTRIC MUCOSA FREEZING, PH INDICATOR (1608)
SUCCINATE DEHYDROGENASE ACTIVATION, HYPOBARIC EXPOSURE, LIVER MITOCHONDRIA, RAT (0133)
SUGAR DEHYDROGENASES, LIVER, CHROMATOGRAPHY, ELECTROPHORESIS (6324)
SUGAR INTOLERANCE, SMALL INTESTINE, ELECTRON MICROSCOPY (1785)•
SULFATASE, PLACENTA, LIVER, SMALL INTESTINE, FETUS, MAN (1730)
SUPPRESSION, PYRUVATE CARBOXYLASE, GLUCOSE, LIVER, RAT (4745)
SYNTHETASE, BIOCHEMISTRY, LIVER (1725)
SYNTHETASE, LIVER, FATTY ACID, LIGHT ABSORPTION (1780)
SYNTHETASE, PANCREAS, TRYPTOPHANYL-TRNA, SPECTROFLUOROMETRY, PROTEIN CHROMOPHORES, TRYPTAMINE (4738)
TAPEWORM, METABOLISM (3784)
THIAMIN PYROPHOSPHAKINASE, TRANSKETOLASE, PANCREAS, THIAMIN ABSORPTION, PHOSPHORYLATION, INTESTINE, RAT (5143)
3'-PHOSPHOADENYLYLSULFATE STEROID SULFOTRANSFERASE, LIVER, MAN (8532)
THYMIDINE KINASE, LIVER, C. PERFRINGENS (3846)
TPN-LINKED, DIET EFFECT, PHENOBARBITAL, TISSUE PROTEIN, LIVER, RAT (0130)
TRANSAMINASE, ACUTE VIRAL HEPATITIS, LIVER FUNCTION, ACETYLATION RATE (6043)
TRANSAMINASE, LACTIC DEHYDROGENASE, GLUTAMIC-OXALOACETATE, GLUTAMIC-PYRUVATE, HEART, LIVER, SKELETAL MUSCLE, KIDNEY, PANCREAS (5662)

- TRANSAMINASE, LIVER, AGE, CHICKEN, GUINEA PIG (6462)
- TRANSAMINASE, LIVER, RIFAMPICIN (9090)
- TRANSAMINASE, LIVER DISEASE, EXERCISE, CHRONIC HEPATITIS, SUBSIDING HEPATITIS, CIRRHOSIS, LIVER CELL PERMEABILITY (4937)
- TRANSAMINASE, LIVER NECROSIS, VIRAL HEPATITIS (9126)
- TRANSAMINASE, SERUM, BLOOD DONORS, HEPATITIS (0116)
- TRANSGLUTAMINASE, INACTIVATION, LIVER TETRATHIONATE (2300)
- TRANSKETOLASE ACTIVITY, LIVER, SOUND EFFECT (7963)
- TRANSPORT, CALCIUM, INTESTINE (3118)
- TRNA METHYLASES, NUCLEOTIDE, LIVER, RAT (6341)
- TRYPSIN, CHYMOTRYPSIN, SECRETION, INTESTINAL GLANDULAR CELLS, ANNELID (5634)
- TRYPSIN, PANCREATITIS, SERUM, PROTEIN (5977)
- TRYPTOPHAN OXYGENASE, FLAVIN, LIVER, RAT (5596)
- TRYPTOPHAN PYRROLASE, ACTIVITY, LIVER, NICOTINE (5466)
- TRYPTOPHAN PYRROLASE, HEPATIC INJURY, ETHIONINE, CORTISONE, ENZYME ACTIVITY (1406)
- TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, MORRIS HEPATOMA, HISTONE (7537)•
- TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, QUINOLINIC ACID, RAT, LIVER (7938)
- 2, 4-DINITROPHENOL-ACTIVATED ADENOSINE TRIPHOSPHATASE, MITOCHONDRIA, LIVER, DEXTRON SULFATE (5573)•
- TYROSINE, METABOLISM, LIVER, RAT (1737)
- TYROSINE ALPHA-KETOGLUTARATE TRANSAMINASE, KETONE BODIES (8664)
- TYROSINE AMINOTRANSFERASE, ALPHA-KETO ACID, LIVER, EMBRYO (5463)
- TYROSINE AMINOTRANSFERASE, DEGRADATION, SYNTHESIS (0097)•
- TYROSINE AMINOTRANSFERASE, HYDROCORTISONE INDUCTION, HISTONES, PERFUSED LIVER (7936)
- TYROSINE AMINOTRANSFERASE, INDUCTION, HEPATOMA, GLUCOCORTICOID BINDING, CORTISOL, HEXAMETHASONE (5170)•
- TYROSINE AMINOTRANSFERASE, LIVER, FRACTIONATION (1577)•
- TYROSINE AMINOTRANSFERASE, NUCLEOTIDE, LIVER (5562)•
- TYROSINE AMINOTRANSFERASE INDUCTION, HEPATOMA (7900)•
- TYROSINE TRANSAMINASE, HYDROCORTISONE, IMMUNOCHEMISTRY, LIVER, RAT (3076)
- TYROSINE TRANSAMINASE, LIVER, METABOLISM (7121)•
- TYROSINE TRANSAMINASE, NOREPINEPHRINE, RAT (5591)•
- UDP-GLUCURONYL TRANSFERASE, BETA-GLUCURONIDASE, PHENOBARBITAL, CHOLESTASIS (8631)•
- XANTHINE DEHYDROGENASE, LIVER, AMINO ACID SUBSTRATE, KINETICS (1610)
- XANTHINE DEHYDROGENASE, LIVER, KIDNEY, STARVATION (8625)•
- XANTHINE DEHYDROGENASE, SYNTHESIS, DEGRADATION, LIVER, DEVELOPMENT (0892)
- XANTHINE OXIDASE, HEMOGLOBIN IRON ABSORPTION, HEME-SPLITTING REACTION, INTESTINE, DOG (3112)
- XANTHINE OXIDASE, LIVER, DITHIOERYTHRITOL (6466)
- XANTHINE OXIDASE, LIVER, NEONATE (3973)
- XANTHINE OXIDASE, LIVER, RAT, ISATIN (1732)
- UREACYCLE, ANTIBIOTICS, RAT LIVER (1760)

EOSINOPHILIA
- INFILTRATION, GASTROINTESTINAL TRACT (1065)

EPIDEMIOLOGY
- ACUTE VIRAL HEPATITIS, ANTIGEN (6099)
- ACUTE VIRAL HEPATITIS, CHRONIC (6104)
- ACUTE VIRAL HEPATITIS, ETIOLOGY (6089)
- ANORECTAL BLENORRHAGIA, NOSOLOGY, ETIOLOGY (8983)
- ANORECTAL, VENEREAL DISEASE, PROCTOLOGY, DETECTION (8982)
- ASCARIASIS, SOIL INFECTION, CHILDREN (7768)
- BILHARZIASIS, METEORISM (7008)
- BILHARZIASIS, SALMONELLA, SOUTH AFRICA (6277)
- CANCER, GASTROINTESTINAL TRACT (4624)
- CHOLERA, GASTROINTESTINAL SYMPTOMS, FAMILY CONTACTS (4568)•
- CHOLERA CARRIER (7697)
- CHRONIC PANCREATITIS, ETIOLOGY, NUTRITION, ALCOHOL (9020)
- CHRONIC PANCREATITIS, PATHOGENESIS, ETIOLOGY (9023)
- COLI ENTERITIS, INFANTS, STOOLS, RESISTANCE TYPE (6164)
- COLI ENTERITIS, NEONATE (7730)
- DIARRHEA, DYSENTERY, GASTRITIS, MEXICO, ENTERITIS (2742)
- DYSENTERY, INFANTS (7693)
- DYSENTERY, U.S.S.R. (8454)
- ENDEMIC TYPHOID FEVER, RAILWAY POPULATION, AJMER (3761)
- ENTEROCOLITIS, CLINICAL CHARACTERISTICS, SANITATION, CHILDREN (0689)
- FLY, DYSENTERY, EPIDEMIC HEPATITIS (3005)
- GASTRODUODENAL ULCER, DETECTION, YOUNG ADULTS (8895)
- GASTROENTERITIS, DIARRHEA (2605)
- GASTROENTERITIS, INFANCY (2221)
- GIARDIASIS, DIAGNOSIS, TREATMENT (6261)
- HEMORRHOID, RECTUM, PREGNANCY (5102)
- HEPATITIS, ADOLESCENT (5262)
- HEPATOMEGALY, CLINICAL PATTERN, INDIAN CHILDREN (1349)•
- HOMOLOGOUS SERUM HEPATITIS, INOCULATION, TRANSFUSION (2872)

  - HOOKWORM, ANEMIA, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
  - INTESTINE, SCHISTOSOMIASIS (2256)
  - LIVER CARCINOMA, PATHOLOGY, ETIOLOGY REGIONAL DISTRIBUTION, CIRRHOSIS (4376)
  - LIVER DISEASE, GEOGRAPHY (0549)
  - PARATYPHOID FEVER, CARRIERS, SCHLESWIG-HOLSTEIN (9247)
  - SALMONELLA GASTROENTERITIS (6249)
  - SALMOLELLA THOMPSON, POULTRY, INFECTIOUS RESERVOIR (9245)
  - SALMONELLOSIS, TYPHOID FEVER, FOOD POISONING (6942)
  - SERUM HEPATITIS, INTRAVENOUS METHAMPHETAMINE ABUSE (8360)
  - SERUM HEPATITIS, VIENNA (2883)
  - SHIGELLA, DYSENTERY, NEW ZEALAND (6274)
  - TAENIARHYNCHUS SAGINATUS, KARL MARX CITY (9292)
  - TAPEWORM, CYSTICERCOSIS, PARASITOLOGY (3019)
  - TRANSFUSION, VIRAL HEPATITIS, SERUM PROTEIN FRACTION (2877)
  - TYPHOID, PARATYPHOID, SALMONELLA, ELIMINATION (6159)
  - ULCERATIVE COLITIS, REGIONAL ENTERITIS, INTERVIEW, STRESS FACTORS(3507)*
  - VIBRIO PARAHAEMOLYTICUS, ANTIGENIC SCHEMA (7699)
  - VIRAL HEPATITIS, CIRRHOSIS, HYPERGAMMAGLOBULINEMIA, BSP, TRANSAMINASES, MACRONODULAR LIVER (6119)
  - VIRAL HEPATITIS, PARENTERAL INFECTION (7601)
  - VIRAL HEPATITIS, PREVENTION (4493)
  - VIRAL HEPATITIS, RELAPSE, JAUNDICE (4489)
  - VIRAL HEPATITIS, SYMPTOMATOLOGY, CHILDREN (9137)
  - VIRUS, INFECTIOUS HEPATITIS, BLOOD DONOR (3631)
  - VIRUS, RURAL FAMILIES, DOMESTIC ANIMALS (6176)
- EPIMERISATION
  - ALCOHOL, C-19 STEROID ALLYLIC, LIVER RAT (1739)
- EPINEPHRINE
  - ADENYL CYCLASE, GLUCAGON, INTERACTION (6428)*
  - ADRENERGIC RECEPTOR, PROPRANOLOL, TYROSINE AMINOTRANSFERASE (6435)*
  - DUODENUM ASPIRATES, SECRETIN (1092)
  - LIVER, HEPATIC ARTERY, OXYGEN CONSUMPTION (1799)
  - RESPONSE, SODIUM FLUORIDE, LIVER, RAT (3181)
  - STOMACH, MUSCLE, LAYERS, MUCOSA, QUATERON ACTION, NOREPINEPHRINE (0073)
  - STOMACH, NEUROGENOUS DYSTROPHY, DOPA, RESERPINE, ULCERATION (0329)
- EPIPHYSECTOMY
  - CANCER, HEPATOCARCINOGENESIS, CHEMICAL, RAT (0152)
- EPITHELIUM
  - BILE DUCT, ABNORMAL, CLINICAL HEPATITIS (3601)
  - CELLS, ISOLATION, INTESTINAL MUCOSA (3091)
  - CELLS, RADIOSENSITIVITY, INTESTINE (3840)
  - COLON, PROLIFERATION KINETICS, CRYPTS (8510)*
  - DIGESTIVE TRACT, ULTRASTRUCTURAL AND HISTOCHEMICAL STUDY, PHORONIS (3055)
  - DUODENAL, GAMMA IRRADIATION, DNA SYNTHESIS, MITOSIS (7813)
  - ESOPHAGEAL, ACANTHOSIS, TUNICA PROPRIA (6593)
  - ESOPHAGUS, ELECTRON MICROSCOPY, MOUSE (1609)
  - ESOPHAGUS, STRICTURE (3312)*
  - GLANDULAR, ANAL GLANDS, RABBIT (6344)
  - HETEROTOPIA, ESOPHAGUS, HISTOLOGY (4123)
  - INTESTINAL, ALYTES, HISTOGENETICS (1168)
  - INTESTINAL, DEGENERATION, ALYTES, HISTOGENETICS (1167)
  - INTESTINAL, MICROVILLUS, MOLECULAR STRUCTURE (2269)
  - INTESTINAL, QUANTITATIVE DESCRIPTION (7778)*
  - INTESTINE, PERMEABILITY, TORTOISE (6359)
  - JEJUNAL, TRANSPORT RATE, RAT (0038)*
  - MITOTIC CYCLE, ESOPHAGUS, HYDROCORTISONE (7807)
  - RUMEN, MORPHOLOGY, SODIUM, OVINE (6334)
  - ULTRASTRUCTURE, GOBLET CELLS, SMALL INTESTINE (1566)*
- EQUILIBRIUM CONSTANT
  - LIVER, ENZYME STUDIES, BINDING SITES (1775)
- EROSION
  - GASTRODUODENAL ARTERY, PSEUDOCYST, PANCREAS (0503)
  - HEMORRHAGIC, ACUTE SYMMETRIC ULCERATION, ANTRAL PORTION OF STOMACH (1874)
- ERYTHROPOIESIS
  - LIVER, GROWTH, PROLIFERATION KINETICS (7958)
  - SUPPRESSION, ALCOHOL, FOLIC ACID (3547)*
- ERYTHROPOIETIN
  - LIVER, METABOLISM (2862)
- ESOPHAGECTOMY
  - INSTRUMENTAL PERFORATION, MAN (0250)
- ESOPHAGITIS
  - ACHALASIA, SURGERY, ESOPHAGUS (2578)
  - ACUTE, HISTOLOGY, RADIOLOGY, CAT (8079)
  - CANDIDA, MALIGNANT, CHILDREN (6935)*
  - CAUSTIC (4107)
  - CELLULAR INFILTRATION, TUNICA PROPRIA, EROSIVE, SUPERFICIAL (6593)
  - CORROSIVE, THERAPY, STEROIDS, ANTIBIOTICS (0255)
  - CROHN'S DISEASE, REGIONAL ENTERITIS (6604)
  - DIAGNOSIS (2565)
  - DIAGNOSIS, SURGERY (1009)
  - EROSIVE, ESOPHAGEAL HIATAL HERNIA (0983)

ESOPHAGEAL MOTILITY, ENDOSCOPY, BIOPSY (8022)
MORPHOLOGY, ETIOLOGY, HIATUS HERNIA, DIAGNOSIS (8064)
NECROTIC, BRACHYESOPHAGUS, PULMONARY INFLAMMATION, TRAUMA (0247)
PEPTIC (4102)
PEPTIC, FUNDOPLICATION, ENDOSCOPY, CLINICAL DATA (8798)
PEPTIC, REFLUX, SPHINCTER, STOMACH (4116)
PEPTIC, TREATMENT (1132)
PEPTIC, ULCER, STENOSIS, OPERATION, CANCER, SECRETION, DIAGNOSIS (2555)
REFLUX, ACID PERFUSION TEST, PRESSURE, MOTILITY (6570)
REFLUX, CANCER, SURGERY, ESOPHAGO-GASTRO-ANASTOMOSIS (2552)
REFLUX, DIAGNOSIS, ACID PERFUSION TEST, STENOSIS, ULCER (2516)
REFLUX, HIATUS HERNIA, SURGERY (2568)
REFLUX, SURGERY (2571)
REFLUX, THERAPY (8059)
STENOSING (4097)
TOTAL BYPASS SURGERY, REVERSED GASTRIC TUBE OPERATION (8082)

ESOPHAGOPLASTICS
REVASCULARIZATION, GRAFT, COLON (1016)

ESOPHAGOPLASTY
LARGE INTESTINE, BLOOD PROTEINS, CANCER, CICATRICAL STENOSIS (0237)
LARGE INTESTINE, TRANSPLANT, PERISTALSIS (2746)
PERICARDIUM, ESOPHAGEAL STENOSIS (8078)
THERMOMETRY, BLOOD SUPPLY, ASSESSMENT, GRAFT (0240)

ESOPHAGOSCOPY
EMERGENCY, HEMORRHAGE, STOMACH (4047)
ESOPHAGEAL RADIOLOGY, DIAGNOSIS, GASTROSCOPY (1802)*
RUPTURE, RADIOLOGY, MUCOSAL STRIPE SIGN (1014)
TECHNIQUE, INDICATIONS, CONTRAINDICATIONS (0956)

ESOPHAGOSTOMY
CERVICAL, TUBE FEEDING (0988)

ESOPHAGUS
ACHALASIA, AMYLOIDOSIS, SMALL-INTESTINAL ENLARGEMENT, BANTU (0254)
ACHALASIA, DIAGNOSIS, DIFFERENTIAL (0252)
ACHALASIA, DYSPHAGIA, CARDIAL TUBE, CARDIOMYOTOMY, DILATATION (5760)
ACHALASIA, ESOPHAGO-ESOPHAGEAL FISTULA (2562)
ACHALASIA, MANAGEMENT (5751)
ACHALASIA, NEUROMUSCULAR MECHANISM, HISTOLOGY, RADIOLOGY (8068)
ACHALASIA, SURGERY (3333)
ACHALASIA, SURGERY, ESOPHAGITIS (2578)
ACHALASIA, SURGERY, PH, REFLUX (5758)
ACHALASIA, SURGERY, RADIOGRAPHY (8822)
ACHALASIA, THERAPY, EVALUATION (8823)
ACID REFLUX, PH TELEMETRY, GASTRIC SECRETION (0938)*
ACUTE CORROSIVE INJURY, ANTIBIOTICS, CORTICOSTEROIDS, TREATMENT (0239)
ACUTE PERFORATION, GASTRIC BUTTRESS, DOG (6585)
ALLOPLASTICS, VASCULARIZATION (1017)
ANASTOMOSIS (6592)
ANASTOMOSIS, TOTAL GASTRECTOMY, TECHNIQUE (8113)
ANATOMY, NORMAL, DISEASE (1854)
ARTIFICIAL, SURGERY, PERFORATION, STENOSIS, CARCINOMA, CARDIA (4965)
ATRESIA (0248)
ATRESIA, ANASTOMOSIS (6596), (6597)
ATRESIA, ASSOCIATED MALFORMATIONS, SURGERY, PROGNOSIS (8803)
ATRESIA, COLON TRANSPLANT, ESOPHAGEAL REPAIR (8811)
ATRESIA, END-TO-END ANASTOMOSIS, ELONGATION OF SHORT SEGMENT (8821)
ATRESIA, FISTULA, CATHETERIZATION, RADIOLOGY, BARIUM OXIDE, LIPIODOL, ANASTOMOSIS (4956)
ATRESIA, FISTULA, SURGERY (4971)
ATRESIA, MEMBRANOUS STENOSIS, THERAPY, ANATOMOPATHOLOGY (8801)
ATRESIA, PEPTIC STENOSIS, SURGERY, INFANTS, CHILDREN (8793)
ATRESIA, SURGERY, ANESTHESIA (4120)
ATRESIA, SURGERY, MORTALITY (8802)
ATRESIA, SURGERY, NEONATE (5749)
ATRESIA, SURGERY, STRICTURE (2564)
ATRESIA, TUMOR, FISTULA (1835)
ATRESIA, VARICES, COLON REPLACEMENT, CHILDREN (8809)
AUTOPLASTIC, PEPTIC ULCER (7318)
BARRETT'S ULCER, MUCOSAL ACID SECRETION, HISTAMINE RESPONSE (0260)
BENIGN NEOPLASMS (7314)
BENIGN TUMOR, MESODERMAL, LIOMYOMA, SURGERY (5754)
BENIGN TUMOR, RADIOLOGY, HISTOPATHOLOGY (8824)
BLEEDING VARICES, LIGATURE, RESECTION (2570)
BLEEDING VARICES, MANAGEMENT (6582)
BLEEDING VARICES, PORTACAVAL SHUNT, CIRRHOSIS (6113)*
BLEEDING VARICES, SPLENECTOMY, CORONARY VEIN LIGATION (3327)
BRACHYESOPHAGUS, TRAUMA, NECROTIC ESOPHAGITIS, PULMONARY INFLAMMATION (0247)
CANCER, ALCOHOLISM, CIRRHOSIS (4122)
CANCER, BLEOMYCIN (6603)
CANCER, CARDIA, RESECTION, RADIOTHERAPY (5756)
CANCER, CICATRIX (1830)
CANCER, CLINICAL COURSE, DIAGNOSIS, TREATMENT (1843)
CANCER, COBALT TELECURIETHERAPY (8804)
CANCER, DIAGNOSIS (0230)
CANCER, DIAGNOSIS, RADIOISOTOPE (7233)
CANCER, DRUG EFFECT, RADIOLOGY, SURGERY (2853)
CANCER, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
CANCER, HIATAL HERNIA, DIAPHRAGM (0997)
CANCER, INCIDENCE, SYMPTOMATOLOGY (2777)

CANCER, MEDIASTINAL TUMOR, EPITHELIOMA, RADIOLOGY (4962)
CANCER, RADIOTHERAPY, SURVIVAL RATE (8800)
CANCER, SOUTTAR TUBE, SURGERY (0998)
CANCER, STENOSIS, CICATRIX, MALIGNANT DEGENERATION (4747)
CANCER, SURGERY (4109)
CANCER, SURGERY, ANESTHESIA (7315)
CANCER, SURGERY, BRONCHOESOPHAGEAL INVESTIGATION, RADIOLOGY (2531)
CANCER, SURGERY, TREATMENT (1002)
CANCER, SURGICAL TECHNIQUES (1840)
CANDIDIASIS, RADIOLOGY (8073)
CARCINOMA, ACHALASIA OF CARDIA (3322)
CARCINOMA, AFTER GASTRIC SURGERY (3336)
CARCINOMA, BETEL CHEWING, CEYLON (6598)
CARCINOMA, CARDIOSPASM (1003)
CARCINOMA, CELESTIN TUBE, DYSPHAGIA PALLIATION, TRACHEO-ESOPHAGEAL FISTULA (0261)
CARCINOMA, EXCISION, SURGERY, DIAGNOSIS (0264)
CARCINOMA, HYPERTROPHIC, OSTEOARTHROPATHY (1013)
CARCINOMA, POST-GASTRIC SURGERY (4113)
CARCINOMA, RADIATION THERAPY (3315)
CARCINOMA, RADIATION THERAPY, ESOPHAGOGASTRECTOMY (8083)
CARCINOMA, RADIOTHERAPY, SPLIT-COURSE (1825)*
CARCINOMA, ROTATORY IRRADIATION, DEEP THERAPY, PERFORATION (6580)*
CARCINOMA, SURGERY (2561)
CARCINOMA, SURGERY, DYSPHAGIA (0992)
CARCINOMA, SURGICAL PROBLEMS (2566)
CARCINOMA, X-RAY THERAPY (5746)
CARDIA, ACHALASIA, SURGERY (4972)
CARDIA, TUMOR, ENDOSCOPY, ESOFIBROSCOPE, BIOPSY, PSEUDO-TUMORS, MALIGNANCY (5663)
CARDIAL FUNCTION, RADIOLOGY, INFANTS (8728)
CARDIAL SPASM, GASTRIC VAGOTOMY, ESOPHAGEAL ENLARGEMENT (8858)
CAUSTIC BURNS, ANTIBIOTIC, STEROID, THERAPY (1826)*
CAUSTIC STENOSIS, CICATRIX, CANCER (0246)
CELL PROLIFERATION, THYMIDINE (3812)
CERVICAL, RECONSTRUCTION (7305)
CERVICAL, RECONSTRUCTION, GASTRIC ANASTOMOSIS (7304)
CHEMICAL BURNS, STOMACH, SECRETION, FLORA, METABOLISM (0453)
CHRONIC GRANULOMATOUS DISEASE (2760)
CLOSURE FORCE, MANOMETRY, INFUSED CATHETER, HUMAN (5507)*
COLON INTERPOSITION, SUBSTERNAL, COMPLICATIONS (2704)
COLON TRANSPLANT, CORROSIVE STRICTURE, ESOPHAGOCOLOGASTROSTOMY (2546)*
COLUMNAR EPITHELIUM, MALIGNANCY, ADENOCARCINOMA (8067)
CONGENITAL STENOSIS, ANATOMOPATHOLOGY, THERAPY (8810)
CONGENITAL STENOSIS, FISTULA, INFANTS (8796)
CONGENITAL STENOSIS, PERICARDIUM, ESOPHAGOPLASTY (8078)
CONSTRICTION, LIGATION, PYLORUS (4191)
CORROSION, TREATMENT, MAN (1841), (184
CORROSIVE ESOPHAGITIS, THERAPY, STEROIDS, ANTIBIOTICS (0255)
CYANOSIS, DYSPNEA, ATRESIA, CHILDREN, EMERGENCY (5345)
CYTO-DIAGNOSIS, MALIGNANCY, SPECIMEN COLLECTION (5665)
DIAGNOSIS, ATRESIA (1829)
DIAGNOSTIC PROCEDURES, TECHNIQUES IN INTUBATION, STOMACH, BOWEL OBSTRUCTION (1804)*
DISORDER, LUNG RESECTION, MANOMETRY (5752)
DISTAL, OCCLUSION (4096)
DIVERTICULA, ESOPHAGOBRONCHIAL FISTULA SURGERY (6590)
DIVERTICULA, INFANTS, CHILDREN (6597)
DIVERTICULA, MULTIPLE, SPASM, STRICTURE (3326)
DIVERTICULA, RADIOLOGIC DIAGNOSIS (1000)
DIVERTICULUM, RADIOLOGY (1831), (1836), (1837)
DIVERTICULUM, SQUAMOUS CELL CARCINOMA, DEVELOPMENT (0265)
DIVERTICULUM, SURGERY, MORPHOLOGY (8814)
DYSPHAGIA, ESOPHAGEAL DILATATION, REFLUX (6594)
DYSPHAGIA DIAGNOSIS (3323)
DYSPHAGIA LUSORIA, ESOPHAGOSCOPY (8058)
DYSRHYTHMIAS, SURGERY (1845)
ECTOPIC GASTRIC MUCOSA, HISTOGENESIS, COMPLICATIONS (2575)
ELECTRICAL ACTIVITY, GASTROESOPHAGEAL SPHINCTER, INTRALUMINAL PRESSURE, DEGLUTITION (4789)*
ENDOSCOPY, VALIUM, I.V. (2541)
ENDOTHESES, DESIGN (0257)
EPIDERMOID CARCINOMA, SURGERY (4104)
EPIPHRENIC DIVERTICULUM, LEIOMYOMA (1846)
EPITHELIAL HETEROTOPIA (4123)
EPITHELIUM, ELECTRON MICROSCOPY MOUSE (1609)
EPITHELIUM, MITOTIC CYCLE, HYDROCORTISONE (7807)
EROSION, HEMORRHAGE, STOMACH (6635)
ESOPHAGEAL-GASTRIC HERNIA, SURGERY, MANOMETRY (5718)
ESOPHAGEAL RING, DYSPHAGIA (8074)
ESOPHAGEAL RING, ETIOLOGY, RADIOGRAPH (6606)
ESOPHAGITIS (4107)
ESOPHAGITIS, ACUTE, MODEL (8055)*
ESOPHAGITIS, DIAGNOSIS (2565)
ESOPHAGITIS, GASTRIC INTUBATION, HIATAL HERNIA, PAIN, STENOSIS, DYSPHAGIA (5737)
ESOPHAGITIS, NON-PEPTIC, STENOSIS(1844
ESOPHAGITIS, PEPTIC, STENOSIS, HIATUS HERNIA, INTESTINAL, GRAFT (8066)

ESOPHAGOBRONCHIAL FISTULA, PULMONARY SUPPURATION, DIAGNOSIS (5762)
ESOPHAGO-CARDIAC FISTULA, EMBOLIC MENINGO-ENCEPHALITIS (7302)
ESOPHAGOCOLOPLASTY, LARGE INTESTINE (4305)
ESOPHAGO-ILEO-COLONPLASTY, CICATRICIAL STENOSIS (3747)
ESOPHAGOPLASTY, ILEOCECAL VALVE, ESOPHAGEAL PROSTHESIS, PYLORIC SPASMS (8057)
ESOPHAGOPLASTY, SMALL INTESTINE TRANSPLANT, CIRCULATION (7317)
ESOPHAGOPLASTY, THAL'S PROCEDURE, GASTRIC FUNDUS GRAFT, CARDIOESOPHAGEAL SPHINCTER (8084)
ESOPHAGOSCOPY (6529)
ESOPHAGOSCOPY, FIBERESOPHAGOSCOPE (4927)
ESOPHAGOSCOPY, RADIOLOGY, BIOPSY, HYPERPLAGIC ADENOMATOSIS, REFLUX, DYSPEPSIA (0242)
ESOPHAGOSTOMY, TUBE FEEDING (0988)
ESOPHAGO-TRACHEAL FISTULA, CONGENITAL, ADULT (5748)
FIBROSCOPE, IMPACTION (0989)
FISTULA, ANATOMOPATHOLOGY, DIAGNOSIS (8806)
FISTULA, CANCER (1837)
FISTULA, ESOPHAGOBRONCHIAL, BENIGN, SURGERY (0258)
FISTULA, PNEUMONECTOMY, REPAIR (7312)
FISTULA, STOMACH (3333)
FISTULA, SURGERY, POSTPNEUMONECTOMY (6991)
FOREIGN BODIES, DIAGNOSIS, THERAPY (8816)
FOREIGN BODIES, LESIONS, THERAPY, CHILDREN (8813)
FOREIGN BODY, PERFORATION, SURGICAL TREATMENT (2576)
FOREIGN CYST, SPINAL MALFORMATION (2569)
FUNCTIONAL DISORDERS (3320)
FUNDOPLICATIO, HIATAL HERNIA, NISSEN'S TECHNIQUE, ULCER, PYLOROPLASTY (5739)
GASTRIC JUNCTION, CARCINOMA, ESOPHAGOGASTROSTOMY (7360)
GASTRIC REFLUX, FIXATION, ABDOMINAL CAVITY, VALVE EFFECT, PROCEDURE (0262)
GASTRIN, HISTAMINE, ENZYME (3146)
GASTRODUODENAL DISEASES, GASTROPULGITE THERAPY (8072)
GASTROESOPHAGEAL JUNCTION, ANATOMY, DISEASE (1853)
GASTROESOPHAGEAL REFLUX, WATER TEST (0200)
GASTROESOPHAGEAL SPHINCTER, SURGERY, CRURAL MUSCLE, PHRENOESOPHAGEAL MEMBRANE (3883)*
GASTROSCOPY, STOMACH, COMPLICATION (5680)
GRANULOMATOUS, CHRONIC (7319)
HEARTBURN, REGURGITATION, GALL BLADDER DISEASE, CHOLECYSTECTOMY (1462)
HEMATOMA, INTRAMURAL (4110)
HEMORRHAGE (2982)
HEMORRHAGE, DIAGNOSIS, FIBEROPTIC ENDOSCOPY (0189)*
HEMORRHAGE, GASTROINTESTINAL, TREATMENT (0256)
HEMORRHAGE, STOMACH, ENDOSCOPY, RADIOLOGY (2514)
HEMORRHAGE, UPPER GASTROINTESTINAL TRACT, TREATMENT (0695)
HEMORRHAGE, VISCERAL REFRIGERATION (4585)
HERNIA, HIATUS, STOMACH (3335)
HERNIA, RETROSTERNAL, DIAPHRAGMATIC (0241)
HERNIA, TUBERCULOSIS (4106)
HIATAL HERNIA, ACHALASIA, DYSPHAGIA (2563)
HIATAL HERNIA, ANEMIA, ESOPHAGITIS, SURGERY (4091)*
HIATAL HERNIA, DIAGNOSIS, TREATMENT (5753), (7316)
HIATAL HERNIA, ESOPHAGITIS, EROSIVE (0983)
HIATAL HERNIA, ESOPHAGOGASTRIC PH, MANOMETRY (8081)
HIATAL HERNIA, GASTRIC REFLUX (1927)
HIATAL HERNIA, HILL SUTURE (5745)
HIATAL HERNIA, INFANTS, CHILDREN, CONGENITAL MALFORMATION, ANTISPASMOTICS, SURGERY (5738)
HIATAL HERNIA, PRESSURE, INFERIOR SPHINCTER (5649)*
HIATAL HERNIA, SURGERY (5747), (6584)
HIATAL HERNIA, SURGERY, ANATOMOPATHOLOGY (8799)
HIATUS HERNIA, STOMACH, COLON INVOLVEMENT (8080)
HIATUS HERNIA, SURGERY, ANTERIOR GASTROPLEXY (1947)
HOMOGRAFTS (4112)
IMPACTION, HIATAL HERNIA (2559)
INFILTRATING, CANCER (0245)
INTRAMURAL PERFORATION, RADIOLOGY (6587)
JEJUNUM, DUODENUM, GASTRECTOMY (1027)
JEJUNUM INTERPOSITION, PEPTIC ESOPHAGITIS, HIATAL HERNIA (7296)*
LAMINA PROPRIA, FENESTRATED CAPILLARIES, RABBIT, MOUSE (0706)
LARYNGOTRACHEAL CLEFT, CONGENITAL ANOMALY, SURGERY (3324)
LEIOMYOMA, SURGERY (5750)
LEIOMYOMATOUS HYPERPLASIA, DIFFUSE (4121)
LESION, DIAGNOSIS, GASTRECTOMY (7237)
LESION, DYSFUNCTION, PULMONARY DISEASE, TREATMENT, CHILDREN (0263)
LESION, LYMPHOMA, LEUKEMIA (1839)
LESION, RADIOGRAPHY, LUNG DENSITY (6581)
LESION, RUPTURES, SPONTANEOUS (0236)
LESION, TRANSCATHETER BIOPSY, TUMOR (6536)
LIPOMA (0244)
LOWER, CYLINDRICAL METAPLASIA, PHYSIOPATHOLOGY, ANATOMOPATHOLOGY (8797)
LOWER RING, DYSPHAGIA, RADIOLOGY (7307)

LOWER RING, HIATAL HERNIA,, SURGERY (5741)
LYMPHOMA (4111)
MALIGNANT FISTULA, PERORAL ESOPHAGEAL PROSTEHSIS (8071)
MALIGNANT MELANOMA, CHILD (5743)
MALIGNANT STENOSIS, PROSTHESIS, GASTRIC CARCINOMA (8060)
MALIGNANT STRICTURE, PALLIATIVE INTUBATION (2572)
MALLORY-WEISS SYNDROME, GASTRIC MUCOSA, RUPTURE, COUGHING, DEFECATION, CHILD BIRTH (5740)
MANOMETRY, ACHALASIA, HIATAL HERNIA (8030)
MASSIVE HEMORRHAGE, POLYCYSTIC KIDNEY DISEASE, CONGENITAL HEPATIC FIBROSIS (0266)
MEGA-, CHILDREN, SYMPTOMOLOGY, BRONCHOPULMONARY CONDITIONS (0243)
MEGA-, IDIOPATHIC SURGERY, TREATMENT (0251)
MEGA-, SURGERY, HELLER'S TECHNIQUE, CHILDREN (8795)
MEGA-ESOPHAGUS, HELLER'S OPERATION, MALIGNANCY, MORTALITY RATE (9062)
MORPHOLOGY, DEVELOPMENT, EPITHELIAL STRATIFICATION, MITOSIS (0745)*
MOTILITY (3897), (7280)
MOTILITY, ALTERATION, DIABETES (2548)*
MOTILITY, ANASTOMOSIS, HEMORRHAGE (4964)
MOTILITY, ATROPHIC MYOTONIA (0046)
MOTILITY, DISTURBANCES (1849)
MOTILITY, HIATUS HERNIA, ANATOMOPATHOLOGY (8070)
MOTILITY, NERVOUS CONTROL, DOG (0043)*
MOTILITY, PHYSALAEMIN, POLYPEPTIDES, NORADRENALIN (0780)
MOTILITY, SCLEROSIS (4126)
MOTILITY, SPHINCTER, OPOSSUM (3123)*
MOTOR FUNCTION, WATER TEMPERATURE (2357)*
MUCOSA, BLOOD FLOW (7300)
MUSCULAR RESPONSE, D-TUBOCURARINE, ATROPINE (3317)
MUSCULAR WALL, PHRENO-ESOPHAGEAL MEMBRANE, ANATOMY (5462)
MUSCLE ACTIVITY, SWALLOWING, MAN (1658)
NEOPLASM, MOUSSEAU-BARBIN'S PROBE, PALLIATIVE THERAPY (2579)
NEUROLOGICAL LESION, ACHALASIA, CARDIA (8077)
NON-PEPTIC INFLAMATION, STENOSIS (1844)
OBLITERATION, HYPOPHARYNX, CORROSIVES, RECONSTRUCTION (7308)
OBSTRUCTION, CICATRIX, CHILDREN, SURGERY (5755)
OBSTRUCTION, STIFF-MAN SYNDROME (1850)
PEDUNCULATED HAMARTOMA, DIAGNOSIS (6586)
PEPTIC ESOPHAGITIS, GASTRODUODENAL ULCER, HYPERACIDITY, OXYFERRISCORBONE, ENDOSCOPY (4958)
PEPTIC ESOPHAGITIS, STENOSIS, DYSPHAGIA, EDER PUESTOW, DILATATION, HIATAL HERNIA (5736)
PEPTIC ESOPHAGITIS, STENOSIS, ESOPHAGEAL SPHINCTER, CARDIA, GASTRIC ASPIRATION (5735)
PEPTIC STENOSIS, CANCER, THORACOTOMY, CYTODIAGNOSIS, RADIOLOGY (5664)
PEPTIC STENOSIS, ETIOLOGY, PATHOLOGY (8805)
PEPTIC ULCER, PERFORATION, REFLUX (6605)
PEPTIC ULCERATION, CORROSIVE BURNS, HIATAL HERNIA (1009)
PERFORATION, ANESTHESIA, TRACHIAL INTUBATION, CERVICAL PAIN, EMPHYSEMA, ESOPHAGOSCOPY, RADIOGRAPHY, PLEURISY, SURGERY (4975)
PERFORATION, DILATATION, RUPTURE, ESOPHAGOSCOPY, MORTALITY (4955)
PERFORATION, ESOPHAGECTOMY, MAN (0250)
PERFORATION, GASTROCAMERA FIBERSCOPE (3328)
PERFORATION, GASTROTOMY (7310)
PERFORATION, HIATAL HERNIA, VAGOTOMY (1007)
PERFORATION, PHYSIOPATHOLOGY, CHILD (4119)
PERFORATION, RUPTURE, PATHOLOGY, THERAPY (6602)
PERFORATION, SPONTANEOUS (1855)
PERISTALTIC CONTRACTIONS, INTRALUMINAL PRESSURE MEASUREMENT, ESOPHAGOGASTRIC JUNCTION, MAN (8714)
PH, GASTRO-ESOPHAGEAL REFLUX, HIATAL HERNIA, HISTAMINE, PENTAGASTRIN, NOCTURNAL REFLUX (3313)*
PHARYNGOESOPHAGEAL FISTULA, CANCER, LARYNGECTOMY, PHARYNGOESOPHAGOSTOMA (2550)
PHARYNX, CARCINOMA (1008)
PLASTIC REPAIR, LARGE INTESTINE, BLOO PROTEINS, CANCER, CICATRICIAL STENOSIS (0237)
PNEUMATIC DILATION, DYSPHAGIA (5759)
PORTAL HYPERTENSION, CHILDREN, SHUNT OPERATION (6812)
POST VAGOTOMY DYSPHAGIA, RADIOLOGY, MANOMETRY, ESOPHAGOSCOPY (7295)*
PREOPERATIVE CARE, CANCER, CHEMICAL BURNS (0307)
PRESSURE, DIAGNOSTIC PROCEDURE, CARDIAC ARTIFACTS (8012)*
PRIMARY, MALIGNANT, MELANOMA (6579)*
PROLAPSE, MUCOSA, HYPERTROPHY, CARDIA, STOMACH, FAT, INFILTRATION (0312)
RADIOLOGY, DIAGNOSIS, MORPHOLOGY, MOTILITY, HIATUS HERNIA, REFLUX (1809)*
RADIOTHERAPY (4105)
RECONSTRUCTION, COLON INTERPOSITION (3329)
RECONSTRUCTION, GASTROINTESTINAL TUBES, HUMORAL FACTORS (4798)
RECONSTRUCTION, STOMACH, TUBE (5732)*
RECONSTRUCTIVE SURGERY, GASTRIC TUBE, CHILDREN (5734)*
RECURRENT HIATAL HERNIA, CLINICAL SYMPTOMS, RADIOLOGIC SYMPTOMS (2574
RECURRENT HIATAL HERNIA, TREATMENT (2573)

REFLUX, HISTOLOGY (2549)•
REFLUX ESOPHAGITIS, HIATUS HERNIA, SURGERY (2568)
REFLUX ESOPHAGITIS, SURGERY (2571)
REFLUX ESOPHAGITIS, SURGERY CARDIA INCOMPETENCE (7306)
REFLUX STRICTURE, INTERNAL RUPTURE, BELSEY HIATAL HERNIA REPAIR (3321)
REPAIR, COLON TRANSPLANT, POSTSURGICAL CARE (8826)
REPLACEMENT, GASTRIC MOBILIZATION (6599)
REPLACEMENT, LEFT COLON (7311)
REPLACEMENT, STOMACH, CARCINOMA (1849)
REPLACEMENT, SURGERY, MALIGNANT DISEASE (5757)
RETENTION CYST (5742)
RUPTURE, BOERHAAVE'S SYNDROME (4109)
RUPTURE, ESOPHAGOSCOPY, RADIOLOGY, MUCOSAL STRIPE SIGN (1014)
RUPTURE, PYLORUS, OBSTRUCTION (4970)
RUPTURE, SPONTANEOUS, ATRAUMATIC, SURGICAL THERAPY (1851)
RUPTURE, SURGERY, DIAGNOSIS (3332)
SCLERODERMA, DYSPHAGIA, RADIOLOGY, GASTRIC HYPERCHLORHYDRIA, APERISTALSIS (6243)
SEGMENTAL MYECTOMY, MORPHOLOGICAL AND FUNCTIONAL CONSEQUENCES, DOG (1664)
SHORT, CONGENITAL PARTIAL THORACIC STOMACH (8069)
SHORT, STRICTURE, SURGERY (2567)
SPASM (8076)
SPASM, DILATATION, SPHINCTER (5761)
SPASM, MOTILITY, GASTRIC CARCINOMA (5790)
SPHINCTER, GASTRIC REFLUX, ESOPHAGITIS (4116)
SPHINCTER, GASTRIN, GASTRIC ACIDITY (3890)•
SPHINCTER, PRESSURE, STRENGTH (2544)•
SPONTANEOUS RUPTURE (7313)
SPONTANEOUS RUPTURE, VOMITING, SURGERY (8065)
STENOSIS, BOUGIENAGE, RADIOLOGY (8825)
STENOSIS, CONTROL, INFANT, CHILD (4094)
STENOSIS, DYSPHAGIA, CHRONIC PANCREATITIS (9031)
STENOSIS, HYPERMOTILE, RADIOLOGY, SPASM, ACHALASIA (2554)
STENOSIS, STARVATION MANAGEMENT, CATHETERIZATION (8063)
STENOTIC, REFLUX-INDEPENDENT, PATHOGENESIS (0234)
STOMACH, BRUSHING CYTOLOGY, CANCER, DIAGNOSIS (5654)•
STOMACH, CARDIAC INFARCT, ANEURYSM, ARTERIOSCLEROSIS, EMOTIONAL FACTOR (4967)
STOMACH, COMBINED EFFORT-RUPTURE (8819)
STOMACH, MUCOSA, POTENTIAL DIFFERENCE (3889)•
STOMACH, REFLUX, PREVENTION, RESECTION, ESOPHAGUS (5733)•
STOMACH, REFLUX, SPHINCTER PRESSURE (2545)•
STOMACH, SURGERY, CANCER (4928)
STOMACH, VARICES, CIRRHOSIS, HEMORRHAGE (7639)
STRICTURE, COMPLICATIONS (0259)
STRICTURE, EPITHELIUM (3312)•
STRICTURE, HIATAL HERNIA, DYSPHAGIA (2558)
SUBSTITUTION, CARCINOMA, ACID BURNS (4204)
SURGERY, ATRESIA, FISTULA, TECHNIQUE, TEMPORARY GASTRIC PARTITION (2577)
SURGERY, CANCER (1001)
SURGERY, FISTULA, ESOPHAGECTOMY, MALIGNANCY (2547)•
SURGERY, HOMOGRAFT (P298)
SURGERY, MUCOSA (3316)
THORACIC, CANCER, OPERABILITY (3318)
THORACIC, CARCINOMA, LAPAROTOMY (1852)
THORACIC, INSTRUMENTAL PERFORATION, MAN (0250)
THORACIC, TRAUMATIC RUPTURE, DUODENUM, ABDOMEN (3729)
THORACIC SEGMENT, PROSTHESIS, DOG (8056)
TRACHEOESOPHAGEAL FISTULA, ATRESIA, SURGERY (6588)
TRACHEOESOPHAGEAL FISTULA, CHEST TRAUMA (5744)
TRACHEOESOPHAGEAL FISTULA, PEDIATRICS (1012)
TRANSIT, CHAGAS DISEASE, PANAMA (1856)
TRAUMATIC PSEUDODIVERTICULUM, NEONATE (4114)
TUBE, GASTRIC ACID (2560)
TUBERCULOSIS, RADIOLOGY (6600)
TUMOR, CICATRIX STENOSIS (4101)
TUMOR, CONGENITAL LESIONS, PERFORATION (8808)
TUMOR, DIFFERENTIAL DIAGNOSIS (2539)
TUMOR, GASTROSCOPY, HIATUS HERNIA, POLYP, STOMACH, DIVERTICULI (4957)
TUMOR, MULIER'S TEST, DIAGNOSIS (5721)
TUMOR, PSEUDO-TUMOR, ENDOSCOPY, CARDIAL REGION (4098)
TUMOR, SYMPATHOGONIOMA, ADULT (0995)
ULCER, ESOPHAGOSCOPY, ANESTHESIA, DIAGNOSIS (4953)
ULCER, HIATAL HERNIA, PREGNANCY VOMITIN (4100)
ULCER, PERFORATION (1833)
ULCER, RESECTION, STOMACH, COLOPLASTY (4103)
ULCERATION, COLUMNAR EPITHELIUM, BARRETT'S SYNDROME (7301)
ULCERATION, STRICTURE, ULCERATIVE COLITIS, ESOPHOGOSCOPY, DYSPHAGIA (0499)
VAGOTOMY, SURGERY (1834)
VARICES, BLEEDING, HEMODYNAMICS, SURGERY (1006)
VARICES, BLEEDING, SPLENOMEGALY, HEPATIC CIRRHOSIS (3656)
VARICES, CIRRHOSIS, MICROCARCINOMA, SURGERY, MORTALITY (4966)
VARICES, CIRRHOSIS, SURGERY (4519)
VARICES, DECOMPRESSION, HEMODYNAMICS, SPLENORENAL SHUNT, SURGERY (1005)
VARICES, GASTROINTESTINAL HEMORRHAGE, ULCER, ENDOSCOPY, CIRRHOSIS, HEMANGIOMA (5368)

- VARICES, HEMORRHAGE, CHILDREN, STOMACH RUPTURE, NEWBORN, LIVER CIRRHOSIS (6222)
- VARICES, HEMORRHAGE, CIRRHOSIS, SURGERY (7727)
- VARICES, HEMORRHAGE, DIAGNOSIS (0990)
- VARICES, HEMORRHAGE, ENDOSCOPY, SCLEROSIS (4960)
- VARICES, HEMORRHAGE, LYMPHO-VENOUS ANASTOMOSIS (4125)
- VARICES, HEMORRHAGE, SENSTAKEN-BLAKEMORE TUBE (4973)•
- VARICES, HEMORRHAGE, WILSON'S DISEASE, SURGERY (3314)•
- VARICES, HEPATIC COMA, HEMORRHAGE, BILIRUBIN, CARCINOMA (5342)
- VARICES, LINTON-NACHLAS TUBE, SENGSTAKEN-BLAKEMORE TUBE, CIRRHOTICS (2903)
- VARICES, PORTAL HYPERTENSION, ENDOSCOPY (6907)
- VARICES, PORTAL HYPERTENSION, GASTROINTESTINAL BLEEDING, PEPTIC ULCER, CIRRHOSIS (2816)
- VARICES, PORTAL HYPERTENSION, HEMORRHAGE, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
- VARICES, RADIOLOGICAL VISUALIZATION, PLASMAEXPANDER, PORTAL HYPERTENSION (0213)
- VARICES, SELECTIVE DECOMPRESSION, LEFT GASTRIC VENOUS-CAVAL SHUNT, CIRRHOSIS (2132)•
- VARICES, SPLENECTOMY, SPLENORENAL SHUNT, HYPERSPLENISM (7303)
- VARICES, SURGERY, VAGOTOMY (3334)
- VARICES, WEATHER, HEMORRHAGE, CIRRHOSIS (4961)
- VARIX, HEMORRHAGE, WALKER OPERATION, ANASTOMOSIS (2556)
- WALL LESIONS, TRACHEOTOMY (8792)
- WORM, PARASITOLOGY, PHARYNX (3013)
- X-RAY DIAGNOSIS, WATER-SOLUBLE AGENTS, DISEASE (3307)
- ZENKER'S DIVERTICULUM, DIAGNOSIS, SURGERY (2750)

ETHANOL
- ADRENAL CORTEX, LIVER, GLUCOSE (2409)•
- CIRRHOSIS, LIVER (2365)
- DL-ETHIONINE, PROTEIN DEFICIENCY, PANCREAS, LEUCINE AMINOPEPTIDASE, RAT (1683)•
- EFFECT ON LIVER OXIDATION, SORBITOL, TRIIODOTHYRONINE, PROPYLTHIOURACIL (3120)
- FATTY INFILTRATION, HEPATIC RESISTANCE (4463)
- FATTY LIVER, ANTIOXIDANT, MECHANISM (3595)•
- GASTRIC ACID SECRETION, HISTAMINE, GASTRIN, RAT (3133)•
- HYPERBILIRUBINEMIA, PREVENTION, INFANT (1355)•
- HYPOGLYCEMIA, CHILDREN, ACID-BASE BALANCE (3119)
- LIVER, ENZYMES, RAT (8666)
- LIVER METABOLISM, DINITROPHENOL (3962)
- MALABSORPTION, VITAMIN B-12 (0406)•
- METABOLISM, LIVER, RAT (6439)•
- OXIDATION, LIVER MITOCHONDRIA, INHIBITION, NAD (2391)•
- PLASMA, STEROID SULPHATE, REDUCTION, MAN (3240)•
- TOXICITY, INHIBITION, LYSINE ORATATE (4338)

ETHIONINE
- FATTY ACID COMPOSITION, LIPID, LIVER, RAT (2433)
- FATTY ACID INCORPORATION, PHOSPHOLIPID, LIVER SLICE, RAT (2432)
- LIVER, CELL, CHROMATIN (6345)

EXCRETION
- BILE, ABSORPTION, CARDIOGLYCOSIDE (4779)•
- BILE, BODY TEMPERATURE, SKF 535-A, INDOCYANINE GREEN, BILE FLOW (4860)•
- BILE, SULFOBROMOPHTHALEIN, SHEEP (1771)
- BILE ACID, CONJUGATION, CONTAMINATION, EFFECT, RAT (5492)•
- BILIARY, DOSE-DEPENDENCY, RIBOFLAVIN, KINESIS (3122)
- BILIARY, FOREIGN COMPOUNDS, ENDOPLASMIC RETICULUM, DRUG EFFECT (3165)•
- CATECHOLAMINE, CORTICOSTEROID, PEPTIC ULCER, URINE (2641)
- CONTRAST MEDIA, BILIARY, URINARY (7826)•
- ELECTROLYTES, PANCREATIC JUICE, FISTULA, PANCREAS (0083)•
- FECAL, BILE ACIDS, LIPIDS, CHOLERESIS (8307)
- FECES, UROBILINOGEN, BILIRUBIN (7063)
- GALLBLADDER, BSP, PHENOL-3, 6-DIBROMPHTHALEIN DISULFONATE (7134)•
- GASTRIC ACID, CHILDREN, ELECTROLYTE BALANCE, CALCIUM, POTASSIUM, PHOSPHATE (2386)
- GLUTETHIMIDE, BILE, HUMAN, GALLBLADDE (5606)
- INTESTINAL, BILE PIGMENTS, CONGENITAL BILIARY DUCT ATRESIA, CHILDREN (2171)
- IRON, INTO GASTRIC JUICE, ANEMIA (3110)
- LARGE INTESTINE, CR51 CL3, DIARRHEA, CONSTIPATION (2352)
- PENTAZOCINE, ORAL AND INTRAVENOUS ADMINISTRATION (3113)
- PERFUSED LIVER, BILE ACID, BILE SALT (6362)
- RADIOIRON, ABSORPTION (7842)
- RENAL GLUCOSURIA, GLUCOSE-GALACTOSE MALABSORPTION (3453)
- SALMONELLA, STRESS, PIG (5357)
- STEROID, HORMONE, FECES (2335)•
- STEROID, INTESTINE, DISTRIBUTION (7057)•
- STEROID, LIVER, PERFUSION, RAT (4762)
- SULFOBROMOPHTHALEIN, LIVER, STEROID, RAT (4833)•
- TETRACYCLINE, BILE DUCT, INFECTION (6922)
- URINARY, 5-HYDROXYINDOLYLACETIC ACID, NORMAL, DIGESTIVE DISEASE (3755)
- URINARY EXCRETION, GASTROINTESTINAL

- EXCRETION, PLASMA PROTEIN BINDING (3995)•

EXERCISE
- ULTRASTRUCTURE, HEART, LIVER, RAT (3068)

EXOCRINE
- PANCREAS, SECRETION (0088)
- SECRETION, PANCREAS, METHODOLOGY (1690)

EXPLANT CULTURE
- LIVER, MORPHOLOGY, CYTOGENESIS (1562)•

EXTRACORPOREAL CIRCULATION
- LIVER PHOSPHORYLASE (1709)•

EXTRACT
- LIVER, PARTIAL, HEPATECTOMY, MITOSIS, RAT (1394)

EXTRANEOUS BODY
- SIGMOID COLON (0458)

FAMILIAL DISEASE
- ZELLWEGER SYNDROME, CONGENITAL, RECESSIVE GENE, AUTOSOMAL (2845)

FAMILIAL OCCURRENCE
- GLUTENENTEROPATHY, DERMATITIS HERPETIFORMIS (7437)•

FAT
- ABSORPTION, SMALL INTESTINE, CHILDREN (4041)
- CELLS, CHOLERA ENTEROTOXIN, ANTITOXIN (4008)
- CYSTIC FIBROSIS, PANCREAS (4344)
- DIET, LIPID METABOLISM, HEPATITIS (3645)
- DIET, LIVER, ENZYME (3214)
- FECES, NITROGEN, PANCREAS (3282)
- INTOLERANCE, ADULT, DIET (1172)
- LIVER, AZASERINE, RAT (2856)•
- NUTRITIONAL, DEFICIENCY, FATTY ACID, BILE LIPID (3451)
- PERIPHERAL, NECROSIS, ACUTE PANCREATITIS, PANCREATIC ENZYMES (8261)
- SATURATED, HEPATIC METABOLISM, ANILINE, HEXOBARBITAL (3189)
- UNSATURATED, DIETARY FACTOR, CHOLESTEROL (6352)•

FATTY ACID
- BILE LIPID, NUTRITIONAL FAT (3451)
- CIRRHOSIS, SPINAL FLUID, SERUM (3650)•
- COMPOSITION, LIVER MICROSOME, CCI4-TOXICITY (4471)
- DEFICIENCY, LIVER TRIGLYCERIDE RELEASE (8618)•
- DI- AND TRI-GLYCERIDE BIOSYNTHESIS, LIVER (2428)
- DIURNAL VARIATION, AD LIBITUM FOOD, SINGLE DAILY MEAL, SERUM, RAT (3207)
- ESTERS, PANCREATIC LIPASE, SUBSTRATE SPECIFICITY (8504)•
- ETHANOL, GLUCOSE, LIVER (2409)•
- FATTY LIVER, FROHLICH SYNDROME, DIAGNOSIS (2078)
- FREE, PLASMA, TRIGLYCERIDE, LIVER LIPID, GLUCAGON (3967)
- HEPATOCYTE, LOW PRESSURE, METABOLISM (3045)
- INCORPORATION, PHOSPHOLIPID, LIVER SLICE, RAT (2434)
- INTESTINAL, CONCENTRATION, DIETARY LIPID (6493)•
- LIPID COMPOSITION, ETHIONINE, LIVER, RAT (2433)
- LIVER, BIOCHEMISTRY, RAT (0843)•
- LIVER, MITOCHONDRIA, THYROXINE (3947)•
- LIVER, OXIDATION, EMBRYO (3938)•
- LIVER METABOLISM, DIABETES (3172)•
- OXIDATION, LIVER, FETAL AND NEONATAL RAT (3206)
- PHOSPHOLIPID INCORPORATION, ETHIONINE, LIVER SLICE, RAT (2432)
- PLASMA, GASTRECTOMY, GROWTH HORMONE (7322)•
- PYRIDOXINE ESTER, ABSORPTION, BILE SALT, SURFACTANT (2327)•
- SYNTHESIS, ENZYME, LIVER, RADIATION (0890)
- SYNTHESIS, LIVER, ADIPOSE TISSUE, LIPOGENESIS, PIG (0128)
- SYNTHESIS, MITOCHONDRIA, MICROSOME, LIVER (2321)
- TRIELAIDIN, INGESTION, HEPATIC, LIPID (6461)
- UNSATURATED, ENZYMES, LIVER, DIET, RAT (0887)

FECAL SMEAR
- DIARRHEA, PARASITOLOGY, DIAGNOSIS, THERAPY (2199)

FECES
- AEROMONAS HYDROPHILA, DNASE AGAR (7250)
- AMMONIA LEVEL, E. COLI, LACTOBACILLUS, INFANT (2495)
- AMMONIA LEVEL, FEEDING METHOD, INFANT (2493)
- AMMONIA LEVEL, INTESTINAL FLORA, LACTOBACILLUS PREPARATION, INFANT (2494)
- ANALYSIS, IN VIVO DIALYSIS, ORGANIC ANIONS, DIETARY EFFECTS (0942)•
- BACTERIA, MALABSORPTION, SMALL INTESTINE (6184)
- BACTERIA, PHAGE-TYPING INFANTS, CHILDREN (2977)
- BLOOD, TEST, AMIDOPYRINE (8704)•
- CONSTIPATION, MOTILITY, CARMINE (6528)
- DEFECATION, AET, JEJUNUM, TAENIA COLI, RAT, GUINEA PIG, RABBIT (5623)
- DEFECATION, CONTINENCE, COLON, RECTUM, ANUS (4802)
- DIALYSIS, IN VIVO, ANION, ANTIBIOTIC (0942)•
- DIARRHEA, DIAGNOSIS (2204)
- EGGS, COUNTING, SCHISTOSOMA (2243)
- ELECTROLYTE LOSS, COLON RESECTION (7492)
- ESCHERICHIA COLI, SEROTYPES, HOSPITAL PATIENTS (2232)
- FAT, FATTY ACID, TRIGLYCERIDE, LONG CHAIN, MEDIUM CHAIN (5499)
- FAT, NITROGEN, PANCREAS (3282)
- FATTY ACID, STEROLS, CIRRHOSIS (4509)
- 51CR, RADIOASSAY, ASHING TECHNIQUE (8005)•
- FISTULA, DIET (5116)
- FLORA, ANTIBIOTIC, BILIARY EXCRETION RAT (2215)

  FLORA, INTESTINE, ANTISEPSIS, ANTIBIOTICS (0424)*
  FLORA, RENAL FUNCTION, COLON BYPASS (7636)
  FLORA, URINARY ORGANISMS, E. COLI (0429)
  GIARDIASIS, BACTERIA, PARASITE, VIRUS (4880)
  HELMINTHIC OVA, DIAGNOSIS (0948)*
  HEPATIC PORPHYRIA, PORPHYRIN, URINE (6025)
  INTESTINE, BACTERIA (6230)
  LIPID, FRACTIONS, BLOOD (4009)
  LYSTERIA MONOCYTOGENES ISOLATION, CLINICALLY HEALTHY HUMANS AND CATTLE (1797)
  MANSON'S SCHISTOSOMIASIS, INTESTINE (3006)
  MECONIUM, UMBILICAL CORD, STEROID (2487)
  OCCULT BLOOD, CANCER, BLADDER, BENZIDINE (1522)
  PARASITOLOGY, TOXOPLASMA (3011)
  PH, AMEBIC DYSENTERY (7680)*
  PROTEOLYSIS, CROHN'S DISEASE, ULCERATIVE COLITIS (2761)*
  STEROID, HUMAN, METABOLISM (4875)
  UROBILINOGEN EXCRETION, BILIRUBIN PRODUCTION (7063)*

FETOPROTEIN
  ALPHA, LIVER CARCINOMA, DIAGNOSIS, BANTU (0544)
  ALPHA, TEST, HEPATOCELLULAR CARCINOMA (2528)
  ALPHA-SERUM, LIVER DISEASE, CANCER, REGIONAL DIFFERENCES (1350)*

FETUS
  CANINE, GASTRIN, FUNDUS, PARIETAL CELL (7093)*
  GASTROINTESTINAL OBSTRUCTION, PRENATAL DIAGNOSIS, AMNIOCENTESIS (3415)*
  LIVER, HISTOCHEMISTRY, ENZYMES, MORPHOLOGY (0001)*
  PROTEIN, HEPATOMA (3557)

FEVER
  PARATYPHOID, TYPHOID, ELIMINATION, GREEN SALAD, CONTAMINATED FOOD, EPIDEMIC (6159)
  Q, ENZYMATIC ACTIVITY, LIVER, RNA, PROTEIN (4372)*
  TYPHOID, CHLORAMPHENICOL, PENICILLIN, STEROIDS, ELECTROLYTES, INTESTINAL HYPERMOTILITY (5333)
  TYPHOID, DIAGNOSIS, ETIOLOGY, TREATMENT, EPIDEMIOLOGY, SALMONELLA (6200)
  TYPHOID, FOOD POISONING, SALMONELLOSIS EPIDEMIOLOGY (6942)
  TYPHOID, THERAPY, VI-ANTIGEN (6241)

FIBRINOLYSIS
  CIRRHOSIS, EXERCISE, MAN (0638)*
  CIRRHOSIS, PORTAL HYPERTENSION, THROMBOCYTOPENIA (0641)
  COAGULATION, LIVER HOMOTRANSPLANT (2453)
  PLASMINOGEN, LIVER DISEASE (1392)

FIBRIN-STABILIZATION FACTOR
  LIVER, KIDNEY, DISEASE, METHODOLOGY (2054)

FIBROADENOMATOSIS
  BILIARY, INTRAHEPATIC, DILATATION (1486)

FIBROMA
  COLON, TORSION, COMPLICATION, PREGNANCY (2698)

FIBROSIS
  CELIAC TRUNK, PANCREATITIS (5160)
  CONGENITAL HEPATIC, INCIDENCE, TREATMENT (2052)
  FATTY LIVER, JEJUNOCOLIC SHUNT (4521)
  HEPATIC, CONGENITAL, KIDNEY (4408)
  HEPATIC, TUBULAR ECTASIA, RENAL LESION, PYELITIS, UROGRAPHY (5187)
  IDIOPATHIC RETROPERITONEAL, TOXOPLASMA DYE TEST (0696)
  LIVER, CONGENITAL, KIDNEY (4435)
  LIVER, RAT, REVERSIBILITY, COLLAGEN (5222)*
  PERIPORTAL, ALCOHOLISM, FATTY CHANGE CIRRHOSIS, BILIARY STASIS (0593)
  SCHISTOSOMATIC, PORTAL HYPERTENSION (0646)

FISSURE
  ANUS, SURGERY (3484)

FISTULA
  ANAL, AZATHIOPRINE, CROHN'S DISEASE (0397)*
  ANORECTAL, SURGERY (5731)
  ANUS (4278)
  ANUS, PATHOLOGICAL ANATOMY, TREATMENT (8943)
  AORTO-ESOPHAGEAL, CANCER (1837)
  AORTO-INTESTINAL, SURGERY, ABDOMINAL AORTA, ILIAC ARTERY (1938)
  ARTERIO-PORTAL, ETIOLOGY, SULFOBROMOPHTHALEIN CLEARANCE, HEPATIC LESIONS (9084)
  ARTERIO-PORTAL, GASTRIC RESECTION, PHYSIOPATHOLOGY (8850)
  BILE DUCT, COLONIC, ANATOMOPATHOLOGY, PATHOGENESIS (9175)
  BILIARY, EXTERNAL, BILE COLLECTION, RABBITS (0118)
  BILIARY-DUODENAL, JAUNDICE, REFLUX, CHOLECYSTECTOMY (6547)
  BILIARY INTESTINAL (7660)
  BILIARY TRACT, X-RAY, DIAGNOSIS (5706)
  CHOLECYSTOCOLONIC, MALABSORPTION, CHOLECYSTECTOMY (7451)
  CHOLECYSTODUODENAL, ASYMPTOMATIC, CHOLECYSTOCHOLEDOCHOLITHIASIS, SPHINCTER OF ODDI, INFLAMMATION (9194)
  CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
  CHOLECYSTODUODENAL, HEMORRHAGE (1058), (3668)
  CHOLECYSTOENTERIC, SURGERY, ILEUS (2929)
  CHOLEDOCHODUODENAL, PYLOROPLASTY, CHOLEDOCHOJEJUNOSTOMY, LIVER SCLEROSIS (9177)
  COLONIC, URINARY, HIGH, INTESTINAL, SURGERY (2741)
  COMMON BILE DUCT, RIGHT RENAL PELVIS, RADIOLOGICAL DEMONSTRATION (3693)
  COMMON ILIAC ARTERY, JEJUNUM (1174)

  CROHN'S DISEASE, SURGERY, EVALUATION (2677)
  DIGESTIVE, TREATMENT (3381)
  DUODENUM, COLON, DIAGNOSIS, SURGERY (5709)
  ESOPHAGEAL, DIAGNOSIS, ANATOMOPATHOLOGY (8806)
  ESOPHAGOBRONCHIAL, BENIGN, SURGERY (0258)
  ESOPHAGOBRONCHIAL, PULMONARY SUPPURATION, DIAGNOSIS (5762)
  ESOPHAGO-CARDIAC, EMBOLIC MENINGO-ENCEPHALITIS (7302)
  ESPHAGO-ESPHAGEAL, ACHALASIA (2562)
  ESOPHAGOTHORACIC, REFLUX, PEPTIC ULCER (6605)
  ESOPHAGO-TRACHEAL, CONGENITAL, ADULT (5748)
  ESOPHAGUS, BRONCHUS, SURGERY, MALIGNANT (2547)•
  ESOPHAGUS, PNEUMONECTOMY, REPAIR (7312)
  ESOPHAGUS, STOMACH, ESOPHAGOCARDIAC (3333)
  ESOPHAGUS, SURGERY, POSTPNEUMONECTOMY (6991)
  GALLBLADDER, BILE, STEROIDS (5682)
  GALLBLADDER, GALLSTONE, BILE (2922)
  GASTRIC, ABSENCE OF ABDOMINAL WALL, MANAGEMENT (8832)
  GASTRIC, BIOASSAY OF GASTRIN (1676)
  GASTRIC, HEIDENHAIN POUCH STUDIES, INHIBITION SECRETION, SECRETIN, DOG (0801)•
  GASTRIC, HISTAMINE, PENTAGASTRIN (6406)
  GASTROBRONCHIAL, GASTRIC ULCER, PERFORATION, RESECTION, DRAINAGE (2596)
  GASTRO-COLIC, GASTRIC ULCER (6994)
  GASTROCUTANEOUS, STOMACH, SURGERY (5799)
  GASTRODUODENAL, MULTIPLE (1040)
  GASTROJEJUNOCOLIC, ETIOLOGY, INFANT (8213)
  HEMOBILIA, HEPATIC ARTERY, PORTAL VEIN (3586)
  HEPATIC ARTERY, PORTAL VEIN, PATHOPHYSIOLOGY (2980)
  HEPATIC-PORTAL, ANGIOGRAPHY, LIVER BIOPSY (4413)
  ILEO-VESICAL, CROHN'S DISEASE (4245)
  INTERNAL BILIARY, BILE PERITONITIS, BACTERIA, DOG, MAN (3662)•
  LATERAL DUODENAL, SURGERY, DUODENOJEJUNOSTOMY (5774)
  LYMPHATICO-PERITONEUM, CHYLOUS ASCITES, AORTIC ANEURYSM (3341)•
  PANCREAS, ACUTE VIRAL HEPATITIS (6094)
  PANCREAS, SECRETION, CASEIN HYDOLYSATE (5555)
  PANCREATIC, BICARBONATE RESPONSE, DUODENAL ACIDIFICATION (8552)•
  PANCREATIC, MANAGEMENT, SURGERY (3518)
  PANCREATIC, METABOLIC DISORDERS, PANCREATODUODENECTOMY (0596)
  PANCREATIC, TOTAL EXTERNAL, GASTRIC SECRETION (3147)
  PELVIC, NONSUTURE REPAIR, COLON, RECTUM (7477)
  PHARYNGOESOPHAGEAL, CANCER, LARYNGECTOMY, PHARYNGOESOPHAGOSTOMA (2350)
  POSTOPERATIVE, SMALL INTESTINE, ACUTE OCCLUSION (6678)
  RECTO-ILEAL, TUBERCULOSIS, RECTUM, SURGERY (2705)
  RECTO-PROSTATIC, POSTOPERATIVE (2712)
  RENODUODENAL, RENAL LITHIASIS (1109)
  SIGMOIDO-URETHRAL, DIVERTICULITIS (2004)
  SMALL AND LARGE INTESTINE, SURGERY (9232)
  SMALL INTESTINE, DIET AND ELECTROLYTE THERAPY, SURGERY (8903)
  STOMACH SURGERY, SMALL INTESTINE SURGERY, SURGERY COMPLICATIONS (1029)
  TRACHEOESOPHAGEAL, CHEST TRAUMA (5744)
  TRACHEOESOPHAGEAL, CONGENITAL, RADIOLOGY (0984)
  TRACHEOESOPHAGEAL, ESOPHAGEAL ATRESIA, COLON TRANSPLANT (6583)
  TRACHEOESOPHAGEAL, PEDIATRICS (1012)
  TRACHEOESOPHAGEAL, RADIOLOGY (1832)
  URETERO-DUODENAL (1881)
  URETHRO-RECTAL (2717)
  VESICO-INTESTINAL, CROHN'S DISEASE (6851)
FLORA
  ATYPICAL, MYCOBACTERIA, FECES (8000)
  BACTERIAL, INTESTINAL, GASTROINTESTINAL DISORDERS (1152)•
  CHOLERA, SMALL INTESTINE, LARGE INTESTINE (4587)
  ENTEROPATHY, CHRONIC DIARRHEA, ANTIBIOTIC (2960)
  ESCHERICHIA COLI, DIARRHEA (2237)
  INTESTINAL, CHOLERA, CHILDREN (2001)
  INTESTINAL, E. COLI, FECAL AMMONIA LEVEL, LACTOBACILLUS, INFANT (2495)
  INTESTINAL, ESCHERICHIA COLI, FECES (2232)
  INTESTINAL, FOLATE-DEFICIENT DIET, MICE (2950)•
  INTESTINAL, R-FACTOR TRANSMISSION, MAN (6511)
  UPPER ALIMENTARY TRACT, ESOPHAGEAL CHEMICAL BURNS, STOMACH, SECRETION (0253)
FLUOROURACIL
  COLON, CARCINOMA (3489)
FOLATE
  CONGENITAL, MALABSORPTION (6684)•
  DEFICIENCY, DIET, INTESTINAL FLORA, MICE (2950)•
  METHYLATION, INTESTINE (0921)
FORAMEN OF WINSLOW
  BOWEL, HERNIA (3429)
FOREIGN BODY
  ESOPHAGUS, SURGICAL TREATMENT (2576)
FOREIGN BODY SYNDROME
  GASTROSTOMY, GASTROSCOPIC FINDINGS, CLINICAL CONSIDERATIONS (3361)
FOSSA
  SUPRAVESICAL, STRANGULATION, ILEUM (1145)

- FREEZING
  - COOLING RATE, DAMAGE, ENZYME, MITOCHONDRIA, LIVER, MOUSE (2312)
  - GASTRIC, MUCOSA, HISTOCHEMISTRY, ENZYME, SECRETION, PH INDICATOR (1608)
  - GASTRIC MUCOSA, GASTRIC AND DUODENAL ULCERS, HEMORRHAGE (0281)
  - STOMACH, DUODENAL ULCER, FAILURE (2720)
- FRUCTOSE
  - ABSORPTION, HYPERLIPIDEMIA, TOLERANCE TEST (6358)•
  - FRUCTOSE-1-PHOSPHATE, ACTIVATION, LIVER, ENZYME (1705)•
  - FRUCTOSEMIA, AMINO ACID, METABOLISM (4364)•
- FUNGUS
  - CANDIDA, GASTROINTESTINAL TRACT (5374)
  - CANDIDA ALBICANS, ESOPHAGITIS, RADIOLOGY (8073)
  - CANDIDA ALBICANS, INTESTINE, INTESTOPAN, THERAPY (3020)
  - GASTROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, CYLOSTATIC, STEROIDS (6982)
  - HEPATO-PANCREATIC ACTINOMYCOSIS (2842)

- GABA
  - BRAIN, LIVER, INTOXICATION (3610)
- GALLBLADDER
  - ABSORPTION, BILIRUBIN, CONJUGATED, UNCONJUGATED, DOG (3101)•
  - ACUTE CHOLEYSTITIS, SERUM SIALIC ACID (6140)
  - ACUTE CHOLECYSTITIS, SURGERY (6141), (6142)
  - ACUTE NONCALCULOUS CHOLECYSTITIS, POSTOPERATIVE (6134)
  - ADENOMA, EXTRAHEPATIC BILE DUCT (6914)
  - ADENOMYOMA, ADENOMYOMATOSIS (4557)
  - AMPULLA OF VATER, DIAGNOSIS, TREATMENT (7662)
  - BILE, DYSPEPSIA (4621)
  - BILE, GALLSTONE (7655)•
  - BILE, GALLSTONE, FORMATION (8395)•
  - BILE, GLUTETHIMIDE, HUMAN (5606)
  - BILE, IMMUNOGLOBULIN, MONKEY (6939)•
  - BILE, STEROIDS, FISTULA (5682)
  - BILE, VAGOTOMY, PYLOROPLASTY (3168)•
  - BILE DUCT, BILE FLOW, CHOLEDOCHUS (5570)•
  - BILE DUCT, BILE TRACERS, IRON ABSORPTION (3664)•
  - BILE DUCT, DILATION (4545)
  - BILE DUCT, POLYARTERITIS NODOSA (6915)
  - BILE PEPTIDES (3185)
  - BILE SECRETION, METABOLISM (0866)
  - BILE STONES, ULTRASONIC DETECTION, A-SCANNING (4893)•
  - BILIARY TRACT, SURGERY, LIVER (5308)
  - BILIRUBIN GLUCURONIDE (1744)
  - BILIRUBIN SECRETION, CONTRACEPTIVE STEROIDS, ESTROGENS, PROGESTOGENS, BILIRUBIN INFUSION BASAL BILE FLOW (3164)•
  - BIOPSY, LAPAROSCOPY, JAUNDICE, OBSTRUCTION (6575)
  - BSP-TEST, BILE (4089)
  - CAERULEIN CHOLECYSTOKINETIC ACTION, BILIARY PATHWAYS (4534)
  - CALCULOSIS, ENZYME, LIVER DAMAGE (2163)•
  - CANCER (0664), (0675)
  - CANCER, CIRCULATION, MARKER STUDIES, DIAGNOSIS (1807)•
  - CANCER, EPITHELIAL ALTERATIONS (8408)
  - CANCER, ETIOLOGY, DIAGNOSIS (9173)
  - CANDIDIASIS, ANTIBIOTIC (2919
  - CARCINOMA (4530)
  - CARCINOMA, ACUTE PANCREATITIS, ALPHA AMYLASE, SERUM TRANSAMINASES (2527)•
  - CARCINOMA, BILIARY TRACT (1500)
  - CARCINOMA, CHOLELITHIASIS, CHOLECYSTITIS (2933)
  - CARCINOMA, DIAGNOSIS (4024)
  - CARCINOMA, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
  - CARCINOMA, DIAGNOSIS, SURGERY (2185)
  - CARCINOMA, GALLSTONE, CHOLECYSTECTOMY (5311)
  - CARCINOMA, LIVER (4541)
  - CARCINOMA, PRIMARY (4562)
  - CARCINOMA, SURGERY (5309)
  - CARDIAC SYNDROME, CHOLELITHIASIS, MYOCARDIAL ISCHEMIA (6924)
  - CERULEIN, CHOLECYSTOKINETIC ACTION (3896)
  - CHOLANGIOGRAPHY, BARIUM SULFATE, SPHINCTER OF ODDI (4036)
  - CHOLANGIOGRAPHY, GALLSTONE, DIAGNOSTIC PROCEDURE (8018)
  - CHOLANGIOGRAPHY, TRANSHEPATIC (2180)
  - CHOLANGIOSCOPY, CALCULI (6557)
  - CHOLANGIOTOMOGRAPHY, BILIVISTAN, BILIGRAFIN, BILE DUCT (7215)•
  - CHOLANGITIS, OBSTRUCTION, BILE DUCT (2924)
  - CHOLANGITIS, SCLEROSIS, JAUNDICE, BILE (5307)
  - CHOLECYSTANGIOGRAPHY, INFUSION METHOD, CONTRAST MATERIAL, PLASMA EXPANDERS, BIOCHEMISTRY (0139)
  - CHOLECYSTATIC ICTERUS GRAVIDARUM (3681)
  - CHOLECYSTECTOMY, ABDOMINAL PRESSURE, LIVER DAMAGE, CHOLESTEROL STONE (6925)
  - CHOLECYSTECTOMY, BILE FLOW, COMPOSITION (2907)•
  - CHOLECYSTECTOMY, CHOLANGIOGRAPHY, CHOLECYSTITIS (6135)
  - CHOLECYSTECTOMY, CLOSTRIDIAL INFECTION (3669)
  - CHOLECYSTECTOMY, HEARTBURN, REGURGITATION (1462)
  - CHOLECYSTITIS, ACUTE, CHRONIC (4532)
  - CHOLECYSTITIS, ACUTE, ELDERLY (0674)
  - CHOLECYSTITIS, CECUM INFILTRATE, DIAGNOSIS (1471)
  - CHOLECYSTITIS, CHOLELITHIASIS, MALE (6918)
  - CHOLECYSTITIS, HEMOBILIA, HEMOCHOLECYST (3665)
  - CHOLECYSTITIS, LIVER PROTEIN, ELECTROPHORESIS (6154)
  - CHOLECYSTITIS, NONCALCULOUS, ACUTE (9180)

CHOLECYSTITIS, PANCREATITIS, PERICARDITIS (3689)
CHOLECYSTITIS, POSTTRAUMA, YOUNG MALES (3691)
CHOLECYSTITIS, RADIOLOGY, DIAGNOSIS (5715)
CHOLECYSTITIS, SURGERY (2169), (2925), (5305)
CHOLECYSTITIS, THERAPY (4539)
CHOLECYSTITIS, TREATMENT (2926)
CHOLECYSTOCHOLANGIOGRAPHY (7286)
CHOLECYSTOCHOLANGIOGRAPHY, CHOLEVID, DIAGNOSIS (5707)
CHOLECYSTOCHOLANGIOGRAPHY, DRIP INFUSION (0220)
CHOLECYSTOCOLONIC FISTULA, MALABSORPTION, CHOLECYSTECTOMY (7451)
CHOLECYSTOGRAPHY (1822)
CHOLECYSTOGRAPHY, CHOLECYSTOKININ, HORMONE (1480)
CHOLECYSTOGRAPHY, CONTRAST MEDIA (3279)
CHOLECYSTOGRAPHY, DIAGNOSIS (4087)
CHOLECYSTOGRAPHY, DOUBLE-CONTRAST STUDY, TELEPAQUE, ORAGRAFIN GRANULES, ORAGRAFIN CAPSULES (3264)•
CHOLECYSTOGRAPHY, GALLSTONE (4918)
CHOLECYSTOKININ, BIOASSAY, SURGICAL PROCEDURE, DOSE-RESPONSE CURVE (3170)•
CHOLECYSTOKININ, MOTOR CONTROL, PERISTALSIS, DOG (0175)
CHOLECYSTOKININ, RADIOLOGY (1357)
CHOLECYSTOKININ BINDING, BILE SALTS, FATTY AND SALT ANIONS, SURFACE TENSION (3225)
CHOLECYSTOKININ-PANCREOZYMIN, RECENT DEVELOPMENTS (3232)
CHOLECYSTOKININ-PANCREOZYMIN, VILLIKININ, INTESTINAL STIMULATION (3442)•
CHOLECYSTOLITHIASIS, CHOLECYSTITIS, CIRRHOSIS ETIOLOGY (0653)
CHOLECYSTOPANCREATITIS, ACUTE, PRIMARY, RECURRENT (5978)
CHOLELITHIASIS, ASYMPTOMATIC (6139)
CHOLELITHIASIS, CHOLECYSTECTOMY, DIAGNOSIS, TIME (2909)
CHOLELITHIASIS, CHOLECYSTITIS, PREGNANCY, SURGERY (2931)
CHOLELITHIASIS, DIET, FORMATION, THERAPY (2174)
CHOLELITHIASIS, LIVER FUNCTION, PREOPERATIVE (0686)
CHOLELITHIASIS, MUCUS MEMBRANE CHANGES (2175)
CHOLELITHIASIS, OBSTRUCTION (4542)
CHOLELITHIASIS, PANCREAS, SECRETION (5329)
CHOLELITHIASIS, RADIOLOGY (5320)
CHOLESTASIS, BILE DUCT, LIVER (4420)
CHOLESTASIS, LIVER, THIABENDAZOLE (4428)
CHOLESTEROL STONES, ABNORMAL BILE (7656)•
CHOLESTEROL SYNTHESIS, ILEUM, LIVER, GUINEA PIG (6463)
CONGENITAL, DUPLICATION, RADIOLOGY, OPERATIVE CHOLANGIOGRAPHY (8405)
CONGENITAL ABSENCE (0656)
CONGENITAL ABSENCE, BILE DUCT (4553)
CONGENITALLY ABSENT, CHOLEDOCHUS, GALLSTONE (1473)
CONTRACTION, CHOLECYSTOKININ, GASTRIC SECRETION (7962)
CONTRACTION, PEPTIDE, STOMACH, PANCREAS (2481)•
CONTRAST MEDIUM, GLUCOSE, BILE DUCT (8710)•
CORRECTIVE BILIARY SURGERY, ACUTE PANCREATITIS, BILIARY TRACT DISEASE (1340)
CYST, HYPOPLASIA, BILE DUCT, ANOMALY (4551)
CYTOCHEMISTRY, CHOLELITHIASIS, HISTOLOGY (8406)
DECEIVING SYMPTOMS (3667)
DIAGNOSIS, RADIOACTIVE SCANNING (0951)•
DISEASE, ANATOMICAL, CLINICAL (0667)
DISEASE, CALCULUS-FREE, RADIOLOGIC DIAGNOSIS (0661)
DISEASE, CHOLELITHIASIS, CHOLECYSTITIS, CHOLECYSTOLITHIASIS (4564)
DISEASE, DIAGNOSIS, RADIOISOTOPE (5730)
DISEASE, PEPTIC ULCER, RADIOLOGY (6668)
DISEASE, PHARMACOTHERAPY, PATHOPHYSIOLOGY, CHOLELITHIASIS (6132)
DIVERTICULOSIS, ULCERATION, CHOLECYSTOGRAPHY (6921)
DOUBLE, LITHIASIS, SURGERY, RADIOGRAPHY (9174)
DUODENUM, PRESSURES, VAGOTOMY, CHOLECYSTOKININ STIMULATION, CAT (1649)•
DUPLICATION, CONGENITAL, CHOLECYSTOGRAPHY (5313)
DUPLICATION, MORPHOGENESIS, CLASSIFICATION, DIAGNOSIS, SYMPTOMOLOGY (0226)
DYE TRANSPORT, BSP, EXCRETION, GLUTATHIONE CONJUGATES (4754)•
EMPHYSEMA, CHOLECYSTITIS, RADIOLOGY, CLINICAL FEATURES (8399)
EMPTYING, MORPHINE, ATROPINE, HEXAMETHONIUM, SIMPSON'S METHOD (2359)•
EXCRETION, BSP, PHENOL-3, 6-DIBROMPHTHALEIN DISULFONATE (7134)•
EXCRETION, METABOLISM, SULFOBROMOPHTHALEIN, BENZIODARONE (1765)
EXPERIMENTAL CHOLELITHIASIS, BABOON (1455)•
FISTULA, CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
FISTULA, COLON, MALABSORPTION (8412)
FISTULA, GALLSTONE, BILE (2922)
FISTULA, HEMORRHAGE, CHOLECYSTITIS (3668)
FUNCTION, MORPHOLOGY, RADIOLOGY (8756)
FUNCTION, SCINTILLATION CAMERA-1600 ANALYZER (3297)
FUNCTION, VAGOTOMY (2166)
FUNCTIONAL ALTERATIONS, SPHINCTEROTOMY SPHINCTER OF ODDI (8576)
GALLSTONE, BABOON, EXPERIMENTAL MODEL (1455)•

GALLSTONE, BILIARY, OBSTRUCTION, CHOLEDOCHAL CYST, STRICTURE (6150)
GALLSTONE, CHOLECYSTECTOMY, THROMBOSIS, JAUNDICE (5328)
GALLSTONE, CONTRACTION (3687)
GALLSTONE, DUODENUM, OBSTRUCTION (5330)
GALLSTONE, ILEUS (5047)
GALLSTONE, ILEUS, SURGERY (5054)
GALLSTONE, PHOSPHOLIPID SYNTHESIS, SECRETION (6129)
GALLSTONE, VOMITING (2179)
GAS, CHOLECYSTITIS, BACTERIA (4554)
GAS GANGRENE, GANGRENOUS PNEUMOCHOLECYSTITIS (3678)
HEPATIC-OVARIAN SYNDROME, ETIOLOGY, PATHOGENESIS, CLINICAL PICTURE, THERAPEUTICS (3575)
HETEROTOPIA, EPITHELIUM, THYROID, GASTRIC, MUCIN HISTOCHEMISTRY (0660)
HEXOSAMINE CONTENT, INDUCED CHOLELITHIASIS, RABBITS (1457)*
HISTOLOGY, PATHOLOGY, TECHNIQUE, CHOLESTEROLOSIS, CALCULI, HYPERPLASIA, ADENOMYOMATOSIS (4527)*
HYDROCELE, LIVER HISTOPATHOLOGY, PARENCHYMA (2917)
HYDROP, RADIOLOGY (5319)
HYDROP, SCARLET FEVER, CHILDREN (1494)
HYPERPLASIA, CHOLESTEROL ACCUMULATION, MORPHOLOGY (9196)
HYPOGENETIC, PRIMARY STONE, COMMON BILE DUCT (3690)
ILEUM, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)*
INFUSION CHOLANGIOGRAPHY (5727)
INJURY, ABDOMINAL TRAUMA, TREATMENT (0658)
INNERVATION, SALMONELLOSIS, DOG (7712)
INTRAVENOUS CHOLANGIOGRAPHY (3295)
LITHIASIS, GERIATRICS, SURGERY (1484)
LITHIASIS, LESIONS, HISTOLOGY, MOUSE (9192)
LITHIASIS, LIVER (4419)
LIVER, ICTERUS, DIAGNOSIS (4035)
LIVER DISEASE, CHOLECYSTOGRAPHY, LIVER PARENCHYMA, HYPERKINESIA (5302)
MELANOMA, BILIARY DUCT (1501)
MELANOMA, CHOLECYSTECTOMY, INTRA-ABDOMINAL METASTASES (4920)
MOTILITY, BILE CONSTITUENTS, CHOLESTEROL GALLSTONE (7930)
MOTILITY, MALABSORPTION, POSTGASTRECTOMY, ULCER (0042)*
MOTILITY, PRIFINIUM BR, RADIOLOGY (3900)
MOTILITY, VEGETABLE JUICE (7086)
MOTOR ACTIVITY, DIAGNOSIS, RADIOLOGY, OPISTHORCHOSIS (3003)
MOTOR FUNCTION, CHRONIC CHOLECYSTITIS, ATROPINE (2918)
MUCOSA, BILE, GLYCOPROTEINS, IMMUNOLOGY (7653)*
MUCOSA, HYPERPLASTIC STATE, BILIARY PAIN (3680)
MUCOSA, WATER TRANSPORT, ENZYME ACTIVITY, HORMONAL CONTROL (2398)*
MUCOSAL HYPERPLASIA, CHOLECYSTOLITHIASIS, SOLITARY CALCULI (1458)*
MULTISEPTATE, EMBRYOGENESIS (5316)
NECK, SOLITARY GALLSTONE, RADIOGRAPHY (9190)
NECK CONTRACTION, BILE EXCRETION, CHOLECYSTOKININ CONTROL, DIGESTIVE TRACT, DOG (0175)
NONSURGICAL TRAUMA, MANAGEMENT, CHOLECYSTECTOMY, BILE DUCTS (0655)
OBSTRUCTION, PERCUTANEOUS LIVER PUNCTURE (4533)
OBSTRUCTIVE JAUNDICE, ALKALINE PHOSPHATASE, ENZYMES (2162)*
OBSTRUCTIVE JAUNDICE, ANGIOGRAPHY, DILATATION (8703)*
OPACIFICATION, PYELOGRAPHY (1820)
PAPILLOMA, ADENOMA, LIPOMA (3682)
PAPILLOMATOSIS, METACHROMATIC LEUKODYSTROPHY (1493)
PARASITE, CAT (6282)
PERCUTANEOUS TRANSHEPATIC CHOLANGIOGRAPHY (7244)
PERFORATION, GALLSTONE, AGE FACTOR, SEX FACTOR, NUTRITION (5325)
PERFORATION, PERITONITIS, AGED SUBJECTS (2916)
PERFUSION STUDY, OUTPUT (3266)*
POSTOPERATIVE CARDIAC MANAGEMENT, K, BILIARY SYSTEM (3683)
PRIMARY CARCINOMA (7664)
PRIMARY CHOLANGITIS (2936)
PRIMARY DISEASE, CHOLELITHIASIS, ETIOLOGY, CHILDREN (8415)
PRIMARY SCLEROSING CHOLANGITIS, STEROID THERAPY (7568)
RADIOLOGY, BILIARY TRACT, CHOLANGIOGRAPHY (1819)
REMOVAL, BILE DUCT DRAINAGE, LIPID METABOLISM, FIBRINOLYSIS (0578)
REMOVAL, DRAINAGE, CHOLEDOCHUS, CYSTIC DUCT (6140)
RENOGRAPHIC CONTRAST MEDIA, DIAGNOSIS EFFICIENCY (0964)
RUPTURE, BILIARY TRACT FISTULA, CHOLELITHIASIS (1464)
SIPHON, ANATOMOPATHOLOGY, SURGERY (9188)
SPHINCTER OF ODDI, FLOW RESISTANCE, VAGOTOMY (6382)*
SPONTANEOUS EXTERNAL FISTULA, CHOLELITHIASIS, CHOLECYSTECTOMY (8417)
STENOSIS, AMPULLA OF VATER, SPHINCTERECTOMY (4999)
STONE, INFLAMMATION, BILIARY TRACT (1497)
STUMP, PATHOLOGY, DUODENUM, ULCER (7669)
SURGERY, CHOLEDOCHAL SPHINCTER, DUODENUM (4544)
SURGERY, CHOLEDOCHODUODENOSTOMY (4546)
SURGERY, DUODENUM, CHOLANGITIS (2347)
SURGERY, DUODENUM, HEMATOMA, BILE DUCT (5813)
SURGERY, POLYARTERITIS NODOSA (3686)
SURGERY, RESECTION, SPHINCTER OF ODDI (4153)
SURGERY, VAGOTOMY (5178)
TUMOR, GALLSTONE (3684)
TUMOR, SGPT, SGOT (0663)
VAGAL STASIS, CHOLECYSTITIS, VAGOTOMY, DOG (8416)

- VAGOTOMY, CHOLELITHIASIS, BILIRUBIN (3951)•
- VAGOTOMY, RADIOLOGY, CANNON'S LAW (1491)
- VOLVULUS, NON-LITHIASIC CHOLECYSTOPATHY, SURGERY (6147)
- X-RAY, STOMACH, DUODENUM, SEX DIFFERENCE, GALLSTONES (5041)*

GALLBLADDER DISEASE
- ESOPHAGEAL SYMPTOMS, CHOLECYSTECTOMY (1442)

GALLSTONE
- ACUTE CHOLECYSTITIS (2170)
- BABOON, GALLBLADDER, CYSTIC DUCT, EXPERIMENTAL MODEL (1455)*
- BILE PROTEIN, ANTISERA (8396)•
- CHOLEDOCHUS, GALLBLADDER, CONGENITALLY ABSENT (1473)
- COMMON BILE DUCT, HYPOGENETIC GALLBLADDER (3690)
- COMMON DUCT, NONOBSTRUCTIVE DILATATION (9185)
- FATTY ACID, CALCIUM, HISTOCHEMISTRY (8398)•
- FISTULA, BILE (2922)
- GALLBLADDER, CONTRACTION, FORMATION (3687)
- HEXOSAMINE CONTENT, INDUCED CHOLELITHIASIS, RABBITS (1457)•
- HYPOGLYCEMIA, PARASYMPATHETIC (1475)
- ILEUM, SURGERY, ENTEROTOMY (1941)
- ILEUS, OBSTRUCTION, SMALL INTESTINE (7667)
- ILEUS, SMALL INTESTINE (8150)
- PREGNANCY, CHOLESTEROL METABOLISM (1459)•
- PREVENTION, SODIUM DEHYDROCHOLATE, CLOFIBRATE, CHOLESTYRAMINE (6911)•
- RADIOLOGY, ILEUM, SURGERY (1940)
- TUMOR, GALLBLADDER (3684)

GAMMA GLOBULIN
- HEPATITIS, PROPHYLAXIS (4487)
- IMMUNE RESPONSE, APPENDIX, RABBIT (3026)•
- LIVER, VIRAL HEPATITIS (2110)

GANGRENE
- COLON, ABDOMINAL AORTIC RESECTION, TREATMENT (3465)•
- GAS, ABDOMINAL WALL, APPENDECTOMY (1251)
- GAS, GALLBLADDER (3678)
- ISCHEMIC COLITIS (2006)
- JEJUNUM, INTUSSUSCEPTION, TETANUS (1198)
- NON-OCCLUSIVE, INTESTINAL, OCCLUSIVE (6938)•
- SMALL INTESTINAL, ELECTRICAL ACTIVITY, VASCULAR OCCLUSION, DOG (0049)
- ULCERATIVE COLITIS, PIODERMA GANGRENOSUM (4326)

GAS
- BOWEL EXPLOSION, SURGICAL COMPLICATION (7704)
- CONTENT, GASTROINTESTINAL TRACT, LUNG RESUSCITATION, INFANTS, RADIOLOGY (1085)
- CYST, INTESTINE, PNEUMATOSIS INTESTINALIS, SURGICAL TREATMENT (2529)
- DISTENSION, GASTROINTESTINAL TRACT, CLINICAL TESTING, RADIOLOGY, CEOLAT (6236)
- GANGRENE, APPENDICITIS, PERFORATION, FATAL, DRAINAGE (5097)
- INTRAMURAL, INTESTINE, INFANTS (2678)
- NITROGEN, SMALL INTESTINE, AMINO ACID, AGING, RAT (5443)
- PORTAL VENOUS SYSTEM, X-RAY, JEJUNUM (6989)
- STOMACH WALLS (2586)

GASTRECTOMY
- AMPULLARY DISCONNECTION (1076)
- ANTIBODY, DELOMORPHOUS CELLS, INTRINSIC FACTOR (2952)
- BILIARY TRACT, MODIFICATION, RE-OPERATION, NUTRITIONAL SYNDROME (1867)
- BILLROTH II, GASTRIC LYMPHOGRANULOMATOSIS, RADIOLOGY (8845)
- CANCER, STOMACH, DUODENUM, RELAPSE (7356)
- CARCINOMA, GASTRIC ULCER (1075)
- COMPLICATIONS, DUMPING SYNDROME, ULCER RESECTION (6636)
- DUMPING SYNDROME, GASTRIC BIOPSY, GASTROSCOPY (7369)
- DUODENAL ULCER, GASTRIC VAGOTOMY, ANTRECTOMY (1147)
- DUODENAL ULCER, WOMEN (3398)
- ESOPHAGOJEJUNAL ANASTOMOSIS, CHRONIC CATGUT (6631)
- FAT ABSORPTION, STOMACH (3367)
- GASTRIC ACID, ACHYLIA, ULCER (4136)
- GASTRIC EMPTYING, MALABSORPTION, DOG (1151)•
- GASTRIC MUCOSA, GASTROSCOPIC PICTURE, HCl SECRETION, HISTOLOGY (0282)
- GASTRIC ULCER, CHILD, STENOSIS, GASTRODUODENOSTOMY (2595)
- GASTRIC ULCER, GERIATRICS (2639)
- GASTRODUODENOSTOMY, GASTRODUODENAL PEPTIC ULCER, LIVER, GALLBLADDER (2588)
- GASTROENTEROSTOMY, MALIGNANT ULCER, REPEATED SURGERY (7372)
- GASTROINTESTINAL HEMORRHAGE, GASTROESOPHAGEAL REFLUX, GASTRIC STUMP CANCER (8095)
- GASTROINTESTINAL REVERSAL, SURGICAL TECHNIQUES, ADVANTAGES, COMPLICATIONS (1155)
- GROWTH HORMONE, FREE FATTY ACID, PLASMA (7322)•
- HYPOGLYCEMIA, INSULIN (1976)
- INFUSION THERAPY, NA LEVEL (4179)
- INSULIN SECRETION, TOLBUTAMIDE (4207)
- INTESTINAL OBSTRUCTION, ORANGE PITH (1139)
- IRON ABSORPTION, STOMACH (1021)•
- IRON ABSORPTION, VITAMIN B12 (6651)
- JEJUNAL INTERPOSITION, NUTRITION, RADIOLOGY (3368)
- KIDNEY FUNCTION, CREATININE, UREA (7694)
- LEUCOCYTES, EXERCISE, TUBERCULOSIS (1873)
- LIVER DAMAGE, ALCOHOL (4459)

  MALABSORPTION SYNDROME (2623)
  MALIGNANT VILLOUS TUMOR, EXUDATIVE GASTROPATHY, HYPOPROTEINEMIA (1387)
  MOTILITY, PROPHYLAXIS (7333)
  NEOPLASM, ULCER, NECROSIS, ZOLLINGER-ELLISON SYNDROME (2613)
  PARTIAL, CENTRAL NERVOUS SYSTEM (1103)
  PARTIAL, GASTRIC EMPTYING, MECHANISM (4138)
  PARTIAL, GASTRIC FUNCTION, MORPHOLOGY ULCER (7391)
  PARTIAL, GASTRIC ULCER (1110)
  PARTIAL, GASTRODUODENOSTOMY, DUODENAL ULCER (3408)
  PARTIAL, HYPOGLYCEMIA, GLUCOSE TOLERANCE TEST, INSULIN (1028)
  PARTIAL, NEUROLOGICAL DISEASE (1982)
  PARTIAL, OCCULT BLOOD LOSS, ANEMIA (3351)
  PARTIAL, ULCER, CARCINOMA (4167)
  PEPTIC ULCER, INTRAPERITONEAL PERFORATION, ANATOMOPATHOLOGY (8889)
  PEPTIC ULCER, ZOLLINGER-ELLISON SYNDROME, CARCINOID (2967)
  POLYA, AFFERENT-LOOP OBSTRUCTION, ACUTE PANCREATITIS (1872)
  POSTOPERATIVE, LACTASE DEFICIENCY (2536)*
  POSTOPERATIVE RETENTION, ANASTOMOSIS RETROCOLIC (0290)
  POST-SYNDROME, REMEDIAL SURGERY (4594)
  PULMONARY TUBERCULOSIS, PROPHYLAXIS (2591)
  SERUM AMYLASE LEVELS, AFFERENT LOOP OBSTRUCTION, ACUTE PANCREATITIS (0276)
  SMALL INTESTINE, FUNCTION, MORPHOLOGY, CONTRAST MEDIA (2597)
  SUBTOTAL, GASTROINTESTINAL ANASTOMOSIS REPAIR (7371)
  SUBTOTAL, ULCER, GASTRIC, PEPTIC, CARCINOMA, HYPERMOTOR DYSKINESIS (0318)
  SURGERY, STOMACH, JEJUNAL LOOP, MAN (0286)
  TOTAL, CARCINOMA (4600)
  TOTAL, ESOPHAGO-JEJUNAL-DUODENAL INTERPOSITION (1027)
  TOTAL, INDICATION, TECHNIQUE, CANCER (4139)
  TOTAL, TECHNIQUE, ESOPHAGEAL ANASTOMOSIS (8113)
  TOTAL, TOMODA JEJUNOPLASTY (4171)
  TOTAL, ZOLLINGER-ELLISON SYNDROME, TUMOR, HYPERCALCEMIA, GASTRIN (8433)
  ULCER, CANCER, GASTRIC STUMP (1145)
  ULCER, CHRONIC PEPTIC, MAN (1140)
  ULCER, GASTRIC STUMP, PRIMARY CANCER (8872)
  VITAMIN D DEFICIENCY, CALCIUM ACTIVE TRANSPORT, SMALL INTESTINE (8123)
GASTRIC ACID
  CHOLINERGIC STIMULATION, SECRETIN (8580)*
  COMA, ANTICHOLINERGIC DRUG (0783)*
  DETERMINATIONS (4215)
  GASTRECTOMY, ACHYLIA, ULCER (4136)
  GASTRIN-LIKE PENTAPEPTIDE, ELECTROLYTE (3918)
  INTRINSIC FACTOR, PERNICIOUS ANEMIA, IMMUNOGLOBULIN (4130)*
  PEPSIN, NITROGEN CONTAINING COMPOUNDS, VAGOTOMY, MAN, DOG, ULCER (4184)*
  SECRETION, GASTRIC RADIOLOGY, DUODENAL RADIOLOGY, PEPTIC ULCER (3403)
  SECRETION, GASTRIN PENTAPEPTIDE, HEIDENHAIN POUCH, DOGS (0081)
  SECRETION, HISTAMINE TEST, KAY METHOD, DUODENAL ULCER, RADIATION THERAPY (4185)*
  SECRETION, HYPERCHLORHYDRIA (1859)*
  SECRETION, INHIBITION, PROSTAGLANDIN, SYNTHETIC (2373)*
  SECRETION, INTRINSIC FACTOR, HYPOTHYROIDISM, HYPERTHYROIDISM (1668)*
  SECRETION, PAVLOV POUCH, GASTRIC FISTULA, HISTAMINE, INSULIN, FEEDING EXPERIMENTS, BONE DUST (3907)*
  SECRETION, PENTAGASTRIN, GLUCAGON, PEPTIC ULCER (0790)*
  SECRETION, PENTAGASTRIN, HISTAMINE, MAXIMAL RESPONSE, SIDE EFFECTS (1670)*
  SECRETION, POLYPEPTIDES (3142)
  STIMULATED SECRETION, DRUG EFFECT, RATS, GUINEA-PIGS (0063)*
  TEST, INTUBATION, DUODENAL ULCER (4212)
  VANAMIL AS NEW ANTACID (3380)
GASTRIC ACTIVITY
  ANTRUM CELLS, PHENYLBUTAZONE, STOMACH (1621)
GASTRIC DISEASE
  CHOLINESTERASE, ULCER, CARCINOMA, PROTEIN METABOLISM (6545)
  ULCER, PERNICIOUS ANEMIA, ABSORPTION, CEPHALEXIN (8835)
GASTRIC EMPTYING
  MECHANISM, GASTROINTESTINAL DISEASES (1087)
  MECHANISM, PARTIAL GASTRECTOMY (4138)
GASTRIC FUNCTION
  C-TERMINAL GASTRIN TETRAPEPTIDE, ACID SECRETION (7867)
  GASTRIC BIOPSY, MORPHOLOGY, GASTRITIS (8766)
  JEJUNAL HOMOGRAFT, RADIOLOGY, GASTRECTOMY (7352)
  LOCAL HYPOTHERMIA, DOG (7098)
  MORPHOLOGY, PARTIAL GASTRECTOMY, ULCER (7391)
  PROXIMAL RESECTION, PANCREATIC FUNCTION, ABSORPTION (1020)*
  TESTING, SURGERY (8033)
  TRIPLE LUMEN GASTRIC TUBE, SUCTION AND FEEDING (3377)
GASTRIC JUICE
  ACIDITY, ION EXCHANGE RESINS (7240)
  ALCIAN BLUE, BINDING ULCERS, CARCINOMA (8879)*
  CHRONIC GASTRITIS, ULCER, DUODENAL, GASTRIC (7375)
  DRUG DISSOLUTION, TABLET, FORMULATION MAN (0806)
  GASTRIC ULCER, DUODENAL ULCER, HEMATOPOIESIS (7402)
  GASTROFERRIN, GLYCOPROTEIN, PROPERTIES (7785)*

GASTROINTESTINAL TRACT, CHRONIC DISEASES, HEMOPOIESIS (7686)
GASTROINTESTINAL TRACT DISEASE, PEPSIN, PEPTIC ULCER, ANABOLIC STEROID (2955)
GLYCOPROTEIN, SULPHUR CONTAINING, GLC, SUGAR, HEXOSEAMINE (2388)
HYDROCHLORIC ACID, INSULIN, GASTRIC ULCER, DIABETES MELLITUS (2549)
HYDROGEN ION CONCENTRATION, ULCER (2381)
IMMUNOGLOBULINS, ANTIBODIES, GASTROINTESTINAL SECRETIONS (0903)*
INTRINSIC FACTOR, NEUTRALIZATION (0065)*
IRON-BINDING CAPACITY, FERRIC HYDROXIDE (0804)
IRON EXCRETION (3110)
LACTATE DEHYDROGENASE, DIAGNOSIS, CANCER, PRECANCEROUS STATE (2517)
LIPID, NORMAL, PATHOLOGIC (3911)
NEUTRALIZATION, DUODENUM, PH (7191)*
PEPSIN, ENZYME, ALKALI INACTIVATION (8583)*
PROTEIN, IMMUNOGLOBULIN, ELECTROPHORESIS (4148)
PROTEIN FRACTIONS, CHRONIC GASTRITIS, DUODENAL ULCER (7370)
STOMACH, HISTAMINE, DOG (0794)*
STOMACH, IRON BINDING, SPECTROPHOTOMETRY (3281)
UROPEPSIN, ACUTE DYSENTERY, SECRETION (2957)
GASTRIC MUCOSA
ACID, GASTRIN, PENTAGASTRIN, BULLFROG (7874)
BARRIER, STRESS ULCER, PATHOGENESIS (8137)
ENDOCRINE CELLS, AMINE FORMATION, STORAGE (3913)
HISTAMINE RESISTANT ANACIDITY (4161)
HUMAN, ANTIGENIC ESTERASE VI, SPECIES SPECIFICITY (7822)
HYPERSECRETION, METABOLISM, XYLAMIDE (4149)
MEMBRANE POTENTIAL, METABOLIC INHIBITOR (7073)
MORPHOLOGY, CHRONIC GASTRITIS (7374)
NUCLEIC ACID METABOLISM, DOG (7097)
PEPTIC CELLS, VAGOTOMY, PYLOROPLASTY (0734)*
POLYGALACTOSULFATE PROTECTION, AGGRESSION CONDITION (3145)
SECRETION, CINCOPHEN, ANTRAL POUCH DOG (3148)
SULPIRIDE, THIOPROPERAZINE POLYMYXIN B-INDUCED LESIONS (7323)*
VIRAL HEPATITIS, HEALTH RESORT TREATMENT (7616)
ZYMOGENS, FRACTIONS (2390)
GASTRIC POUCH
ACID-FILLED, ACIDITY REDUCTION, EXCHANGE DIFFUSION, HYDROGEN ION, SODIUM ION, DOG (0029)*
GASTRIC PRESSURE
ANESTHESIA, INTUBATION (1654)
GASTRIC SECRETION
ACID, GASTRIN, ULCER, ANTRAL TRANSPLANT (3906)*
ACID, HISTAMINE, STOMACH (0787)*
ACID, SECRETIN, STOMACH (0786)*
ACUTE HYPERSIDERINEMIA, HYDROCHLORIC ACID, GASTRIC MUCOSA (2382)
ALKALINE MINERAL WATER (4177)
CHOLEDOCHOJEJUNOSTOMY, DOG, HISTAMINE, ACIDITY (2387)
CHRONIC GASTRITIS (2621)
DEOXY-D-GLUCOSE, ACTION, PYLORUS, LIGATION (3917)
DUODENAL ULCER, DIAGNOSIS (7226)
EXTERNAL STIMULATION, GASTRIC ANTRUM, HISTAMINE, INSULIN, DOG (0789)*
GASTRIN-INDUCED, ALDOSTERONE (4180)
HISTAMINE STIMULATED, SECRETIN, INHIBITION (2348)*
HUMORAL STIMULI (1682)
HYDROGEN ION CONCENTRATION, ULCER (2391)
HYPERSECRETION, ACIDITY, GASTRIN, CALCIUM (7679)*
INHIBITION, PARASYMPATHOLYTIC DRUG, GASTRITIS, MAN (7331)
INHIBITION, PROSTAGLANDIN, SYNTHETIC (2373)*
NICOTINE EXPOSURE (4142)
PENTAGASTRIN, PEPSIN, SECRETIN, CHOLECYSTOKININ (7092)*
PENTAGASTRIN-INDUCED, ATROPINE, VAGOTOMY (0064)*
PH TELEMETRY, ESOPHAGEAL REFLUX, ULCER, THERAPY EVALUATION (0938)*
PHARMACOLOGY, 1- (3(1-CYCLOHEXENYL)-3-PHENYLPROPYL)-1-METHYL PIPERIDINIUM BROMIDE (7875)
POTASSIUM CHLORIDE, CHLOROTHIAZIDE, GASTRIC MUCOSA (0792)*
PREGNANCY, INDIAN WOMEN (1064)
PYLORUS LIGATION, NOCTURNAL RHYTHM (3919)
SERUM PEPSINOGEN, HISTAMINE, POLAROGRAPHY (2384)
STIMULATION, SYNTHETIC GASTRIN, PENTAGASTRIN, MUCOSA, BULLFROG (7874)
STIMULATION, 2-DEOXY-D-GLUCOSE, PEPSIN, ACIDITY, DOG, GASTRIC FISTULA (2389)
STOMACH, DUODENAL BULB, DOG (0795)*
THERMAL BURN, DOG, MAN (2584)*
ULCER, SURGERY (4206)
UROCHOLECYSTOKININ, GALLBLADDER CONTRACTION (7869)
VOLUME, ACID OUTPUT, SECRETIN (7195)*
GASTRIC STUMP
CANCER, GASTRECTOMY, ULCER (1145)
GASTRIC TISSUE
HISTAMINE BIOSYNTHESIS, PYRIDOXINE DEFICIENCY (6403)
GASTRIN
ACETYLCHOLINE STIMULATION, SERUM LEVELS, THORACIC DUCT LYMPH (8582)*
ACIDITY, ESOPHAGEAL SPHINCTER, STOMACH (3890)*
ANTIBODY, HUMAN SERUM, RADIOIMMUNOASSAY (2323)
ANTIBODY, PRODUCTION, BEHAVIOR, USE (7050)
ANTRUM, RADIOIMMUNOASSAY, FETUS (7093)*

- BIOASSAY, ZOLLINGER-ELLISON SYNDROME (0933)•
- CALCIUM, BETAZOLE, ACID OUTPUT (7679)•
- DIARRHEA, GASTROGENIC (1360)
- ELECTROPHORESIS, SERUM ALBUMIN, METABOLISM (6402)
- ESOPHAGUS, DUODENUM, STOMACH (3146)
- GASTRIC MUCOSA, CYTOLOGY, HISTOCHEMISTRY (0002)•
- GASTRIC SECRETION, ALDOSTERONE (4180)
- HYDROCHLORIC ACID SECRETION, PANCREAS (2385)
- IMMUNOASSAY, VAGAL RELEASE, INSULIN (6394)•
- INHIBITION, PHYSIOLOGICAL ACTIVITY (2370)•
- MECHANISM, POSTVAGOTOMY-PYLOROPLASTY DUMPING, DIARRHEA (0298)
- I AND II, POLYPEPTIDE, SECRETIN, CHOLECYSTOKININEPANCREOZYMIN (6333)
- PENTAGASTRIN, ACID, PEPSIN, SECRETION, STOMACH, 1-HYASCYAMINE, PEPTIC ULCER (3394)
- PENTAPEPTIDE, ELECTROLYTE SECRETION, GASTRIC ACID (3918)
- PENTAPEPTIDE, GASTRIC SECRETION. HISTAMINE, RAT (3151)
- PERFUSION, STOMACH, RAT (2435)
- RADIOIMMUNOASSAY, ANTISERUM, PENTAGASTRIN, PANCREOZUMIN, HUMAN SERUM (0080)
- SECRETORY INHIBITORS, MUCOSAL BLOOD FLOW, AMINOPYRINE-CLEARANCE, VASOPRESSIN (1672)•
- SERUM CONCENTRATIONS, PERNICIOUS ANEMIA (1669)•
- STOMACH, GASTRIC FISTULA, BIOASSAY OF GASTRIN (1676)
- STOMACH, MUCOSA, HISTIDINE DECARBOXYLASE, STIMULATION (6397)•
- STOMACH, SECRETION (3915)
- STOMACH, ULTRASTRUCTURE, MUCOSA, HORMONAL EFFECTS (1671)•
- STOMACH MOTOR ACTIVITY, PENTAGASTRIN (0778)•
- TETRAPEPTIDE, ANTIGEN, SERUM CARRIER PROTEIN (8506)•
- XYLAMIDE ANTIGASTRIN-ANTISECRETORY, PANCREATITIS (4350)
- ZOLLINGER-ELLISON SYNDROME, TRACER TECHNIQUE, IMMUNOLOGY (1808)•

GASTRIN PENTAPEPTIDE
- ACID SECRETION, PEPSIN SECRETION, HEIDENHAIN POUCH, DOG (0081)

GASTRITIS
- ABSORPTION, SECRETION, TRACER TECHNIQUE (2825)
- ACUTE, CHRONIC, EROSIVE DIAGNOSIS, BIOPSY (0310)
- ACUTE, VIRAL HEPATITIS, GASTRIC MUCOSA GASTRIC SECRETION (9136)
- ALCOHOLIC, LIVER FUNCTION, PHOSPHATASE (2831)
- ALCOHOLISM, ACCIDENT DEPARTMENT (0306)
- ALKALINE GASTRO-DUODENAL REFLUX, DYSPEPSIA (4164)
- ATROPHIC, ACHLORHYDRIA, ZOLLINGER-ELLISON SYNDROME (1887)
- ATROPHIC, ACHYLIA GASTRICA, VITAMIN B12 MALABSORPTION, ANEMIA PERNICIOUS, ADDISON (4132)•
- ATROPHIC, IMMUNOGLOBULINS, AUTOANTIBODIES (0274)•
- ATROPHIC, SUCTION BIOPSY, METAPLASIA (6579)•
- ATROPHIC BORDER, PYLORIC GLAND, FUNDIC GLAND, ENDOSCOPY, HISTOLOGY (0302)
- BILE REFLUX, MENTRIER'S DISEASE (3366)
- CHOLECYSTITIS, HEPATITIS, RADIOLOGY (2206)
- CHRONIC, ASPIRATION BIOPSY, STOMACH (7243)
- CHRONIC, ATROPHIC, NEOPLASTIC (1060)
- CHRONIC, ATROPHIC, SUPERFICIAL (8104)
- CHRONIC, DIAGNOSIS, TREATMENT (1884)
- CHRONIC, EPITHELIAL CELLS, SURGERY (4157)
- CHRONIC, GASTRIC ANTIBODY (2620)
- CHRONIC, GASTRIC CARCINOMA (4163)
- CHRONIC, GASTRIC JUICE, PROTEIN FRACTIONS, DUODENAL ULCER (7370)
- CHRONIC, GASTRIC JUICE, ULCER, DUODENAL, GASTRIC (7375)
- CHRONIC, GASTRIC MUCOSA, BIOPSY, ACID CELL ANTIBODIES (8844)
- CHRONIC, GASTRIC MUCOSA, DIAGNOSIS (7264)
- CHRONIC, GASTRIC SECRETION (2621)
- CHRONIC, GASTRIC SUCTION BIOPSY, IMMUNOGLOBULIN RELATIONSHIPS, GASTRIC MUCOSA (8839)
- CHRONIC, GASTRIC ULCER, GASTRIC NEOPLASMS, ENDOSCOPY, RADIOLOG (8789)
- CHRONIC, GASTROSCOPY, GASTRIC ACIDITY (7232)
- CHRONIC, HISTOLOGIC CLASSIFICATION (2622)
- CHRONIC, MUCOSA, ACID SECRETION, ATROPHIC GASTRITIS (8128)
- CHRONIC, MULTIPLE POLYPOSIS, ILEITIS (3364)
- CHRONIC, PANCREAS, AMYLASE, LIPASE (7351)
- CHRONIC, PEPTIC ULCER (1121)
- CHRONIC, RESORT TREATMENT, SOUTHERN CRIMEA (8092)
- CHRONIC, THERAPEUTIC WATER, SECRETION, ACIDITY (2590)
- COLLAGENOLYSIS, MAN (7345)
- DIAGNOSIS, GASTROSCOPY, GASTROPHOTOGRAPHY, BIOPSY (0227)
- EPIDEMIOLOGY, MEXICO (2742)
- EROSIVE, HERPES SIMPLEX HEPATITIS, GASTROINTESTINAL BLEEDING, ADULT (0612)
- ESOPHAGUS, SMALL INTESTINE, COLON, SJOGREN'S SYNDROME (6432)
- GASTRIC EROSION, DIAGNOSIS, HEMORRHAGE (8742)
- HEMORRHAGIC, CONTROL, RESECTED STOMACH (4166)
- HEMORRHAGIC EROSIVE, PATHOLOGY, TREATMENT (0037)
- HEMORRHAGE, VAGOTOMY (3349)
- INTESTINAL ABSORPTION, RESORT TREATMENT (8129)

  - INTRINSIC FACTOR, CELLS, PERNICIOUS ANEMIA (4160)
  - MULTIPLE POLYPOSIS (1083)
  - MYELIN FIGURES, ELECTRON MICROSCOPY, HISTOPATHOLOGY (8091)*
  - PAIN, STOMACH, DOG (1862)
  - PARIETAL CELL, ANTIBODY (2602)
  - PARIETAL CELL, ANTIBODY, SECRETION (3339)*
  - PATHOLOGY, DIAGNOSIS, THERAPY (0311)
  - PHLEGMASIA (3352)
  - PHLEGMONOUS, GASTRIC NEOPLASM, SURGERY ANTIBIOTIC MANAGEMENT (8122)
  - PSEUDOLYMPHOMA, STOMACH (1865)
  - PYLORIC GLAND, SECRETION, ACID (3342)
  - STOMACH, CORROSIVE, SURGERY (1082)
  - STOMACH, GASTRECTOMY, ANTICHOLINERGIC (1828)
  - STOMACH FUNCTION, PHYSICAL EXERCISE (1031)
  - STOMACH PATHOLOGY, MUSCULARIS MUCOSA, FIBROMUSCULOSIS (4137)
  - TOXIC, ALCOHOLIC, MEDICINAL (4159)
  - TREATMENT (2619)
- GASTROCAMERA
  - DIAGNOSIS (2513)*
  - GASTRIC DISEASE DIAGNOSIS (2504)*
- GASTRODUODENAL BLEEDING
  - DRUG INDUCED, ACETYLESALICYLIC ACID, PHENYLBUTAZONE (8966)
- GASTRODUODENOSTOMY
  - GASTRECTOMY, GASTRODUODENAL PEPTIC ULCER, LIVER, GALLBLADDER (2588)
- GASTROENTERITIS
  - ACUTE, INFECTIVE, GENERAL PRACTICE AUSTRALIA (0366)
  - BACTERIA, VIRUS, DIARRHEA, INFANTS, ANTIBIOTICS (1101)
  - CHILDREN, INFANTS (1870)
  - DIARRHEA, BERBERINE, PEDIATRIC (3743)
  - DIARRHEA, EPIDEMIOLOGY (2605)
  - DIFFERENTIAL DIAGNOSIS, SALMONELLOSIS (4658)
  - DRUG EFFECT, DIARRHEA, PAIN, VOMITING (2953)
  - E.COLI, ANTIBIOTICS, INFANTS (8435)
  - ENTEROPATHIC ESCHERICIA COLI, EXTENSIVE COMMUNITY OUTBREAK (3718)
  - EOSINOPHIL, MALABSORPTION (3890)*
  - EPIDEMIOLOGY, INFANCY (2221), (2234)
  - FUNCTIONAL DISORDERS, VERTEBRAL COLUMN MAN (9207)
  - HELMINTHIC, CONTROL, CALF (8500)
  - INFANT, SURVEY (8423)*
  - PARASITIC DISEASES, INFANT (1193)
  - PREVENTION, TREATMENT, INFANCY (1888)
  - PROTEIN LOSS, CORTICOSTEROID (4261)
  - SALMONELLOSIS (2230)
  - SMALL INTESTINE, STOMACH, BIOCHEMISTRY (2223)
  - STAPHYLOCOCCIC, RECURRENT ILEUS, RESPIRATORY DISTURBANCES (0364)
  - VIRUS, CORONAVIRUS (3758)
  - VIRUS, TRANSMISSIBLE, EPIDEMOLOGY, EXPERIMENTAL STUDY, ANTIBODIES, PIG (0368)
- GASTROENTEROLOGY
  - CHILDREN (2922)
  - HEMORRHAGE, ULCER, HEPATIC COMA(1514)
  - INSIDON, PHARMACOLOGY (9211)
  - LEGISLATION PROPOSAL, NATIONAL INSTITUTE OF DIGESTIVE DISEASES AND NUTRITION (2214)
  - NONSPECIFIC IMMUNITY, DUCTON (6998)
  - PEDIATRIC (2975)
  - PERIACTIN, APPETITE STIMULANT, THERAPEUTIC STUDY (2991)
- GASTROENTEROSTOMY
  - DUODENAL ULCER, ILEUS, PERFORATION, VAGOTOMY (6663)
  - ULCER (3356)
  - VAGATOMY, METABOLIC CONSEQUENCE, NUTRITIONAL STATE (2587)*
- GASTROGRAPHY
  - INSUFFLATION, TANTALUM POWDER (2500)*
- GASTROINTESTINAL BLEEDING
  - ACUTE, PROPANOLOL, EPINEPHRINE (8420)*
  - ACUTE CIRCULATORY INSUFFICIENCY, THERAPY, ANATOMOPATHOLOGY (9230)
  - ANGIOGRAPHY (2498)*
  - COAGULATION DEFECTS, HEMOPHILIA, FIBRINOLYSIS (8449)
  - PREVENTION, DISTRESS, SULPIRIDE (7682)*
  - RESPIRATORY DISTRESS, ANATOMOPATHOLOGY, THERAPY, PROGNOSIS (9228)
  - VASOCONSTRICTOR INFUSION, MESENTERIC VESSELS, MESENTERIC ANGIOGRAPHY (8441)
- GASTROINTESTINAL DISEASE
  - ACRODERMATITIS, ENTEROHEPATICA, CHRONIC DIARRHEA, ETIOLOGY (9213)
  - AMERICAN NEGROES, FREQUENCY (1192)
  - CANCER, CHEMOTHERAPY, 5-FLUOROURACIL (8436)
  - CANCER, COMBINATION CHEMOTHERAPY (8443)
  - CHOLERA, EL TOR OGAWA VIBRIO CHOLERAE, INABA V. CHOLERAE, EPIDEMIOLOGY (4568)*
  - CHOLERA, EPIDEMIOLOGY, SEROLOGY (4586)
  - DUODENITIS, DUODENAL BIOPSY, MORPHOLOGY (7321)*
  - ENZYME PATTERNS, LIVER DISEASE, DUPUYTREN'S CONTRACTURE (4373)
  - ETIOLOGY, SEA WORKERS (4414)
  - FUNCTIONAL, CONSTIPATION, AGED (8446)
  - GASTRIC ACHYLIA, ESOPHAGUS, JEJUNUM, COLON, SJOGREN'S SYNDROME (8432)
  - GASTRIC ACID SECRETION, HISTALOG, ANALYSIS (7324)*
  - GASTRIC EMPTYING, MECHANISMS (1087)
  - GASTRO-DUODENAL ULCER, SULPIRIDEX TREATMENT (3407)
  - IMMUNE SERA, STOOL, PARASITES (0710)
  - LOW DOSAGE HISTAMINIC TESTS, PRIMARY GASTRIC SECRETIONS, GASTRIC BUFFER (1680)
  - METCLOPRAMIDE TREATMENT, GASTRODUODENAL MOTILITY (8455)
  - PARASITE, E. HISTOLYTICA, DYSENTERY, HEPATIC ABSCESS, ACUTE, CHRONIC. AGAR GEL DIFFUSION, INDIRECT HEMAGGLUTINATION (4659)*
  - PATHOGENESIS, AUTO-IMMUNIZATION REACTIONS (7725)
  - PROTEIN LOSS (2968)
  - SMALL INTESTINE, BACTERIAL FLORA (1152)*

  - TEST, VITAMIN A ABSORPTION (3267)*
  - THERAPY, SULPIRIDE (7325)*
  - ULCERATIVE COLITIS, PROGNOSIS (8989)*
- GASTROINTESTINAL INSUFFICIENCY
  - GASTROINTESTINAL REVERSAL, SURGERY (1155)
- GASTROINTESTINAL REVERSAL
  - SURGICAL TECHNIQUES, ADVANTAGES, COMPLICATIONS, GASTRECTOMY, SMALL BOWEL INSUFFICIENCY (1155)
- GASTROINTESTINAL TRACT
  - ABSORPTION, BILE SALT, SURFACTANT, PYRIDOXINE (2327)*
  - ABSORPTION, CELL TRANSPORT (5498)
  - ABSORPTION, DRUGS, AVAILABILITY, IN VITRO (3865)*
  - ABSORPTION, DRUGS, PHYSIOCHEMICAL PROPERTIES (1636)
  - ABSORPTION, KEROSENE, PNEUMONITIS (5497)
  - ABSORPTION, POLYMERS, DRUGS (6376)
  - ABSORPTION, SALICYLIC ACID DERIVATIVE, TAURINE ANALOG, RAT (2350)
  - ABSORPTION, TAURINE, GLYCINE, ASPIRIN, SMALL INTESTINE (5503)
  - ACTIVITY, NERVE CELL, TRACT WALLS (5637)
  - ACUTE BLEEDING, CENTRAL VENOUS PRESSURE (8425)*
  - ACUTE ULCER, EROSION, NECROSIS (1123)
  - ALLERGY, FOOD ALLERGY, ULCERATIVE COLITIS (6163)
  - ALLERGY, RESORPTION (4656)
  - AMINO ACID LOSS, I131-L-TYROSINE (4613)
  - AMMONIA METABOLISM, TRANSPORT (5634)
  - ANABOLIC STEROID, PEPTIC ULCER, GASTRIC JUICE, PEPSIN, CIRRHOSIS, PANCREATITIS, COLITIS, ENTEROCOLITIS (2710)
  - ANGIOGRAPHY, HEMORRHAGE (3285)
  - ARTERIAL, ISCHEMIA, SHOCK, INFARCTION (6978)
  - ARTERIES, DISEASES, MAN (0707)
  - ATROPHIC GASTRITIS, ULCERATIVE COLITIS, REGIONAL ENTERITIS, CHRONIC AGGRESSIVE HEPATITIS, BILIARY CIRRHOSIS, AUTOIMMUNE MECHANISMS (6222)
  - BACTERIA, ELECTRON MICROSCOPY, INSECT (4976)
  - BACTERIA, IRRADIATION, BACTEREMIA (6932)*
  - BILE DUCT, ANASTOMOSIS (4638)
  - BISMUTH-SORBITOL, HIATAL HERNIA, ULCER, DYSPEPSIA, BILIARY DISEASE, COLITIS, CONSTIPATION (6167)
  - BLEEDING, ANGIOGRAPHY (7752)
  - BLEEDING, MASSIVE OCCULT, VASCULAR OPACIFICATION STUDIES (3725)
  - BLEEDING, PANCREATIC PSEUDOCYST (4333)
  - BLEEDING, SURGICAL TREATMENT (0331)
  - BLEEDING, TOLAZOLINE (3720)
  - BLEEDING, VISCERAL ANGIOGRAPHY (3292)
  - CANCER, CHEMOTHERAPY (2216), (4650)
  - CANCER, EPIDEMIOLOGY (4624)
  - CANCER, NUTRITION (3759)
  - CANCER, PRIMARY (3474)
  - CANCER, ULCER, POLYP, STOMACH, INTESTINE (5367)
  - CANDIDA (5374)
  - CARCINOID TUMOR (2985)
  - CARCINOMA, HOSPITAL INCIDENCE (2241)
  - CARCINOMA, METHOTREXATE, THERAPY (2246)
  - CELIAC DISEASE, OSTEOMALACIA, DIAGNOSIS (6685)*
  - CHOLECYSTOKININ MOTOR CONTROL, PERISTALSIS, BILIARY TRACT, DOG (0175)
  - CHOLINERGIC, ANTI-EMETIC (1660)
  - CHRONIC DISEASES, GASTRIC JUICE, HEMOPOIESIS (7486)
  - COBALT ABSORPTION, METAL-PROTEID, LIVER (3116)
  - COMPLICATIONS, EHLERS-DANLOS SYNDROME (3699)*
  - COPPER 64, ABSORPTION, RAT (2353)
  - CORTICOSTEROID CLEARANCE (6365)
  - DERMATOMYOSITIS (2969)
  - DIABETES, STUDY ([illegible]649)
  - DIAGNOSIS, ENDOSCOPY, RADIOLOGY, GASTRIC FUNCTION TESTS (7251)
  - DIGESTION, ABSORPTION, AGE DEPENDENCY (7949)
  - DIGESTIVE FISTULA, TREATMENT (3381)
  - DIGESTIVE JUICE, ISO-ANTIBODY (3085)
  - DISEASE, MINERAL WATER THERAPY (4652)
  - DISEASE, PAIN, PR106 (4593)
  - DISEASE, PARENTERAL NUTRITION (2984)
  - DISEASE, PSYCHOSOMATIC (4580)
  - DISEASE, SERUM ENZYMES (7748)
  - DISEASE, THERAPY (2990)
  - DISORDERS, SKIN CHANGES, LIVER DISEASES (4654)
  - DISTENSION, DIMETHYLPOLYSILOXAN, CEOLAT, CLINICAL TESTING, RADIOLOGY (6236)
  - DIVERTICULA, PERFORATION, SURGERY (7715)
  - DIVERTICULUM, DIVERTICULITIS, RADIOLOGY, DIAGNOSIS (6197)
  - DOGMATIL, ANTIDEPRESSANT, PSYCHOTROPIC DRUG, HYPOTHALAMIC CENTER, ANXIETY (5335)
  - DRAINAGE, ASPIRATION, SIPHON (6985)
  - DRUG ABSORPTION, FACTOR (3121)
  - DRUG ABSORPTION, TRANSPORT, MODEL (3870), (3871)
  - DRUG EFFECT, ENZYME, MOTILITY, ABSORPTION, PEPSIN, PANCREAS (2489)
  - DYSPNEA, CYANOSIS, ATRESIA, STENOSIS, CHILDREN, ESOPHAGUS, DUODENUM (5345)
  - EMPTYING, BACILLUS SUBTILIS, MOUSE (9220)
  - ENDOSCOPY, DIAZEPAM (4926)
  - ENZYMES, RADIOISOTOPE, TRACER STUDY (0009)*
  - EOSINOPHILIA, INFILTRATION (1065)
  - EOSINOPHILIC GASTROENTERITIS, MALABSORPTION (7707)
  - EPITHELIUM, HISTOCHEMICAL STUDY, ELECTRON MICROSCOPE STUDY, PHORONIS (3055)
  - ERYTHEMA, NODULAR, PASTEURELLA PSEUDOTUBERCULOSA, YERSINIA ENTEROCOLITICA (6986)
  - ESOPHAGUS, STOMACH, DUODENUM, ULCER, HIATAL HERNIA, BISMUTHBILE, SORBITOL, RECTOCOLITIS (5352)

EXAMINATION, TELEVISION, MAGNETIC TAPE (0970)
FATTY ACID, METABOLISM, LIPID (4883)
FETUS, ADRENERGIC INNERVATION, CHROMAFFIN CELL (6328)
FOOD-POISONING, DIARRHEA, STAPHYLOCOCCI, BACTERIOPHAGE, EPIDEMIC (5353)
FUNCTION, COPROLOGICAL INVESTIGATION, DIETARY APPLICATION (8770)
FUNCTION, PLEURITIS, PNEUMONIA (7690)
FUNCTIONAL DISORDERS, VERTEBRAL COLUMN, MAN (9207)
GAS CONTENT, LUNGS, RESUSCITATION, INFANTS, RADIOLOGY (1085)
GASTRECTOMY, ESAPHAGO-JEJUNAL-DUODENAL INTERPOSITION (1027)
GASTRIC RESECTION, CARBOHYDRATE METABOLISM (3383)
GASTROENTERITIS, CHILDREN, INFANTS (1870)
GASTROENTERITIS, ELECTROLYTE, UREA (5385)
GASTROENTERITIS, EPIDEMIOLOGY, INFANCY (2221)
GASTROENTERITIS, NEONATAL, NURSLING MALABSORPTION, LOW-LACTOSE MILK, REALIMENTATION (6160)
GASTROENTERITIS, NUTRITION, ELECTROLYTE (5384)
GASTROENTERITIS, SALMONELLA, EPIDEMIOLOGY (6249)
GASTROENTERITIS, VIBRIO, MARINE (5393)
GASTROENTERITIS, VIRUS, NEONATE (6172)
GRANULOMATOUS REACTIONS (4599)
HEART DISEASE (6187)
HEMORRHAGE, ABDOMEN, AORTA, CAVOGRAPHY, ANGIOGRAPHY, GALLBLADDER (4949)
HEMORRHAGE, ACUTE DIAGNOSIS, TREATMENT (1084)
HEMORRHAGE, ANGIOGRAPHY, INDICATION (4588)
HEMORRHAGE, ANGIOGRAPHY, LOCALIZATION, DUODENAL ULCER, CELIAC OCCLUSION (5674)
HEMORRHAGE, ARTERIOGRAPHIC LOCALIZATION (1080)
HEMORRHAGE, ASPIRIN (6993)
HEMORRHAGE, ASPIRIN, 2-DEOXYGLUCOSE, MUCOSAL LESION, VAGOTOMY (5763)*
HEMORRHAGE, DIAGNOSIS (7245)
HEMORRHAGE, DIAGNOSIS, ARTERIOGRAPHY (0966)
HEMORRHAGE, DIAGNOSIS, TREATMENT (8458)
HEMORRHAGE, DIFFERENTIAL DIAGNOSIS, INTESTINAL CONTRACTIONS, HISTOLOGY (8781)
HEMORRHAGE, ENTERITIS (5070)
HEMORRHAGE, ESOPHAGOGASTROSCOPY, EMERGENCY (4047)
HEMORRHAGE, HIATUS HERNIA (3728)
HEMORRHAGE, MALLORY-WEISS SYNDROME, PANCREATIC CARCINOMA, LYMPHOSARCOMA, SARCOMA (6238)
HEMORRHAGE, MELENA, TELEANGLECTASIA (5386)
HEMORRHAGE, NEONATE, MILK (6971)
HEMORRHAGE, PATHOLOGY, RADIOLOGY (4589)
HEMORRHAGE, PERITONEAL COOLING (7719)
HEMORRHAGE, TREATMENT (9234)
HEMORRHAGE, TREATMENT, DOG (5370)
HEMORRHAGIC MUCOSAL NECROSIS, PERFORATION, INTESTINAL (1098)
HISTOPLASMOSES, CHILDREN (4604)
HORMONE, SECRETIN, PANCREOZYMIN, DUODENAL SECRETIONS (6333)
IATROGENESIS, ANASTOMOSIS, OBSTRUCTION, ULCER, SURGERY (2959)
IMMUNOLOGY, RESEARCH (3253)
INFANTILE COLIC (7740)
INJURIES (2997)
ISO-ANTIBODIES, AUTO-IMMUNE, ANTI-COLON, HUMAN (5126)
KRUKENBERG SYNDROME (4615)
LABORATORY DIAGNOSIS (7263)
LD50, GAMMA RAYS (4878)
LEIOMYOMAS, SYMPTOMS (7709)
LESION, ANGIOGRAPHY, HEMORRHAGE (4030)
LESION, IRRADIATION, CANCER OF CERVIX (9200)*
LESION, POTASSIUM THERAPY (3716), (4594)
LIPID METABOLISM, CHROMATOGRAPHY, DIET, ESTERS, FATTY ACIDS, RABBIT (4885)
LIVER, BILE DUCT, CHOLELITHIASIS, DYSKINESIA, MIGRAINE, ACHLORHYDRIA (5343)
LYMPHOGRANULOMATOSIS (6192)
LYMPHORETICULAR NEOPLASMS, ANATOMY (4609)
LYSOSOME, ENZYME ACTIVITY, CHICK EMBRYO, STOMACH, SMALL INTESTINE (3797)*
MALFORMATION, DYSPLASIA, ABDOMINAL MUSCLES (1513)
MALFORMATION, HYPERBILIRUBINEMIA (4612)
MALFORMATION, THALIDOMIDE, RABBIT EMBRYO (8481)
MALLORY-WEISS SYNDROME, GASTRIC MUCOSA, RUPTURE, THORACO-ABDOMINAL LESION, HEMORRHAGE, COUGHING, DEFECATION, CHILD BIRTH (5740)
MEDIASINUM, DIGESTIVE CYSTS, DUPLICATION, INFANTS, NURSING (0694)
MESENTERIC ARTERY, OCCLUSION (5332)
MICROFLORA, ZOOLOGICAL SPECIES (4001)
MOTILITY, DIAZEPAM, DUODENAL ULCER (6391)
MOTILITY, INFERIOR VENA CAVA (5525)
MOTILITY, METOCLOPRAMID, ALKALI TEST (1659)
MOTILITY, MYENTERIC PLEXUS (3130), (4634)
MOTILITY, POSTOPERATIVE, MORPHINE, PETHIDINE, MAN (3701)*
MOTILITY, TRIGLYCERIDE (4799)
MOTILITY, ULCER, STOMACH, DUODENUM (5032)
MOUTH, THROAT, ESOPHAGUS, STOMACH, CANCER, BETEL-CHEWING, NATAL INDIAN (2944)*
MUCOSA, ELECTRON MICROSCOPY (3835)

MUCOSA, SEROSA, VENOUS BLOOD, POTENTIAL DIFFERENCE, SKIN-MUCOSA (3704)•
MUCUS, FUNCTION, COMPOSITION (7803)
MYOCARDIAL INFARCTION, ULCER, NECROSIS (1052)
MYOGRAPHY, LAPAROSCOPY, MAN (8578)
NEWCASTLE DISEASE VIRUS, LOCAL IMMUNITY , CHICKEN (0924)•
NON-LIVER DISEASES, GASTRIC CARCINOMA, LIVER MORPHOLOGY (8538)
OCCULT BLEEDING, CAUSE (3724)
PARASITES, NEMATODE (6259)
PARASITES, VIETNAMESE APPRENTICES, ERADICATION (3780)
PATHOLOGY, ANTICHOLINERGIC DRUG (4640)
PATHOLOGY, GELUSIL-LAC (4639)
PATHOLOGY, SULPIRIDE, CLINICAL EXPERIENCE (9221)
PERFORATIONS, ACUTE ABDOMEN, MORTALITY RATE (9241)
PERIARTERITIS NODOSA, INTESTINAL OBSTRUCTION, PERFORATION, INFARCT, SURGERY, COLLAGEN DISEASE (5339)
PERISTALSIS, DROPERIDOL, FENTANYL, ELECTROMYOGRAPHY (6385)
PLASTIC SURGERY, LIPID METABOLISM (1156)
PNEUMATOSIS CYSTOIDES INTESTINALIS, PULMONARY DISEASE, CHRONIC LYMPHOCYTIC LEUKEMIA (1980)
POISON, LIVER, ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITAL (5639)
POLYPOSIS (2989)
POLYPOSIS, JUVENILE, CONGENITAL, SURGERY (6186)
POSTOPERATIVE CARDIAC MANAGEMENT, K (3693)
POSTOPERATIVE ILEUS, ACID-BASE BALANCE, ELECTROLYTES (6948)
POST-RESECTION, ABSORPTION, ANTITUBERCULOUS DRUGS (1899)
PRIMARY LYMPHANGIECTATIC GASTRO ENTEROPATHY, EOSINOPHILIA (7734)
PROTEIN, CATABOLISM, X-RAY, MICE (2486)
PSYCHOGENOUS DISTURBANCE, CONTROLLED TREATMENT (3756)
PSYCHOSOMATIC, SPASM, DIARRHEA (6204)
PSYCHOSOMATIC CONFLICTUAL FACTOR, PATHOLOGY (2958)
PSYCHOSOMATIC DISORDER (4625)
RADIOGRAPHY, BARIUM SULFATE CONTRAST MEDIA, PHYSICOCHEMICAL EVALUATION (8726)
RADIOLOGY, BRAIN TUMOR, PERISTALSIS, POSTOPERATIVE (2965)
RADIOLOGY, CONTRAST MEDIA (3286), (6527)
RADIOLOGY, NEONATE (4088)
REABSORPTION, DISTRIBUTION, CARDIAC GLYCOSIDES (8566)
SALMONELLOSIS, TREATMENT, CEPHALORIDINE (0692)
SAMPLING OF CONTENT, REMOTE CONTROL PILLS, DIAGNOSTIC PROCEDURE (8731)
SCHISTOSOMIASIS, EMETIC, VEHICLE (1555)
SPONTANEOUS TUMORS, LESIONS, UNTREATED C57BL MICE (1594)
STOMACH, SMALL INTESTINE, LARGE INTESTINE, HISTOCHEMISTRY, ENZYMES, CANCER, MUCOSA (0014)•
SURGERY, ADVANCES (5801)
SURGERY, EMERGENCY, NEONATE (4602)
SURGERY, NEONATE (6958)
SURGERY, SUTURING APPARATUS (3731)
THERAPY, DIGESTIVE DRESSING, ATAPULGITE (8134)
THERAPY, GASTROPULGITE (8467)
TOXOPLASMA GONDI, CIRCULATION, RESISTANCE (8488)
TRANSPORT, METABOLISM, RATE CONSTANTS (6374)
TRICHOCEPHALIASIS, DIAGNOSIS, COPROLOGIC TEST, SARDINIA (2239)
TUMORS, CARCINOID ANTIGEN, HUMAN, IN VITRO (3801)•
TYPHOID FEVER, PARATYPHOID, ANTIBIOTICS, ELECTROLYTES (5333)
ULCERATION, GASTRIC MUCOSA, PERFORATION, POTASSIUM CHLORIDE (4984)
UPPER, FLUID LOSS, ELECTROLYTE DEPLETION, MEASUREMENTS (8868)
UPPER, HEMORRHAGE, CHRONIC PEPTIC ULCER, DIAGNOSIS, TREATMENT (2608)
UPPER, LESIONS (8075)
UPPER, THERAPY, GASTROPULGITE (8457)
URINARY EXCRETION, 5-HYDROXYINDOLYLACETIC ACID, DIGESTIVE DISEASE (3755)

GASTROJEJUNOSTOMY
CARCINOMA, GASTRIC STUMP, DUODENAL ULCER (0288)
DIARRHEA, VAGOTOMY, PEPTIC ULCER, PYLOROPLASTY (2642)
PYLORUS, STENOSIS, RADIOLOGY, METHOCLOPRAMIDE (6568)
VAGOTOMY, LONG TERM CLINICAL AND METABOLIC EFFECTS (1069)

GASTROPHOTOGRAPHY
DIRECT VISION, CARCINOMA, SMEAR CYTOLOGY (6571)
FIBREGASTROSCOPY, OLYMPUS GTF-A (4029)
GASTROSCOPY, BIOPSY, GASTRITIS, CARCINOMA (0227)
INDICATIONS, BLIND TECHNIQUE (4067)
MUCOSA, FIBERSCOPE (6537)
TECHNIQUE, PYLORUS, SERIAL FILMS (6549)

GASTROPLEGIA
SURGERY, HIATAL HERNIA, TREATMENT (1066)
VAGOTOMY, TREATMENT (1143)

GASTROSCOPY
ASPIRIN, SALICYLATE EFFECTS (0971)
BENIGN LESIONS, LAPAROTOMY, DIAGNOSIS (8709)•
BIOPSY, NEW APPARATUS (0466)
DIAGNOSIS, GASTRIC CARCINOMA, FIBEROPTIC ENDOSCOPY, DIRECT VISION CYTOLOGY (0293)
EMERGENCY, INDICATION, HEMORRHAGE (4047)
GASTRIC BIOPSY, GASTRECTOMY, DUMPING SYNDROME (7369)
GASTRIC LEIOMYOSARCOMA, CELIAC ANGIOGRAM, SURGERY (8837)

- GASTRITIS, ULCER, TUMOR, GASTRECTOMY (2534)
- GASTROCAMERA (3303)
- GASTROINTESTINAL BLEEDING (7224)
- GASTROPHOTOGRAPHY, BIOPSY, GASTRITIS CARCINOMA (0227)
- HEMORRHAGE, UPPER GASTROINTESTINAL TRACT, DIAGNOSIS (0968)
- MULTIPLE GASTRIC ULCERS, LEUKEMIA (8138)
- OLYMPUS GTF-A, GASTROCAMERA (4029)
- PEPTIC ULCER, GASTRECTOMY, CONTRAINDICATIONS (8045)
- PREPYLORIC ULCERIFORM CANCER (0319)
- RANDOM CYTOLOGIC WASHING, INTRAGASTRIC BRUSHING (8027)

GASTROSTOMY
- ACUTE GASTRECTASIA, DIAGNOSIS (8124)
- CYSTO-, HEMORRHAGE, PANCREAS (4341)
- FEEDING, SALIVA, COMPOSITION, ESOPHAGEAL BURNS, DENTAL PROBLEMS (0300)
- FOREIGN BODY SYNDROME, GASTROSCOPIC FINDINGS, CLINICAL CONSIDERATIONS (3361)
- NEWBORN, DUODENAL OCCLUSION, ANNULAR PANCREAS (6640)
- OPENING TREATMENT, TECHNIQUE (8864)
- PEDIATRICS, ENTEROSTOMY, SURGERY (1074)
- SURGERY, MAN (1086)
- TUBE, UNANCHORED, GASTRIC DECOMPRESSION (2612)

GAUCHER'S DISEASE
- B-GLUCOSIDASE ACTIVITY (4440)

GELATIN DISEASE
- APPENDIX, PERITONEUM (4277)

GENETICS
- AUTOSOMAL RECESSIVE, WILSON'S DISEASE, LIVER METABOLISM (6811)
- BLOOD GROUPS, VIRAL HEPATITIS, HEMOGLOBIN A2, JAUNDICE (5260)
- CHROMOSOME ABERRATIONS, CYSTIC FIBROSIS, DERMATOGLYPHICS, DYSPLASIA (5238)
- CONGENITAL PYLORIC STENOSIS (1893)
- CROHN'S DISEASE, REGIONAL ILEITIS (3436)*
- CYSTIC FIBROSIS, PANCREAS (6748)
- LIVER GROWTH, CASTRATION, HEPATOMA (7908)*
- PEPTIC ULCER, PATHOGENESIS (7399)
- RADIATION, CHROMOSOMAL ABERRATIONS ULCERATIVE COLITIS (3509)*
- RIBONUCLEIC ACID, LIVER CELLS, RAT (1602)

GENITOURINARY TRACT
- ACUTE RENAL FAILURE, BILIARY TRACT SURGERY, JAUNDICE (7657)
- COLON, RECTUM, OBSTRUCTION (4902)
- KIDNEY, EDTA-MED, PANCREAS, BLOOD SUGAR, LIVER (5641)
- KIDNEY, ENZYME, LIVER, AMPHIBIAN (4845)
- KIDNEY, FUNCTION, CIRRHOSIS, RENIN ACTIVITY, CATECHOLAMINE (6126)
- KIDNEY, OSTEOMALACIA, CADONIUM, ITAI ITAI DISEASE (5388)
- KIDNEY, TRANSPLANT, HEPATORENAL SYNDROME (6035)
- MALFORMATION, DYSPLASIA, ABDOMINAL MUSCLES (1513)
- NEPHROTIC SYNDROME, FATTY KIDNEY, FATTY LIVER (6892)
- RENAL ACTIVITY, HEPATIC ACTIVITY, GLUCURONYLTRANSFERASE, URANYL NITRATE, ENZYMOLOGY, RAT (5225)
- RENAL DISEASE, LIVER, CIRRHOSIS, RESPIRATORY ALKALOSIS, HYPERAMMONIEMIA, HYPONATREMIA (5292)
- RENAL DISEASE, PERITONEAL DIALYSIS, TRANSPLANTATION, HEMODIALYSIS, CATHETERS, INFLAMMATION, CARDIOVASCULAR DISTURBANCES (6165)
- RENAL FAILURE, CIRRHOSIS, HEPATIC COMA (6891)
- RENAL FAILURE, CIRRHOSIS, PORTAL HYPERTENSION (6898)
- RENAL FUNCTION, CIRRHOSIS (6127)
- RENAL INSUFFICIENCY, LIVER INVOLVEMENT, CHOLANGITIS (6042)
- RENAL INVOLVEMENT, INFECTIOUS MONONUCLEOSIS, HEPATIC INVOLVEMENT (6999)
- RENAL RUBULI, PORPHYRIN DEPOSITS, FLUORESCENCE MICROSCOPY, HEPATIC PORPHYRIA, ABSORPTION, SECRETION (5216)
- TRIGONE, SURGERY, RECTUM, ANASTAMOSIS (4867)
- UREMIA, RENAL FAILURE, INTESTINAL DIALYSIS, ILEAL LOOP, RAT (4777)
- URINE, CECUM, RECTUM, ROADRUNNER (6506)

GERIATRIC
- ACUTE APPENDICITIS, SURGERY (1996)
- APPENDICITIS (4295)
- GALLBLADDER, LITHIASIS, SURGERY (1484)
- GASTRIC DISORDERS, GASTRIC CAMERA (4046)
- SURGERY, BILIARY TRACT, PREOPERATIVE (1490)
- SURGERY, GASTRIC (1059)

GIARDIASIS
- CHLORHYDROXYQUINOLIN, ANTIHELMINTIC, SMALL INTESTINE (1548)
- CHLOROQUINE, DUODENITIS, MAN (1097)
- EPIDEMIOLOGY, DIAGNOSIS, TREATMENT (6261)
- GIARDIA LAMBLIA, TREATMENT, MEPACRINE METRONIDAZOLE, FURAZOLIDINE (3702)*
- MALABSORPTION, KERALA (1554)
- NITRO-IMIDAZOLE DERIVATIVE, TREATMENT MAN (1526)*

GILBERT'S DISEASE
- HYPERBILIRUBINEMIA, HEPATITIS, DIFFERENTIATION (0530)*
- HYPERBILIRUBINEMIA, PATHOGENESIS, BILE DUCT (2832)

GLAND
- ANAL, RABBIT, RNA, EPITHELIUM (6344)
- BRUNNER'S, POLYPOID HARMARTOMA, SURGERY (2607)
- HYPERTHYROIDISM, GASTRIC MUCOSA SECRETION (4181)
- MAMMARY, COLOSTRUM, GLYCOPEPTIDE (3873)

MAMMARY, ENZYMES RELEASE, MUSCLE, LIVER (3844)
MAMMARY, 32P-INCORPORATION, OVARIAN HORMONES (3961)
PAROTID, EXOCRINE PANCREAS, FOOD REDUCTION, DIET (5556)
RETROPERITONEAL, DIAGNOSTIC ERROR, PANCREATIC CYST (3517)
SALIVARY, LARGE, FENESTRATED CAPILLARIES, PARENCHYMA, RABBIT, MOUSE (0706)
THYROID, FUNCTIONAL CHANGES, ANTIBODY, LIVER DISEASE (4499)
THYROID, IODOTYROSINE DIODASE, LIVER (3850)
THYROID, LIVER MITOCHONDRIA (3849)
THYROID, SURGERY, GASTRIC MOTILITY, THYROTOXICOSIS (3385)

GLOBULIN
AC, LEVEL, INFECTIOUS HEPATITIS (3644)
ALPHA 2-(ACUTE PHASE), LIVER, SYNTHESIS, SECRETION (6450)*
ANTILYMPHOCYTIC, IMMUNOLOGY, HEPATITIS (6873)
GAMMA, INFECTIOUS HEPATITIS (1422)
HIGH BLOOD LEVEL, INTESTINAL LYMPHOID HYPERPLASIA (3498)
LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)*

GLUCAGON
ALA-SYNTHETASE INDUCTION, CHICK LIVER (2287)*
CIRCULATION, SUPERIOR MESENTERIC CIRCULATION, LIVER EXCLUSION (2483)*
EXOCRINE PANCREAS, SECRETION (3156)*
GASTRIC ACID SECRETION, PENTAGASTRIN, PEPTIC ULCER (0790)*
HYPERGLYCEMIA, LIVER GLYCOGEN DISEASE, GLUCOSE-6-PHOSPHATE DEFICIENCY (4370)*
INACTIVATION, DEGRADATION, ENZYME, LIVER (0876)*
INFUSION, PLASMA FATTY ACID, TRIGLYCERIDE, BLOOD SUGAR, LIVER, LIPID (3967)
INSULIN, LIVER, HISTONE, PHOSPHORYLATION (2421)*
LIVER, BLOOD FLOW, DOG (1790)*
RAT LIVER, LYSOSOMAL ENZYMES, TRIGLYCERIDE (8509)*

GLUCOCORTICOID
CORTISOL, REGULATION, ENZYME, LIVER, RAT (1591)
GLUCONEOGENESIS, ACETYL COA, ENZYME, STARVATION (6422)*
INTERMEDIARY METABOLISM, LIVER, COW (3204)
LIVER DISEASE, HEPATITIS, CIRRHOSIS (0615)
PREDNISONE, HYPOGAMMAGLOBULINEMIA, PERNICIOUS ANEMIA (8465)
PREDNISONE, THERAPY, CHOLESTASIS, VIRAL HEPATITIS (9124)
THERAPY, CELIAC DISEASE, REGIONAL ENTERITIS, ULCERATIVE COLITIS (0702)
ULCERATIVE COLITIS, TREATMENT (3511)

GLUCOLYSIS
THROMBOGENIC DIET, PHOSPHOFRUCTOKINASE ACTIVITY (2405)*

GLUCONEOGENESIS
GLUCOCORTICOID, INTERMEDIARY METABOLISM, LIVER, COW (3204)
GLYCOGENESIS, GLYCOLYSIS, FACTORS, LIVER (3199)
INHIBITION, PENT-4-ENOIC ACID, METABOLITE CONCENTRATION, PERFUSED LIVER, RAT (2446)
LIVER, AMINO ACID (0893)
LIVER, GLYCOLYSIS, DIABETES, MAN, RAT (6794)
LIVER, INSULIN, FREE FATTY ACID, FASTING, IN VITRO, RAT (7010)
LIVER, SUBSTRATE ROLE, STARVATION, MAN (1719)*
LIVER, TRANSAMINASES, AGE, CHICKEN, GUINEA PIG (6462)
PERFUSED LIVER, ACETYLCHOLINE, RAT (8665)
PERFUSED LIVER, HYPOPHYSECTOMY, STIMULATION (9672)
STARVATION, GLUCOCORTICOIDS, BLOOD SUGAR, GLYCOGEN (6422)*
VITAMIN A, GLUCOSE, BLOOD, GLYCOGEN, LIVER (1612)

GLUCOSE
AMYLASE BLOOD TEST STUDY, PANCREAS (3309)
BLOOD, GLYCOGEN, LIVER, VITAMIN A (1612)
BLOOD, TOLERANCE TESTS, PLASMA INSULIN, GASTRIC SURGERY (1028)
ETHANOL, LIVER, ADRENAL CORTEX (2409)*
ETHIONINE TOXICITY, LIVER, ULTRASTRUCTURE (8330)
GALACTOSE, MALABSORPTION, DIAGNOSIS (4253)
GALACTOSE MALABSORPTION, RENAL GLUCOSURIA (3453)
HEAT DAMAGE, PROTEIN, LYSINE, ABSORPTION (7066)*
INSULIN, PANCREATIC DISEASE, EFFECT ON MAN (1333)
INTESTINAL, ANTIMITOTIC ACTIVITY (3831)
MALABSORPTION, GALACTOSE, CONGENITAL (4258)
METABOLISM, LIVER, BRAIN, BLOOD, IN-FLOW, OUT-FLOW, NEONATE (2458)
MICROSOME, LIVER, ENZYME (3837)
OXIDATION, METABOLISM, CIRRHOSIS (4508)
PERFUSION CHOLANGIOCHOLECYSTOGRAPHY, SORBITOL (4023)
REPRESSION, LIVER, HORMONE, RAT (1735)
3-O-METHYL GLUCOSE, TRANSPORT, JEJUNUM, BILE SALTS, RAT (3169)*
TOLERANCE, CIRRHOSIS, HEPATIC COMA (6882)*
TOLERANCE TEST, JEJUNO-ILEOSTOMY, SERUM INSULIN (3419)*
2-DEOXY-D-, PHOSPHORYLATION, TRANSPORT, ANUS MUSCLE, ANAEROBIOSIS (3872)

  - UTILIZATION, SMALL INTESTINE, OXYGEN UPTAKE, JEJUNUM (1587)
- GLUCOSE TOLERANCE
  - HEPATITIS (0535)•
- GLUCOSIDE
  - STEROID, SYNTHESIS, TRANSFERASE, LIVER, MICROSOME, RABBIT (2447)
- GLUTAMATE
  - OXIDATION, MITOCHONDRIA, ASCITES HEPATOMA (2079)
- GLUTEN
  - SENSITIVITY, COELIAC DISEASE, SMALL INTESTINE, MALABSORPTION (1961)•
  - WHEAT, RYE, CELIAC DISEASE, CHILDREN (2691)
- GLYCEROL
  - INCORPORATION, PHOSPHOLIPID, LIVER SLICE, RAT (2851)
- GLYCOGEN
  - AMYLOPECTINOSIS, ULTRASTRUCTURE (9059)
  - DIURNAL VARIATION, AD LIBITUM FOOD, SINGLE DAILY MEAL, LIVER, RAT (3207)
  - LIVER, HEPATOCYTE, ELECTRON MICROSCOPY (3047)
  - LIVER, LOBE LIGATION, CIRCULATION, RAT (1600)
  - LIVER, MORBILLI, CHILDREN (4425)
  - LIVER, PROPYLENE GLYCOL, METABOLISM (2452)
  - STORAGE, HEPATOMEGALY, BLOOD (4365)•
  - SYNTHESIS, FETAL LIVER, HYDROCORTISOME (6483)
- GLYCOGENESIS
  - ALPHA-METHYLTRYPTOPHAN, PROTEIN SYNTHESIS INHIBITION (8645)
  - ENZYME, METABOLISM (3062)
  - GLUCOCONEOGENESIS AND GLYCOLOSIS, FACTORS, LIVER (3199)
  - GLYCOGEN-CORTICOSTEROID METABOLISM, FETAL, NEWBORN, LIVER (2429)
  - RATE, COLONIC TUMORS, BENIGN, MALIGNANT (0469)
- GLYCOGENOLYSIS
  - LIVER, AEROBIC, ANAEROBIC PREINCUBATION (1689)
- GLYCOLYSIS
  - HEXOKINASE REACTION, GLYCOLYTIC SEQUENCE, ASCITES TUMOR CELLS (0077)
  - LIVER, GLUCONEOGENESIS, DIABETES, MAN, RAT (6794)
  - LIVER, REGULATION, KEY ENZYMES (8663)
- GLYCOPROTEIN
  - AMINO NUCLEOSIDE, POLYSOME, LIVER, RAT (1592)
  - ILLUMINATION, ULTRASTRUCTURE, DIGESTIVE CECA (0025)
  - SERUM, LIVER INJURY, INFLAMMATION (4465)
  - SULPHUR CONTAINING, GASTRIC JUICE, GLC DETERMINATION, SUGAR, D-GLUCOSEAMINE, D-GALACTOSEAMINE (2388)
- GLYCOSIDE
  - DIGOXIN, SMALL INTESTINE, ABSORPTION, RAT (0767)•
- GOBLET CELL
  - JEJUNAL STRUCTURE, SCANNING ELECTRON MICROSCOPY, VILLI, EPITHELIAL CELL (1548)•
  - SMALL INTESTINE, PANETH CELL (3031)•
- GOLD COLLOID
  - DISTRIBUTION, HEPATIC CELL (1596)
  - KUPFFER CELLS, MILK, ABSORPTION, IMMUNOLOGIC RESPONSE (6371)
- GONORRHEA
  - PERIHEPATITIS, CHOLECYSTITIS, MAN (1410)
- GRAFT
  - COLON, REVASCULARIZATION, ESOPHAGOPLASTICS (1016)
  - HOST REACTION, LIVER INFILTRATION, DONOR PRESENSITIZATION (3190)
- GRANULOMA
  - AMEBIC, CARCINOMA, RECTUM, MAN (0474)
  - COLITIS, COLON (1983)
  - COLITIS, COLON, DIAGNOSIS (2757)
  - COLITIS, MUCOSA SECRETION (4316)
  - COLITIS, ULCERATIVE, CROHN'S (6564)
  - EOSINOPHILIC, STOMACH (2603)
  - EPITHELIOID CELL, LIPOGRANULOMA, LIVER (6776)•
  - FORMATION, BARIUM ENEMA, COMPLICATION (2508)•
  - HEPATITIS, HISTOPLASMOSIS (5237)
  - INFLAMMATORY, CECUM, DIAGNOSIS (0475)
  - LIVER, ABSCESS, ANGIOGRAPHY (3560)
  - LYMPHOGRANULOMATOSIS, GASTROINTESTINAL TRACT (6192)
  - MALIGNANT, SMALL INTESTINE (4224)
  - PARASITE, COLON, CECUM, SCHISTOSOMIASIS (2256)•
  - PLASMA CELL, STOMACH (3378)
  - REACTIONS, ALIMENTARY SYSTEM (4599)
  - SMALL INTESTINE, SPRUE, JEJUNAL BIOPSY (5052)
- GRANULOMATOSIS
  - ALLERGIC, MASSIVE GASTRIC INVOLVEMENT (3347)
  - LIVER, HISTOPATHOLOGY, CLINICAL FEATURES (9105)
- GRANULOMATOUS COLITIS
  - CROHN'S DISEASE, LARGE INTESTINE (7504)
  - CROHN'S DISEASE, ULCERATIVE COLITIS, COMPARISON (2763)•
- GRANULOMATOUS DISEASE
  - CHRONIC, ESOPHAGUS (2760)
- GROWTH
  - BETA-GLUCURONIDASE, LIVER, TADPOLE (3067)
  - FETAL LIVER, PLACENTA, IRRADIATION, RNA, PROTEIN, RAT (5166)
- GROWTH HORMONE
  - GASTRECTOMY, BLOOD SUGAR, FREE FATTY ACID (7322)•
  - HEPATITIS (0535)•
  - LIVER, DRUG, METABOLISM (2402)•
- GUT
  - RADIOGRAPHIC APPEARANCE, RADIOPHONIC EMISSION, CHILDHOOD (2988)

- HALOTHANE
  - ANESTHESIA, RADIUM TREATMENT, HEPATOCELLULAR JAUNDICE (6833)•
  - LIVER, HEPATITIS, SURGERY (3612)
  - LIVER, MITOCHONDRIA, ELECTRON TRANS-

  - PORT, OXIDATIVE PHOSPHORYLATION, RAT (1707)*
  - LIVER DAMAGE, SURGERY (3593)*
- HEART
  - ACUTE PANCREATITIS, THROMBOSIS, ENZYMATIC TOXEMIA (2789)
  - CARDIAC INSUFFICIENCY, LDH, MYOCARDIAL INFARCT, CREATINE PHOSPHOKINASE SGOT (5662)
  - COMPLICATIONS, PANCREATITIS (3849)
  - CONGENITAL DISEASE, SHOCK, VISCERAL LESION (4598)
  - DISEASE, GASTROINTESINAL TRACT (6187)
  - DISEASE, LIVER PUNCTURE (4512)
  - ELECTROCARDIOGRAPHIC CHANGES, VIRAL HEPATITIS, SERUM BILIRUBIN, TRANSAMINASES (1431)
  - INFARCT, ESOPHAGUS, STOMACH, ANEURYSM, FUNCTIONAL DISORDER, ABDOMINAL PAIN, DIFFUSE ARTERIOSLEROSIS, EMOTIONAL FACTORS (4967)
  - LIVER DISEASE, DISSEMINATED HEPATIC CELL NECROSIS, LOCALIZED HEPATIC CELL NECROSIS, CONGENITAL DISEASE, INFANT MORTALITY (4366)*
  - MYOCARDIAL INFARCTION, LIVER FAILURE (6809)
  - MYOCARDIUM, GASTRIC, ULCER PERFORATION (5039)
  - POSTOPERATIVE MANAGEMENT, K, BILIARY SYSTEM (3683)
  - STOMACH, CARDIOVASCULAR DISEASE (3384)
  - SURGERY, ENZYME ACTIVITY, LIVER DAMAGE (4070)
  - SURGERY, JAUNDICE, ANESTHESIA (4390)
  - SURGERY, LIVER INJURY (4470)
  - TUBEROSITARY LESIONS, ANGIOGRAPHY (4055)
  - ULTRASTRUCTURE, EXHAUSTIVE EXERCISE, RAT (3068)
- HEART DISEASE
  - CONGENITAL, INFANTILE COARCTATION (4363)*
- HEARTBURN
  - REGURGITATION, GALLBLADDER DISEASE, CHOLECYSTECTOMY (1462)
- HELMINITH
  - EXPULSION, COMPOUND-48/80, MECHANISM (4467)
  - SYPHACIA OBVELATA, TETRACHLOROTHIOPHENE, PESTICIDE, MICE (5408)
- HELMINTHIASIS
  - INTESTINE (4673)
  - TREATMENT, ASCARIS, ENZYME (4669)
- HELMINTHOLOGY
  - HOOKWORM INFECTION, SCHISTOSOMIASIS (0717)
  - MANSON'S SCHISTOSOMIASIS, INTESTINE, FECES (3006)
  - SCHISTOSOMA, EGG, COUNTING, SEDIMENTATION, FECES (2243)
- HEMAGGLUTINATION
  - AMEBIASIS, DIAGNOSIS, INTESTINAL TRACT (1532)
  - PHYTOHEMAGGLUTININS, DNA, RNA (6254)*
- HEMATEMESIS
  - EMERGENCY ANGIOGRAPHY, LIVER, CIRRHOSIS, PEPTIC ULCER (8735)
  - LIVER BIOPSY PUNCTURE, COMMON BILE DUCT, DUODENUM, ATELECTASIS (2518)
  - STOMACH (0314)
  - ULCER, SURGERY, STOMACH (3298)
- HEMATOBILIA
  - TRAUMATISM, LIVER (1373)
- HEMATOIDIN
  - OBSTRUCTION, ICTERUS, BILIRUBIN (3685)
- HEMATOLOGY
  - MALNUTRITION, PROTEIN, METABOLISM (4623)
- HEMATOMA
  - DUODENAL, INTRAMURAL, TREATMENT (027
  - INTESTINAL OBSTRUCTION, ANTICOAGULANT (8898)
  - INTRAHEPATIC, SURGERY (3582)
  - INTRAMURAL, ESOPHAGUS (4110)
  - JEJUNAL, TRAUMA, FELSON'S SIGN (4217)
  - LUNG, GASTRIC TUMOR, CHILD (4147)
  - SPONTANEOUS, ABDOMEN, VITAMIN K (4617
  - SUBSCAPULAR, HEPATIC, TOXEMIA OF PREGNANCY (1362)
- HEMATOPOIESIS
  - BONE MARROW, HEPATOSPLENIC SYNDROME HEPATITIS, CHILDREN (4629)
- HEME
  - CYTOCHROME, LOSS, LIVER, MICROSOME, PORPHYROGENIC AGENT (3041)
  - LIVER, MICROSOMES, INCORPORATION, PROTEIN SYNTHESIS, RAT (0140)
- HEMICOLECTOMY
  - DUODENUM LESIONS, DUODENAL-COLIC FISTULA (1237)
  - MEGACOLON, MENTAL PATIENTS, DILATATI (6723)
- HEMIGASTRECTOMY
  - VAGOTOMY, DUMPING SYNDROME, ULCER (7353)
- HEMOBILIA
  - CHOLECYSTITIS, HEMOCHOLECYST (3665)
  - FISTULA, HEPATIC ARTERY, PORTAL VEIN (3586)
  - HEMORRHAGE, LIVER RESECTION (1494)
  - LIVER, NECROSIS, HALOTHANE, MAN (139
- HEMOCHOLECYST
  - HEMOBILIA, CHOLECYSTITIS (3665)
- HEMOCHROMATOSIS
  - CALCIUM MALABSORPTION, HYPOPARATHYROIDISM (2806)*
  - CIRRHOSIS, IRON METABOLISM (6000)
  - ENDOCRINE ABNORMALITIES (2151)
  - SARCOMA, OSTEOGENIC, LIVER (2839)
- HEMODIALYSIS
  - ACUTE YELLOW ATROPHY, VIRAL HEPATITIS, RENAL DISEASE (2107)*
- HEMODYNAMICS
  - ACUTE PANCREATITIS, TRYPSIN, SHOCK (7515)
  - CIRRHOSIS, MAN (0643)
  - DISTENSION, STOMACH, INTESTINE, ABDOMEN (6510)
  - DUODENOJEJUNAL ANGLE, OBSTRUCTION, DOG (0359)*
  - ESOPHAGEAL VARICES, BLEEDING, SURGER (1006)
  - HEPATIC, ALCOHOL, OXANOLONE, PHENOBARBITAL (6768)*

HEPATIC, PORTAL, LIVER, SPLENECTOMY, POSTCAVAL ANASTOMOSIS (1448)
ILEUM, OBSTRUCTION, DOG (0360)*
LIVER, PORTAL CIRCULATION, DIAGNOSIS LIVER DISEASE, MAN, DOG (0145)
PANCREAS, ALLOGRAFT, DOG (0931)
SMALL INTESTINE, AUTOTRANSPLANT, HOMOTRANSPLANT, DOG (0174)
SPLENIC BLOOD FLOW, 131 IMAA, 85 KR, ABDOMINAL ORGANS (3249)
SPLENORENAL SHUNT, ESOPHAGEAL VARICES SURGERY (1005)

HEMOGLOBIN
A2, VIRAL HEPATITIS, INFECTION, SUSCEPTIBILITY (8356)
H-DISEASE, LIVER (8311)
PEPSIN, INHIBITION (7090)*
UPTAKE, HEPATOCYTES, BREAKDOWN, LYSOSOMES, RAT (3115)

HEMOLYSIS
LIVER, SPLEEN, SUBCELLULAR FRACTION (0896)

HEMOPHILIA
LIVER, TRAUMA, HEMATOMA HYPERBILIRUBINEMIA, HYPERAZOTEMIA (0591)

HEMORRHAGE
ABDOMEN, APOPLEXY (5387)
ABDOMINAL SURGERY, PERITONITIS, CARDIAC INSUFFICIENCY (5337)
ABSCESS, AEROMONAS HYDROPHILA, UNCOOKED TOURISTS (6984)
ACUTE, DIAGNOSIS, TREATMENT (1084)
ACUTE, INTESTINE, TREATMENT (8474)
ACUTE ABDOMEN, LEUCOCYTOSIS, METABOLIC DISORDERS (9239)
ACUTE LEUKEMIA, LIVER, BIOPSY, SHOCK, MENGHINI (5344)
ACUTE PANCREATITIS, PERITONEAL CAVITY, DRAINAGE, NECROSIS (2790)
ACUTE ULCER, STOMACH, INTESTINE (6193)
ANGIOGRAPHY, GASTROINTESTINAL TRACT (3285)
BENIGN TUMOR, STOMACH, MYOID, GASTROSCOPY, POLYP (5017)
CANCER, ULCER, STOMACH, DUODENUM (3413)
CANCER, ULCER, SURGERY (5372)
CHOLECYSTITIS, CHOLELITHIASIS, CHOLECYSTODUODENAL FISTULA (3668)
CHOLECYSTODUODENAL FISTULA (1058)
COLON, SMALL INTESTINE, RECTUM, DIVERTICULI, ARTERIOGRAPHY (5351)
CONTROL, LIVER DISEASE DIATHESIS (4412)
DIATHESIS, ANGIOPATHY, ALCOHOLISM (4455)
DIAGNOSIS, ARTERIOGRAPHY (0966)
DIAGNOSIS, ESOPHAGUS, ULCER (2982)
DIGESTIVE, EROSION, GASTROINTESTINAL ARTERY, PANCREAS, PSEUDOCYST (0503)
DIGESTIVE TRACT, ANGIOGRAPHY (4588)
DIGESTIVE TRACT, GASTROSCOPY (4047)
DIGESTIVE TRACT, PATHOLOGY, RADIOLOGY (4589)
DIVERTICULOSIS, COLON (1255)
DRUG EFFECT, SECRETION, ULCER, GASTRODUODENITIS (2634)
DUODENUM, STOMACH, VAGOTOMY, DRAINAGE (1030)
ELECTRICAL POTENTIAL CHANGES, ACUTE SURGICAL CONDITIONS, LIVER, KIDNEY, RABBIT (0816)*
ENTERITIS, GASTROINTESTINAL TRACT (5070)
EROSION, STOMACH, ESOPHAGUS (6635)
ESOPHAGEAL VARICES, CIRRHOSIS, SURGERY (7727)
ESOPHAGEAL VARICES, DIAGNOSIS (0990)
ESOPHAGEAL VARICES, ENDOSCOPY, SCLEROSIS (4960)
ESOPHAGEAL VARICES, LYMPHO-VENOUS ANASTOMOSIS (4125)
ESOPHAGEAL VARICES, MANAGEMENT (6582)
ESOPHAGEAL VARICES, POLYCYSTIC KIDNEY DISEASE, CONGENITAL HEPATIC FIBROSIS, CHILD (0266)
ESOPHAGEAL VARICES, PORTAL HYPERTENSION, GASTRODUODENAL ULCERS, ALCOHOLIC CIRRHOSIS, HEMODYNAMICS (5286)
ESOPHAGEAL VARICES, PROGNOSIS, HEPATIC COMA, CARCINOMA, CIRRHOSIS, BILIRUBIN (5342)
ESOPHAGEAL VARICES, STOMACH VARICES, CIRRHOSIS (7639)
ESOPHAGEAL VARICES, WEATHER CONDITIONS CIRRHOSIS (4961)
ESOPHAGEAL VARIX, WALKER OPERATION, ANASTOMOSIS (2536)
ESOPHAGOGASTRIC, VISCERAL REFRIGERATION (4585)
ESOPHAGOGASTROINTESTINAL, CAUSES, DIAGNOSIS, TREATMENT, CHILDREN (0256)
ESOPHAGUS, GASTRIC, ENDOSCOPY, RADIOLOGY (2514)
ESOPHAGUS, STOMACH, PORTAL HYPERTENSION (7648)
ESOPHAGUS, VARICES, SENGSTAKEN-BLAKEMORE TUBE (4973)*
GASTRIC, ASPIRIN (7336)
GASTRIC, CYTOSCOPIC CONTROL (5791)
GASTRIC, DUODENAL, LIVER CIRRHOSIS (6889)
GASTRIC, ULCER, STRESS, POST-SURGICAL (2632)*
GASTRIC EROSIONS, GASTRITIS, DIAGNOSIS (8742)
GASTRIC RESECTION, SURGERY, ULCER (2598)
GASTRIC ULCER, HILUS LIENIS, SURGERY (2637)
GASTRITIS, STOMACH RESECTION (4166)
GASTRODUODENAL, CRYPTOGENIC, HYPERTENSION (4582)
GASTRODUODENAL, EMERGENCY SURGERY (4213)
GASTRODUODENAL, GASTRIC PACKING (6649)
GASTRODUODENAL, REANIMATION, RESPIRATORY INSUFFICIENCY (1054)
GASTRODUODENAL, SURGERY (1053)
GASTRODUODENAL, SURGERY, ULCER (3288)
GASTRODUODENAL, SURGERY, WILSON'S DISEASE, JAUNDICE, LEUCOPENIA, THROMBOPENIA (5200)
GASTRODUODENAL ARTERY, PERFORATION, STENOSIS, MALIGNANCY, PROTEINASE INHIBITION, ULCER (5034)

GASTRODUODENAL ORIGIN, ULCERATION, BLOOD TRANSFUSION, PANCREATITIS (4994)
GASTRODUODENAL ULCER, ACUTE COMPLICATIONS, PERFORATION, TREATMENT (0348)
GASTRODUODENAL ULCER, STOMACH, BURNS, PYLOROPLASTY (5347)
GASTROINTESTINAL, ANGIOGRAPHY (7752)
GASTROINTESTINAL, ASPIRIN, SALICYLIC ACID (1071)
GASTROINTESTINAL, CARCINOMA, JEJUNUM (3426)
GASTROINTESTINAL, CIRRHOSIS, ULCER, HEMANGIOMA, ESOPHAGEAL VARICES, ESOPHAGOSCOPY, ENDOSCOPY (5368)
GASTROINTESTINAL, DIAGNOSIS, TREATMENT (8458)
GASTROINTESTINAL, DIFFERENTIAL DIAGNOSIS, GASTRIC ULCER (7291)
GASTROINTESTINAL, ENDOSCOPY, RADIOLOGY (4924)
GASTROINTESTINAL, HEPATITIS, PANCYTOPENIA, APLASTIC ANEMIA (5266)
GASTROINTESTINAL, HEREDITARY TELANGIECTASIA, RESECTION (6956)
GASTROINTESTINAL, HERPES SIMPLEX HEPATITIS, JAUNDICE, EROSIVE GASTRITIS (0612)
GASTROINTESTINAL, HIATUS HERNIA (3728)
GASTROINTESTINAL, PANCREATIC PSEUDOCYST, HEMOBILIA (7508)
GASTROINTESTINAL, RESPIRATORY DISTRESS ANATOMOPATHOLOGY, THERAPY (9228)
GASTROINTESTINAL, SURGERY, ETIOPATHOGENESIS, TREATMENT (0693)
GASTROINTESTINAL, SURGICAL TREATMENT (0331)
GASTROINTESTINAL, TOLAZOLINE (3720)
GASTROINTESTINAL, TREATMENT (9234)
GASTROINTESTINAL, UPPER, CHRONIC PEPTIC ULCER, DIAGNOSIS, TREATMENT (2608)
GASTROINTESTINAL TRACT, ASPIRIN (6993)
GASTROINTESTINAL TRACT, CELIAC OCCLUSION, DUODENAL ULCER, ANGIOGRAPHY, LOCALIZATION, DIAGNOSIS (5674)
GASTROINTESTINAL TRACT, DIAGNOSIS (7245)
GASTROINTESTINAL TRACT, MALLORY-WEISS SYNDROME, PANCREATIC CARCINOMA, LYMPHOSARCOMA (6238)
GASTROINTESTINAL TRACT, MELENA, TELEANGIECTASIA (5386)
GASTROINTESTINAL TRACT, NEONATE, MILK (6971)
GASTROSCOPY, DIAGNOSIS, ULCER (4954)
HEMOBILIA, LIVER RESECTION (1494)
HEPATIC ARTERY, ANEURYSM (5395)
HEPATIC ARTERY, RUPTURED ANEURYSM (9209)
HEPATIC COMA, FLAPPING TREMOR, CORTICAL LESIONS, PYRAMIDAL SIGNS, AMMONIEMIA (5217)
HEREDITARY TELANGIECTASIS, LESION (4030)
INTESTINAL, INFANTS, CHILDREN, ESOPHAGEAL VARICES, STOMACH RUPTURE, ANGIOPATHY, HYPOPROTHROMBINEMIA, LIVER CIRRHOSIS (6222)
INTESTINAL, LIVER DISEASE, THORACIC DUCT (4501)
INTESTINE, ANTICOAGULANT, CONSERVATIVE MANAGEMENT (9478)
INTESTINE, CHILDREN (4622)
INTESTINE, STOMACH, DIGITALIS INTOXICATION (8860)
LIVER, ANGIOPLASTIC SARCOMA, THOROTRAST, DELAYED DAMAGE (5214)
LIVER, HYPERTENSION, SURGERY (4618)
LIVER, PARENCHYMA, COMPRESSION (3585)
LIVER, VENOUS, BALLOON CATHETER (8428)
MALLORY-WEISS SYNDROME, ESOPHAGOGASTRIC JUNCTION (0986)
MASSIVE, CECUM, EROSION (2715)
MASSIVE, CYSTOGASTROSTOMY, PANCREATIC PSEUDOCYST (4341)
MASSIVE, GASTROINTESTINAL TRACT, TREATMENT, DOG (5370)
MASSIVE, PORTOSYSTEMIC SHUNT, LIVER (4515)
MASSIVE GASTROINTESTINAL, ARTERIOGRAPHIC LOCALIZATION (1080)
MECKEL'S DIVERTICULUM, INTESTINE, SURGERY, GASTRIC MUCOSA, SHOCK (5064)
MECKEL'S DIVERTICULUM, PANCREATIC HETEROTOPIA (0145)
OCCULT BLOOD LOSS, ANEMIA, PARTIAL GASTRECTOMY (3351)
OMENTAL HEMANGIOMA, KLIPPEL-TRENAUNAY SYNDROME (7709)
OMPHALOSYSTEMIC BY-PASS, PROSTHESIS, PORTAL HYPERTENSION (1374)
OXYGEN UTILIZATION, PORTAL BLOOD FLOW (7708)
PANCREATIC DUCT, PANCREAS, ANGIOGRAPHY (2017)
PANCREATITIS, ENZYMATIC TOXEMIA, EDEMA, NECROSIS (5154)
PANCREATITIS, TREATMENT, DEXTRAN, PLASMA (4346)*
PELIOSIS, HEPATITIS, LIVER, RADIOTHERAPY (5243)
PERFORATION, GASTRIC ULCER, DUODENAL ULCER, ATYPICAL FORMS (8895)
PERITONEAL, ABDOMINAL TRAUMA, SURGERY, HEMATOMA (4909)
PORTACAVAL SHUNT, CIRRHOSIS (4513)
PORTAL HYPERTENSION, SURGERY, ESOPHAGUS, VARICES (3752)
POST-GASTRECTOMY (9865)
POSTOPERATIVE STRESS ULCERS, DUODENUM, DIAGNOSIS (9883)
POSTSURGICAL, CIRRHOTIC, VARICEAL, VASOACTIVE DRUGS (6804)
PSEUDOCYST, PANCREATITIS (5976)
PYLORUS, ANTRUM, HETEROTOPIC PANCREAS (9005)
RADIOGRAPHY, GASTROINTESTINAL TRACT, UPPER (0980)
RECTOCOLITIS (4299)
RECTOCOLITIS, AZOTHIOPRINE (5106)
RECTOCOLITIS, ULCERATIVE COLITIS, PSYCHIATRY, DIAGNOSIS, THERAPY (5125)

  RECURRENT, GASTROINTESTINAL, HEMOPHILIA, FIBRINOLYSIS (9449)
  SHOCK, LIVER, HISTOLOGY, BIOCHEMISTRY (2090)
  SMALL INTESTINE, COLON, RECTUM (4901)
  SMALL INTESTINE, COLON, RECTUM, RADIOGRAPHY (4900)
  STERCORAL ULCER, CARDIOVASCULAR DISEASE (5906)
  STOMACH, DUODENUM, ULCER (3379)
  STOMACH, DUODENUM, VASOACTIVE AGENTS (8877)
  STOMACH, PEPTIC ULCER, HYPOTHERMIA, HEMOSTATIC DRUGS (5007)
  STOMACH, PSEUDOXANTHOMA ELASTICUM, MAN (1095)
  STOMACH, VAGOTOMY (3349)
  STRESS ULCER, POSTOPERATIVE, STOMACH, DUODENUM (5772)
  STRESS ULCER, VAGOTOMY, PYLOROPLASTY (5835)
  TELANGIECTASIA, ENDOSCOPY (5391)
  ULCER, ANASTOMOTIC, SEPTICEMIA, GRAM NEGATIVE (2644)
  ULCER, DUODENAL, GASTRIC, SURGERY (7702)
  ULCER, DUODENUM, CIRRHOSIS (4038)
  ULCER, PEPTIC, STOMACH (1141)
  ULCER, RECTO-COLITIS, COMPLICATIONS (4309)
  ULCER, SURGERY (4172)
  ULCER, VAGUS, SURGERY (2207)
  ULCERATIVE RECTOCOLITIS, PROGNOSIS, SURGERY, ILEORECTAL ANASTOMOSIS (5123)
  UPPER GASTROINTESTINAL, PERITONEAL COOLING (7718)
  UPPER GASTROINTESTINAL, TREATMENT (0695)
  UPPER GASTROINTESTINAL TRACT, GASTROSCOPY, DIAGNOSIS (0968)
  VARICES, ESOPHAGUS, LIGATURE RESECTION (2570)
  VON RECKLINGHAUSEN'S DISEASE, CHRONIC ANEMIA (6245)
  WEBER-CHRISTIAN PANNICULITIS, INTESTINE, VISCERA (4631)
HEMORRHOID
  ANUS, TREATMENT (1270)
  ETIOLOGY, PATHOGENESIS, THERAPY (8952)
  LIGATURE, INDICATIONS, NODULAR (8959)
  PROMETHAZINE, VITAMIN C, ENZYMES (1284)
  RECTUM, EPIDEMIOLOGY, PREGNANCY (5102)
  RESECTION, IMPROVED TECHNIQUES (8955)
  SURGERY (2725)
HEMORRHOIDECTOMY
  PAIN, ANAL SPHINCTER STRETCHING (1988)
HEMOSTASIS
  LIVER, RESECTION (3584)
HEPATECTOMY
  ANESTHESIA, REANIMATION, LIVER PURIFICATION, PIG (1395)
  BIOLOGICAL CONSEQUENCE (2456)
  HEMANGIOENDOTHELIOMA, LIVER (4412)
  LIVER, CHROMOSOME, PARTIAL (2295)
  LOBECTOMY, ANESTHESIA (4480)
  MORPHOLOGY, RNA, DIET (7773)*
  PARTIAL, CELL CULTURE, RADIOLOGY, PROTEIN SYNTHESIS, RAT (2462)
  PARTIAL, DIGESTIVE CARCINOMA, METASTASES (2076)
  PARTIAL, EXCHANGE TRANSFUSIONS, HEPATOCYTIC PROLIFERATION (0830)*
  PARTIAL, LIVER, DNA, REGENERATION, RAT (2468)
  PARTIAL, LIVER, EXTRACT, X-RAY, MITOSIS (1394)
  PARTIAL, LIVER REGENERATION, MITOTIC INDEX, CIRCADIAN RHYTHM, RAT (8652)
  PARTIAL, METABOLISM, LIPID (3949)*
  PARTIAL, MITOSIS (4369)*
  PARTIAL, PORTAL BLOOD FLOW, DOG (0925)*
  PARTIAL, PROTEIN, LIPID, BIOSYNTHESIS (3177)
  PARTIAL, REGENERATION, EHRLICH'S CARCINOMA ASCITES, MASTOCYTOMA ASCITES, MICE (0147)
  PARTIAL, TECHNIQUE, EXPERIMENTAL (0100)*
  PSEUDOCHOLINESTERASE ACTIVITY, SEX HORMONES (9622)*
  RESECTION, REGENERATION (3965)
  SUBTOTAL, VASCULAR STRUCTURE CHANGE, RAT (2304)
  THROMBIN, LIVER (1386)
  TUMOR, HEPATOMA, REGENERATION (1381)
HEPATIC ARTERY
  ANEURYSM (4635)
  ANEURYSM, SPLENIC ARTERY BYPASS, SURGERY (1383)
  COMMON, DENERVATION, HEPATIC CIRRHOSIS (3654)
  CYSTIC ARTERY, ABERRANT HEPATIC BRANCHES (0926)
  FISTULA, HEMOBILIA, PORTAL VEIN (3586)
  FISTULA, PORTAL VEIN, PATHOPHYSIOLOGY (2780)
  LIGATION, LIVER, EPINEPHRINE (1799)
  LIGATION, LIVER NECROSIS, GASTRIC RESECTION (3549)
HEPATIC CELL
  LABELED GOLD COLLOID, DISTRIBUTION(1596)
HEPATIC COMA
  CHOLINESTERASE, HEPATITIS (3633)
  EXCHANGE TRANSFUSION, CHILD, TREATMENT (0548)
  MASSIVE EXCHANGE TRANSFUSIONS, RECOVERY (3589)
  METHOXYFLURANE ANESTHESIA (7582)*
  OXYGEN UPTAKE, ALKALOSIS, POTASSIUM (0858)
  PREGNANCY, EXCHANGE TRANSFUSION (0542)
  PROGNOSIS (0568)
  PROPHYLAXIS, TREATMENT (2852)
  SODIUM BICARBONATE TREATMENT, CEREBRAL BLOOD FLOW, CEREBRAL OXYGEN CONSUMPTION, OXYGEN/GLUCOSE INDEX (0534)*
  THERAPY (0564), (2850)
  TREATMENT, ETIOLOGY (1384)
  VITAMIN, LIPOIC ACID (2829)
HEPATIC ENCEPHALOMYELOPATHY
  CHRONIC, FOREARM, METABOLISM (1451)
HEPATIC ENCEPHALOPATHY
  INDUCED METABOLIC ALKALOSIS, CLINICAL

- STUDIES, IN VITRO STUDIES, RAT BRAIN (0859)

HEPATIC FAILURE
- ACUTE, CHILDREN, CAUSE, TREATMENT (2090)

HEPATIC INJURY
- HELIOTRINE, MORPHOLOGIC CHANGES (1397)*
- ISCHEMIA, PROPHYLACTIC TREATMENT, METHYLPREDNISOLONE, PHENOXYBENZAMINE (2271)*

HEPATICODUODENOSTOMY
- INDICATIONS, TECHNIQUE (1385)

HEPATITIS
- ABSORPTION, SECRETION, TRACER TECHNIQUE (2825)
- ACUTE, ALCOHOL INDUCED, HALOTHANE, AUSTRALIA ANTIGEN (8343)
- ACUTE, ALCOHOL INDUCED, HISTOLOGY, GLUCOCORTICOID (8342)
- ACUTE, ANTIGEN, CANCER (6778)*
- ACUTE, CELL REGENERATION, STEATOSIS, ELECTRON MICROSCOPY (5252)*
- ACUTE, CHRONIC, SERUM FREE AND ESTERIFIED FATTY ACIDS, SPECTROPHOTOMETRICAL COMPARISONS (9144)
- ACUTE, COMA, EARLY DIAGNOSIS (5660)*
- ACUTE, HEPATIC COMA, ACUTE YELLOW LIVER ATROPHY, ENCEPHALOPATHY (9102)
- ACUTE, HEPATIC FAILURE, ULTRASTRUCTURE, NUCLEOLAR HYPERTROPHY, ENDOPLASMIC RETICULUM, MITOCHONDRIA (5258)
- ACUTE, HISTOCYTES, VIRAL, GRANULES (0633)
- ACUTE, HISTOLOGY, IMMUNOLOGY (0620)
- ACUTE, INFECTIOUS, CHRONIC, PHYTOHEMAGGLUTININS (6254)*
- ACUTE, LIVER GLYCOGEN, PYRIDOXINE (7585)
- ACUTE, MUCOPOLYSACCHARIDES, CATABOLISM (0562)
- ACUTE, PANCYTOPENIA, GASTROINTESTINAL, BLEEDING, APLASTIC ANEMIA, BONE MARROW (5266)
- ACUTE, PANMYELOPHTHISIS, MAN (0588)
- ACUTE, RADIOISOTOPIC DIAGNOSIS, LIVER FUNCTION TESTS, JAUNDICE DIFFERENTIATION (0210)
- ACUTE AND CHRONIC, GLUCOCORTICOIDS, INCONSTANT ACTION, CIRRHOSIS (0615)
- ACUTE ALCOHOLIC, DIAGNOSIS (2102)
- ALCOHOLIC, LIVER, FATTY LIVER (6846)
- AMEBIASIS, LIVER, ABSCESS (2099)
- AMEBIC, ABSCESS, CONNECTIVE TISSUE (2099)
- AMEBIC, DIAGNOSIS, INDIRECT IMMUNOFLUORESCENCE REACTION, LIVER SCINTIGRAPHY (9290)
- AMEBIC, DIAGNOSIS, MANAGEMENT, LIVER ABSCESS, INTESTINAL AMEBIASIS (0712)*
- AMEBIC, SURGERY (2087)
- ANICTERIC, DIPHENYLHYDANTOIN (2096)
- ANICTERIC, VIRAL, HEMODIALYSIS (9129)
- ANTIBODIES, SERUM, TESTING (0193)*
- ANTIGEN, BLOOD DONOR, POST-TRANSFUSION (9115)*
- ANTIGEN, IMMUNOELECTROPHORESIS, SERUM PROTEIN, OUCHTERLONY TECHNIQUE, BLOOD TRANSFUSION (4945)
- ANTIGEN, LEPROSY (2879)
- ANTILYMPHOCYTE GLOBULIN EFFECT, HISTOLOGY, MOUSE, LIVER (9097)
- ARGININE, ORNITHINE, CIRRHOSIS, RADIATION (5197)
- ASSOCIATED ANTIGEN, ANTISERUM (2800)*
- AUSTRALIA ANTIGEN (4480), (5272)
- AUSTRALIA ANTIGEN, EPIDEMIOLOGY, VIROLOGY, CARRIER STATE, DOWN'S SYNDROME, MENTAL RETARDATION (6864)
- AUSTRALIA ANTIGEN, LEUKEMIA (7622)
- AUSTRALIA ANTIGEN, RAPID SCREEN, PROPHYLAXIS (7600)*
- AUSTRALIA ANTIGEN, TRANSFUSION (6963)
- AUTOANTIBODIES, CIRRHOSIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
- BILIRUBIN, SERUM PROTEIN FRACTION, PHOSPHATIDYLCHOLINE, THIAMINE, RIBOFLAVIN (2823)
- BIOPSY, LIVER, CULTURE, DIAGNOSIS (2527)
- BRUCELLA, WRIGHT'S SERUDIAGNOSIS, MAN (0592)
- CANCER, SUBACUTE, ALCOHOLIC (0599)
- CHILDREN, ADOLESCENTS, ENZYMES, DIAGNOSIS (0194)*
- CHOLECYSTITIS, BILE ACID, SPECTROPHOTOMETRY (2461)
- CHRONIC, ACTIVE, HISTOPATHOLOGY, CIRRHOSIS, CHEMOTHERAPY (4502)
- CHRONIC, ACUTE, LIVER CIRRHOSIS, BILIRUBIN FRACTIONS (7627)
- CHRONIC, ACUTE, ANTIGEN (2133)*
- CHRONIC, ACUTE VIRAL, AUSTRALIA ANTIGEN (6050)
- CHRONIC, AGGRESSIVE, THERAPY, D-PENICILLAMINE, LIVER FUNCTION TESTS (9743)
- CHRONIC, ALCOHOL, CIRRHOSIS (6122)
- CHRONIC, ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
- CHRONIC, ANATOMOPATHOLOGY, CLASSIFICATION, AGGRESSIVE, PERSISTENT (9146)
- CHRONIC, AUSTRALIA ANTIGEN, AUTOANTIBODIES (8364)*
- CHRONIC, AUTOIMMUNE, SEROLOGICAL DIAGNOSIS (5669)
- CHRONIC, AZATHIOPRINE (4500)
- CHRONIC, AZATHIOPRINE, IMMUNOSUPPRESSIVE THERAPY (6874)
- CHRONIC, BETA-LA-GLOBULIN-(C'3), SCLERODERMA, KIDNEY DISEASE, RHEUMATIC DISEASE (6105)
- CHRONIC, BLASTOID CELL TRANSFORMATION LYMPHOCYTES (7624)*
- CHRONIC, CCL4-INDUCED, ASPARTIC ACID TREATMENT (4497)*
- CHRONIC, CIRRHOSIS, ADRENAL CORTEX FUNCTION (7625)
- CHRONIC, CIRRHOSIS, HEMODYNAMIC PARAMETERS (6108)
- CHRONIC, CIRRHOSIS, LIPOPROTEIN (4040
- CHRONIC, CIRRHOSIS, LIVER, SULFOBROMOPHTHALEIN TEST (7260)
- CHRONIC, CIRRHOSIS, LIVER MANAGEMENT (9147)
- CHRONIC, CIRRHOSIS, LIVER SCAN (7629)

CHRONIC, CIRRHOSIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
CHRONIC, CIRRHOSIS, PATHOGENESIS, ETIOLOGY (9149)
CHRONIC, CIRRHOSIS, VEGETATIVE NERVOUS SYSTEM SURGERY, CHILDREN (9345)
CHRONIC, CLINICOPATHOLOGY (0589)
CHRONIC, COMA (4417)
CHRONIC, CYTOLYSIS SYNDROME, LIVER, CHILDREN, CIRRHOSIS (6001)
CHRONIC, DIAGNOSIS, DRUG EFFECT, BLOOD (2888)
CHRONIC, DIAGNOSIS, IMMUNOLOGY (0637)•
CHRONIC, DRUG EFFECT, ANTIBODY, SERUM PROTEIN FRACTION (2819)
CHRONIC, ENZYME, TRYPSIN (2966)
CHRONIC, ETIOPATHOGENESIS, DEVELOPMENT (0628)
CHRONIC, EVALUATION, PROGNOSIS (0604)•
CHRONIC, FATIGUE, GLYCEMIA (6872)
CHRONIC, FATTY DEGENERATION, PARENCHYMAL DAMAGE, DRUG TREATMENT (0566)
CHRONIC, FATTY LIVER, CIRRHOSIS, SERUM PROTEIN, ELECTROPHORESIS (5212)
CHRONIC, FOLLICULAR, HISTOLOGY, AUTOIMMUNIZATION, LIVER (5668)
CHRONIC, GLYCOPROTEINS, ENDOSCOPY, BIOPSY, DIABETICS, PROTEIN-BOUND POLYSACCHARIDES (5647)•
CHRONIC, HEMATOPOIESIS, BONE MARROW, CHILDREN (4629)
CHRONIC, HEPATOPROTECTOR, POLYVALENT IMMUNOGLOBULINS, CIRRHOSIS (0577)
CHRONIC, HETEROANTIBODY, BILE CANALICULI, SMOOTH MUSCLE ANTIBODY (2125)•
CHRONIC, HYPERGAMMAGLOBULINEMIA, CIRRHOSIS (6871)
CHRONIC, IMMUNOGLOBULINS, DIAGNOSTIC PATTERN (6115)•
CHRONIC, IMMUNOGLOBULINS, MITOCHONDRIA, CIRRHOSIS (5276)
CHRONIC, IMMUNOLOGY, GAMMA GLOBULIN (6107)
CHRONIC, IMMUNOLOGY, THERAPY (7626)
CHRONIC, IMMUNOSUPPRESSIVE DRUG, ANTIVIRAL (2829)
CHRONIC, IMMUNOSUPPRESSIVES, VIRUS-SPECIFIC ANTIBODY, CIRRHOSIS, ACUTE INTOXICATION (5247)
CHRONIC, INFECTIOUS, AC-GLOBULIN LEVEL (3644)
CHRONIC, LATENT, ARTERIAL SPIDERS, TREATMENT (3647)
CHRONIC, LIVER FUNCTION, CHOLECYSTOGRAPHY-COLANGIOGRAPHY (6869)
CHRONIC, LIVER FUNCTION, OXYGEN CONTENT (1371)
CHRONIC, LIVER NECROSIS, DYSPROTEINEMIA, MORPHOLOGY (8367)
CHRONIC, LYMPHOCYTE TRANSFORMATION, PHYTOHEMAGGLUTININ (2887)
CHRONIC, ORNITHINE-ASPARTATE MIXTURE, LUNG TUBERCULOSIS TREATMENT (8366)
CHRONIC, PANCREAS, AMYLASE (4082)
CHRONIC, PATHOGENESIS (2128)
CHRONIC, PATHOGENESIS, SYMPTOMATOLOGY, THERAPY (9148)
CHRONIC, PERSISTENT, PROGNOSIS (2127)
CHRONIC, PORTAL HYPERTENSION, DIAGNOSIS, AMMONIA TOLERANCE TEST (0184)•
CHRONIC, POSTINFECTIOUS, LIPID METABOLISM (3645)
CHRONIC, PROGNOSIS, DURATION, CIRRHOSIS (0610)•
CHRONIC, PROTEIN-FREE LIVER EXTRACT, TREATMENT (2126)
CHRONIC, REACTIVE, RHEUMATOID FACTOR (2111)
CHRONIC, RESPIRATION, WORK CAPACITY, BLOOD (2889)
CHRONIC, RHEUMATOID FACTOR, IMMUNOGLOBULIN (2890)
CHRONIC, SEROLOGICAL DIAGNOSIS, MITOCHONDRIAL ANTIBODY, IMMUNOFLUORESCENCE, THYROID DISEASE (3542)•
CHRONIC, SEROLOGY, IMMUNOLOGY (6870)
CHRONIC, THERAPY, AZOTHIOPRIN (9145)
CHRONIC, THERAPY, CORTISONE, IMMUNOSUPPRESSIVE CYTOSTATICS, D-PENICILLAMINE (8368)
CHRONIC, THOROTRAST, LIVER MORPHOLOGY, PATHOLOGY (9052)
CHRONIC, THROMBOCYTOPENIA, HYPERSPLENISM, GAMMA GLOBULINS, PLATELETS, FATTY LIVER (5173)
CHRONIC, TRANSAMINASE (4478)•
CHRONIC, TREATMENT (0590)
CHRONIC, TREATMENT, CIRRHOSIS (2124)•
CHRONIC, ULCERATION, GASTRIC, DUODENAL, CIRRHOSIS (0351)
CHRONIC, ULTRASTRUCTURE, CHILDREN (0602)
CHRONIC, VIRAL, ACUTE, AUSTRALIA ANTIGEN, CIRRHOSIS (7630)
CHRONIC, VIRAL, AUSTRALIAN ANTIGEN (1), AUSTRALIA (3641)•
CHRONIC, VITAMIN, LIPOIC ACID (2829)
CHRONIC ACTIVE, CIRRHOSIS, GAMMA GLOBULIN, METABOLISM (3643)•
CHRONIC ACTIVE, CORONOVIRUS, AUSTRALIAN-SH ANTIGEN (3642)•
CIRRHOSIS, AUTOALLERGIC PHENOMENON (2091)
CIRRHOSIS, BILIRUBIN, TRANSAMINASE, COAGULATION, PROTEIN FRACTIONS, AMMONIUM, ALBUMIN, GAMMA-GLOBULIN (4932)
CIRRHOSIS, FULMINANT FAILURE, TOCOPHEROL, BETA-LIPOPROTEIN (7526)•
CIRRHOSIS, MECHANISMS, PORTAL HYPERTENSION (2242)
CIRRHOSIS, TRANSAMINASES, ALKALINE PHOSPHATASE, BSP, HYPERGAMMAGLOBULINEMIA, PERILOBULAR FIBROSIS, MACRO-NODULAR LIVER (6119)
DISTURBED HAIR GROWTH (0531)•
DUBIN-JOHNSON SYNDROME, CHRONIC CHOLECYSTITIS, CHOLELITHIASIS (7739)
ELECTROLYTE, ASCITES, WATER TRANSPORT, KIDNEY (2920)
ENCAPSULATED, PERI-, PORTAL HYPERTENSION, SPLENECTOMY, HEPATIC INSUFFICIENCY, ANASTOMOSIS (5289)
ENZYME ACTIVITY, CIRRHOSIS, SERUM PLASMA, METHODS, LDH, SGOT, SGPT (4933)

EPIDEMIC, BACTERIA, BILIARY TRACT, ANTIBIOTIC (2873)
EPIDEMIC, FLY, DYSENTERY (3005)
EPIDEMIC, SHORT INCUBATION (8346)*
EPIDEMIOLOGY, VIENNA (2883)
EPITHELIOID CELL GRANULOMA, LIPOGRANULOMA, BIOPSY (6776)*
EXERCISE, REST (7882)
FULMINATING, LIVER GRAFT, PROTEIN METABOLISM, HEPATIC ENZYMES, HUMAN, BABOON (6069)
FUNCTIONAL, LC 9066, PANCREATITIS, CONSTIPATION, COLITIS (6168)
GALACTOSAMINE, OROTATE, LIVER (6845)
GASTRITIS, CHOLECYSTITIS, RADIOLOGY (2206)
GENESIS, AUTOAGGRESSIVE THEORY (2812)
GIGANTOBLASTIC, GALACTOSAMINE, PREGNANT RAT, BABY RAT, LIVER, MORPHOLOGY (9104)
GLUCOCORTICOID, LIVER BIOPSY, PROTEIN SYNTHESIS, BILIRUBIN, TRANSAMINASE, PREDNISOLON (5255)
GONOCOCCAL PERIHEPATITIS, CHOLECYSTITIS, SIMULATION (1410)
GRANULOMATOUS, HISTOPLASMOSIS (5237)
GRANULOMATOUS, LIVER SARCOIDOSIS, ETIOLOGY, HISTOPATHOLOGY (9106)
GROWTH HORMONE, INSULIN, GLUCOSE TOLERANCE (0535)*
HALOTHANE ANESTHESIA (7590)
HALOTHANE, LYMPHOCYTE, STIMULATION (8326)*
HEMODIALYSIS, SH-ANTIGEN (0609)*
HEMOLYSIS (2120)
HERPES SIMPLEX, JAUNDICE, EROSIVE GASTRITIS, GASTROINTESTINAL BLEEDING, ADULT (0612)
HOMOLOGOUS SERUM, EPIDEMIOLOGY, INOCULATION, TRANSFUSION (2872)
HYDATID CYST, BILIARY DUCTS (1535)
HYPERBILIRUBINEMIA, GILBERT'S DISEASE, DIFFERENTIATION (0530)*
ICTEROGENIC, ACUTE, ETIOLOGY (1413)
ICTERUS, SURGERY, OPEN-HEART (2885)
IMMUNOLOGY, ANTIGEN, SERUM (0611)*
IMMUNOLOGY, THERAPY, ANTILYMPHOCYTIC GLOBULIN (6873)
IMMUNOTHERAPY (2854)
IMPROVED BILE DUCT DIAGNOSIS (0184)*
INCIDENCE, BLOOD, RED CROSS (1398)*
INFANTILE, SERUM CHOLINESTERASE (8359)
INFECTIOUS, APPENDICITIS, DIAGNOSIS (0483)
INFECTIOUS, BILE ACID, STEROID SULPHATE, CONCENTRATION, SERUM (5254)*
INFECTIOUS, BLOOD ACTIVITY (1369)
INFECTIOUS, CHILDHOOD (1436)
INFECTIOUS, CHOLESTASIS, FUNCTIONAL AUTOPSIES, TOXOPLASMOSIS, CYTOMEGALIA, RUBELLA SYNDROME, BLOOD TRANS-CLEARANCE, DIAGNOSIS, DYE TEST (2878)
INFECTIOUS, CHRONIC HEPATIC DISORDER (2880)
INFECTIOUS, CIRRHOSIS, PROPERDIN, SPECIFIC IMMUNITY, NEWCASTLE DISEASE (5202)
INFECTIOUS, EARLY RECONVALESCENCE, TRANSFUSIONS, BLOOD, PLASMA (0627)
INFECTIOUS, EPIDEMIC, IMMUNOGLOBULIN, CHILDREN (9140)
INFECTIOUS, ESTROGEN CONTENT (1424)
INFECTIOUS, EXERCISE (1419)
INFECTIOUS, GAMMA GLOBULIN EFFECT (1422)
INFECTIOUS, HEPARIN, BLOOD, LIVER (2874)
INFECTIOUS, INCIDENCE, BLOOD GROUPS, AGE PATTERN (0626)
INFECTIOUS, INTRAVENOUS METHAMPHETAMINE ABUSE, EPIDEMIOLOGY (8360)
INFECTIOUS, JAUNDICE, CHOLOSTASIS, PORPHYRINURIA, EXANTHEMA (6841)
INFECTIOUS, LYMPHOBLASTOID CELL CULTURE (2106)*
INFECTIOUS, OBSERVATIONS (2058)
INFECTIOUS, PANCYTOPENIA (0629)
INFECTIOUS, PANCYTOPENIA, BONE MARROW APLASIA, IMMUNOLOGIC PATHOGENESIS (0623)
INFECTIOUS, PREGNANCY, PUERPERIUM (1448)
INFECTIOUS, PROPHYLAXIS (2119)
INFECTIOUS, RECOVERY, REST, VIGOROUS EXERCISE, SERVICEMEN (1414)*
INFECTIOUS, SERUM ANTIGEN, IMMUNOLOGIC, DISTINCTION (5253)*
INFECTIOUS, SERUM TRANSAMINASES, BLOOD DONORS (0116)
INFECTIOUS, TRISOMY-21, DOWN'S SYNDROME (2108)*
INFECTIOUS MONONUCLEOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS, LIVER HISTOPATHOLOGY (9123)
INOCULATION, INFANTS, BIOPSIES, FUSIONS (6086)
IRON METABOLISM, ACUTE, CHRONIC (3587)
JAUNDICE, ISONIAZID (2861)
JAUNDICE, REGENERATION, STEATOSIS, PARENCHYMAL VOLUME (5259)
KININASE ACTIVITY, PLASMA (2118)
LECITHIN-CHOLESTEROLACYLTRANSFERASE, CHOLESTEROL (5167)*
LIVER, HEPATIC INSUFFICIENCY, PANMEDIA, STEATOSIS, ANOREXIA (5199)
LIVER BIOPSY, CHOLANGIOGRAPHY (4078)
LIVER FUNCTION, ONE-STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN, INFANTS (5661)*
LIVER FUNCTION, PROTEIN TURNOVER, IMMUNOGLOBULIN (6855)*
LUPOID, AUTOIMMUNITY, DIAGNOSIS (2085)
LUPOID, CIRRHOSIS, HYPERGLOBULINEMIA (5261)
LUPOID, LUPUS ERYTHEMATODES VISCERALIS, LIVER HISTOLOGY (8332)
NEONATAL, CLASSIFICATION (2866)
NEONATAL, CLASSIFICATION, PERINATAL IDIOPATHIC HEMOCHROMATOSIS (6077)
NEONATAL, GIGANTIC CELLS, MORPHOLOGY HISTOLOGY (0625)
NON-VIRAL, ACUTE, AFLATOXIN, UGANDA (6070)
NON-VIRAL, ACUTE, APLASTIC ANEMIA (2867)

NON-VIRAL, ACUTE, BILE DUCT ABNORMAL EPITHELIUM, CLINICAL STUDY (3601)
NON-VIRAL, ACUTE, CAFFEINE, THEOPHYLLINE, RAT (5821)
NON-VIRAL, ACUTE, CC14, DIETHYLDITHIOCARBAMATE (8345)
NON-VIRAL, ACUTE, CHRONIC, ETIOLOGY, GASTROINTESTINAL SYMPTOMS (4502)
NON-VIRAL, ACUTE, CHRONIC, LYMPHOCYTE SYSTEM (3604)
NON-VIRAL, ACUTE, CYTOLITIC, HISTOLOGY, LIVER BIOPSY (3598)
NON-VIRAL, ACUTE, DRUG-INDUCED, LYMPHOBLAST TRANSFORMATION TEST (4072)
NON-VIRAL, ACUTE, EXCHANGE TRANSFUSION, COMA, STEROID (6063)
NON-VIRAL, ACUTE, FATTY LIVER, BIOPSY STUDY (4433)
NON-VIRAL, ACUTE, GALACTOSAMINE-INDUCED, LIVER ULTRASTRUCTURE, SPECIES DIFFERENCES (4443)*
NON-VIRAL, ACUTE, GRANULOMATOUS, HISTOPLASMOSIS, CORTICOSTEROIDS (4448)*
NON-VIRAL, ACUTE, HALOTHANE ANESTHESIA, IRRADIATION THERAPY, UTERINE CANCER (6076)
NON-VIRAL, ACUTE, HALOTHANE, ERYTHROID APLASIA (6064)
NON-VIRAL, ACUTE, HALOTHANE, SURGERY (3612)
NON-VIRAL, ACUTE, INCIDENCE, BLOOD TRANSFUSIONS, SERUM HEPATITIS (4477)*
NON-VIRAL, ACUTE, JAUNDICE, AMINAZINE (7586)
NON-VIRAL, ACUTE, LIVER, AFLATOXIN, MONKEY (6065)
NON-VIRAL, ACUTE, LIVER, MUSHROOM POISONING, CARBOHYDRATE METABOLISM (6066)
NON-VIRAL, ACUTE, LIVER NECROSIS, HALOTHANE ANESTHESIA (6203)
NON-VIRAL, ACUTE, LIVER TRAUMA (6083)
NON-VIRAL, ACUTE, LUPOID, JAUNDICE (6109)
NON-VIRAL, ACUTE, PERFUSION, BOVINE LIVER THERAPY, HEPATIC FAILURE CASES (3613)
NON-VIRAL, ACUTE, SULFISOXAZOLE, SULFAMETHOXAZOLE, STEVENS-JOHNSON SYNDROME, PREDNISONE (4445)*
NON-VIRAL, ACUTE, SURGERY, INJURY (7596)
NON-VIRAL, ACUTE, TRAUMA (6188), (9107)
NON-VIRAL, ACUTE, TRAUMA, LIVER, COPPER (6067)
NON-VIRAL, ACUTE, TRAUMA, SEVERANCE (7598)
NON-VIRAL, CARCINOGEN, GLYCOLYSIS, ENZYME REGULATION (6079)
NON-VIRAL, CC14, COLD ENVIRONMENT (8331)
NON-VIRAL, JAUNDICE, ISONIAZID (2861)
NON-VIRAL, NEONATAL, CLASSIFICATION (2866)
NON-VIRAL, PYRAZINAMIDE TOXICITY, HYPOLIPOPROTEINEMIA (2863)
NON-VIRAL, SCINTOGRAPHY, PELLEGRA, AZOTEMIA (0603)
NON-VIRAL, TREATMENT (2865)
PELIOSIS, RADIOTHERAPY (5243)
PERSISTENT, DIAGNOSIS, TREATMENT, CIRRHOSIS (0557)
PHALLOIDIEN, MUSHROOM POISONING, DIARRHEA, CARDIOVASCULAR COLLAPSE (5332)
POST-TRANSFUSION, MASSACHUSETTS RED CROSS BLOOD, PACKED RED CELLS (1398)*
PROTEIN SYNTHESIS, DNA VIRUS, RNA VIRUS, CELL CULTURES, ANTINUCLEAR ANTIBODIES (5257)
PYRAZINAMIDE TOXICITY, HYPOLIPOPROTEINEMIA (2863)
PYRAZINAMIDE TOXICITY, TRANSAMINASE (8324)*
RHEUMATOID, POLYARTHRITIS, BIOPSY (2083)*
SASHIMA, IMMUNOGLOBIN, TRANSAMINASE (5271)
SCLEROSING, ALCOHOLISM, LIVER FIBROSIS MESENCYMAL CELL (9057)
SERUM, ACUTE DYSTROPHY (1425)
SERUM, AUSTRALIA ANTIGEN (6868)
SERUM, BLOOD TRANSFUSION, BLOOD BANKS, RISKS (8357)
SERUM, EPIDEMIOLOGY, BLOOD TRANSFUSION, ICTERIC AND ANICTERIC COURSE, GAMMAGLOBULIN (8361)
SERUM, HEMODIALYSIS UNIT, PATIENTS, PERSONNEL (0613)
SERUM, INFECTIOUS, HYPERLIPIDEMIA (0618)
SERUM, INFECTIOUS, INCIDENCE (1427)
SERUM, PATIENTS, PROFESSIONAL RISK (9122)
SERUM, SH ANTIGEN, IMMUNOELECTROOSMOPHORESIS (6518)*
SERUM, TRANSFUSION, IMMUNOLOGY, AUSTRALIA ANTIGEN (0608)*
SERUM BILIRUBIN, TRANSAMINASE, IMMUNOGLOBULIN (7904)*
SERUM IMMUNOGLOBULINS, ALCOHOLISM, LIVER HISTOPATHOLOGY (9101)
SURGERY, JAUNDICE, CHOLESTASIS (5179)
TOXIC, HALOGENS, HYDROCARBONS (1409)
TOXIC, ISONIAZID, ENCEPHALOPATHY (0600)
TRANSPLANTATION, BABOON'S LIVER, BILIRUBINEMIA, AMMONIEMIA, TRANSAMINASE (6007)
TREATMENT (2865)
TRISOMY-21, DOWN'S SYNDROME (2108)*
VIRAL, ACUTE, ALKALINE PHOSPHATASE, ACID PHOSPHATASE, ULTRASTRUCTURE (3084)
VIRAL, ACUTE, ALKALINE PHOSPHATASE, LEUCOCYTE, OBSTRUCTIVE JAUNDICE, TUMOR (5723)
VIRAL, ACUTE, ANTIGEN, EPIDEMIC (6099)
VIRAL, ACUTE, ANTIGEN, LEPROSY (2879)
VIRAL, ACUTE, ANTIGEN TEST (7230)
VIRAL, ACUTE, APLASTIC ANEMIA (7605)

VIRAL, ACUTE, ARGININE, MALIC ACID, CIRRHOSIS (6044)
VIRAL, ACUTE, AUSTRALIA ANTIGEN (3629), (6090), (7606), (7611), (7612), (7620), (7623), (8353)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, ADAPTATION TO INFECTIOUS HEPATITIS (3632)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, ANTIBODIES (7607)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, DIAGNOSIS, CARRIER (6087)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, IMMUNODIFFUSION (4473)•
VIRAL, ACUTE, AUSTRALIA ANTIGEN, LIVER (6867)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, RADIOIMMUNOASSAY (5700)
VIRAL, ACUTE, AUSTRALIA ANTIGEN, SERUM (5699)
VIRAL, ACUTE, AUSTRALIA/SH ANTIGEN (6098)
VIRAL, ACUTE, AUTOANTIBODIES (7621)
VIRAL, ACUTE, AUTOANTIBODIES, ANTIGEN (8349)•
VIRAL, ACUTE, AUTOANTIBODY, HEMATOLOGY, HEMOLYTIC ANEMIA (2875)
VIRAL, ACUTE, BILE PIGMENT SITE (4491)
VIRAL, ACUTE, BLOOD COAGULATION (6095)
VIRAL, ACUTE, BLOOD DONORS, CYTOGENY (3631)
VIRAL, ACUTE, CHIMPANZEE CARRIER, PREVENTIVE HEALTH MEASURES (3639)
VIRAL, ACUTE, CHOLESTASIS, FUNCTIONAL CLEARANCE, DIAGNOSIS, DYE TEST (2878)
VIRAL, ACUTE, CHOLINESTERASE, HEPATIC COMA (3633)
VIRAL, ACUTE, CHRONIC, ANTITHYMOCYTE GLOBULIN (3626)•
VIRAL, ACUTE, CHRONIC, CIRRHOSIS, BOTKIN'S DISEASE, CHILDREN (6093)
VIRAL, ACUTE, CHRONIC, EPIDEMIOLOGY (6104)
VIRAL, ACUTE, CIRRHOSIS, AFTERTREATMENT (2871)
VIRAL, ACUTE, CIRRHOSIS, AMINO ACID, GAMMA GLOBULIN (6013)
VIRAL, ACUTE, CIRRHOSIS, SMALL INTESTINE, MUCOSAL CHANGE (5867)
VIRAL, ACUTE, COMPARATIVE, SUBHUMAN PRIMATE, MAN (2881)
VIRAL, ACUTE, COXSACKIEVIRUS B5, HERPES SIMPLEX (7610)
VIRAL, ACUTE, COXSACKIEVIRUS, PANCREATITIS, SPLENITIS, PATHOLOGY, MOUSE (4474)•
VIRAL, ACUTE, DIAGNOSIS (1435)
VIRAL, ACUTE, DIAGNOSIS, RING PRECIPITATION REACTION (5726)
VIRAL, ACUTE, DIAGNOSIS, TREATMENT (3635)
VIRAL, ACUTE, DRUG ABUSE (7604)
VIRAL, ACUTE, DRUG ADDICTION (6085)
VIRAL, ACUTE, DRUG ADDICTS, ANTIGEN, ADOLESCENT (6100)
VIRAL, ACUTE, ENZYME, ACETYLATION RATE, LIVER FUNCTION (6043)
VIRAL, ACUTE, ENZYMOLOGY, GDH, GOT, GPT (7609)
VIRAL, ACUTE, EPIDEMIC, BACTERIA, BILIARY TRACT, ANTIBIOTIC (2873)
VIRAL, ACUTE, EPIDEMIOLOGY (4493)
VIRAL, ACUTE, EPIDEMIOLOGY, RELAPSE, JAUNDICE (4489)
VIRAL, ACUTE, EPIDEMIOLOGY, VIENNA (2883)
VIRAL, ACUTE, ETIOLOGY, EPIDEMIOLOGY (6089)
VIRAL, ACUTE, FAMILY (6092)
VIRAL, ACUTE, FANCONI'S ANEMIA (4495)
VIRAL, ACUTE, FOLLOW-UP (6102), (6103)
VIRAL, ACUTE, GAMMA GLOBULIN, PROPHYLAXIS (4487)
VIRAL, ACUTE, HEPATIC COMA, NEUROLOGICAL SEQUELAE (7613)
VIRAL, ACUTE, HOMOLOGOUS SERUM, EPIDEMIOLOGY, INOCULATION, TRANSFUSION (2872)
VIRAL, ACUTE, ICTERUS, SURGERY, OPEN-HEART (2885)
VIRAL, ACUTE, ICTERUS, TOLBUTAMIDE TEST (4483)
VIRAL, ACUTE, IMMUNOLOGY, PARTICLES (5454)
VIRAL, ACUTE, INDIAN CHILDHOOD CIRRHOSIS, HEPATITIS ANTIGEN, SERUM IMMUNOGLOBULINS (3648)•
VIRAL, ACUTE, INFECTIOUS, CHRONIC HEPATIC DISORDER (2880)
VIRAL, ACUTE, INFECTIOUS, DOWN'S SYNDROME (3634)
VIRAL, ACUTE, INFECTIOUS, EPIDEMIC, SCHOOL (3638)
VIRAL, ACUTE, INFECTIOUS, HEPARIN, BLOOD, LIVER (2874)
VIRAL, ACUTE, INFECTIOUS, PREGNANCY, INFANT, CONTROL (3630)
VIRAL, ACUTE, INTESTINAL CONTENTS, LIPID MEAL, BILE SALTS, STEATORRHEA (4475)•
VIRAL, ACUTE, JAUNDICE, CHOLESTASIS, DIAGNOSIS (6097)
VIRAL, ACUTE, JAUNDICE, FISHER'S DISCRIMINANT ANALYSIS (7248)
VIRAL, ACUTE, JAUNDICE, NEWBORN (4457)
VIRAL, ACUTE, KIDNEY FAILURE (2112)
VIRAL, ACUTE, LIPID DIGESTION (3637)
VIRAL, ACUTE, LIVER (4486), (4488)
VIRAL, ACUTE, LIVER, CIRRHOSIS, CARCINOMA, AFRICA (6027)
VIRAL, ACUTE, LIVER, ENZYME, CIRRHOSIS (4014)•
VIRAL, ACUTE, LIVER, MARMOSET (3640)
VIRAL, ACUTE, LIVER, TOXICITY (6034)
VIRAL, ACUTE, LIVER BIOPSY, BOTKIN'S DISEASE, CHILDREN (6084)
VIRAL, ACUTE, LIVER ENZYMES (7614)
VIRAL, ACUTE, LIVER MITOSIS (6096)
VIRAL, ACUTE, LIVER ULTRASTRUCTURE, BILE PIGMENTS, DISSE-BILE CANALICULI (4476)•
VIRAL, ACUTE, METABOLISM, BILIRUBIN (4490)
VIRAL, ACUTE, MHV-3, DISACCHARIDASE LEVEL, SMALL INTESTINE (3636)

IRAL, ACUTE, MHV-3, LYMPHONODULES, BONE MARROW (4481)
IRAL, ACUTE, MHV-3, LYSOSOMAL DAMAGE (4482)
IRAL, ACUTE, MHV-3, LYSOSOMAL MEMBRANE (4484)
IRAL, ACUTE, NON-VIRAL, CHRONIC SUBCLINICAL, CONNECTIVE TISSUE, DISEASE (6110)
IRAL, ACUTE, PANCREATIC FISTULA (6094)
IRAL, ACUTE, PORPHYRIN METABOLISM (4485)
IRAL, ACUTE, PREGNANCY (4492)
IRAL, ACUTE, PRESYMPTOMATIC DIAGNOSIS, AUSTRALIA ANTIGEN (1418)
IRAL, ACUTE, PROGNOSIS (4496)
IRAL, ACUTE, REMOTE SEQUELAE (7603)
IRAL, ACUTE, REPRODUCTION (4479)
IRAL, ACUTE, REST, EXERCISE (1419)
IRAL, ACUTE, SEASONAL VARIATION (2876)
VIRAL, ACUTE, SEROTONIN METABOLISM, CIRRHOSIS (6117)
VIRAL, ACUTE, SERUM, AUSTRALIA ANTIGEN (3624)*
VIRAL, ACUTE, SERUM, AUSTRALIAN-SH ANTIGEN, LONDON (3625)*
VIRAL, ACUTE, SERUM, LEUCOCYTE, MITOSIS, SUPPRESSION, DONOR (2870)*
VIRAL, ACUTE, SERUM, LIVER (6091)
VIRAL, ACUTE, SERUM, NEW ORLEANS, EPIDEMIOLOGY (3628)
VIRAL, ACUTE, SERUM, SH ANTIGEN, DRUG USERS (5695)
VIRAL, ACUTE, SERUM GUANASE, DIAGNOSIS, SGPT, LIVER DISEASE (5696)
VIRAL, ACUTE, TRANSFUSION, EPIDEMIOLOGY, SERUM PROTEIN FRACTION (2877)
VIRAL, ACUTE, URIDINEDIPHOSPHOGLUCOSE (2884)
VIRAL, ACUTE, XYLOSE TEST (4494)
VIRAL, ACUTE, YELLOW ATROPHY, HEMODIALYSIS (2083)*
VIRAL, ADOLESCENT, EPIDEMIOLOGY (5262)
VIRAL, ALKALINE PHOSPHATASE, MAC LAGAN TEST, DIFFERENTIAL DIAGNOSIS, NON-INFECTIOUS CHOLESTATIC JAUNDICE (8749)
VIRAL, ALPHA-FETOPROTEIN, CORTICOTHERAPY, EMBRYONIC HEPATOCYTES (6861)
VIRAL, ANABOLIC STEROIDS, STANOZOLOLE, CHILDREN (9127)
VIRAL, ANTIBIOTICS, STEROIDS (1517)
VIRAL, ANTIGENS, ANTIBODIES (2114)
VIRAL, ANTILIVER ANTIBODIES (0632)
VIRAL, APLASTIC ANEMIA (2867)
VIRAL, AUSTRALIA ANTIGEN (0536)*, (0617), (5268), (5270)
VIRAL, AUSTRALIA ANTIGEN, ANTI-SERUM (0606)*
VIRAL, AUSTRALIA ANTIGEN, CHILE, INCIDENCE (9119)
VIRAL, AUSTRALIA ANTIGEN, DIAGNOSIS (2501)*
VIRAL, AUSTRALIA ANTIGEN, DRUG ADDICTION (6860)*
VIRAL, AUSTRALIA ANTIGEN, REVIEW (0621)
VIRAL, AUSTRALIA ANTIGEN, HEMODIALYSIS CENTER (9118)
VIRAL, AUSTRALIA ANTIGEN, HEPATOPATHOLOGY, SYSTEMIC DISEASES (9139)
VIRAL, AUSTRALIA ANTIGEN, IMMUNOLOGY, BLOOD SCREENING (8363)
VIRAL, AUSTRALIA ANTIGEN, INCIDENCE, LIVER DISEASES (9141)
VIRAL, AUSTRALIA ANTIGEN, INCIDENCE, SICILY (9138)
VIRAL, AUSTRALIA ANTIGEN, PERIARTERITIS NODOSA, LIVER, HISTOPATHOLOGY (9121)
VIRAL, AUSTRALIA ANTIGEN, SH ANTIGEN (0619)
VIRAL, AUSTRALIA ANTIGEN, TRANSFUSION PATIENTS, LIVER DISEASES (9119)
VIRAL, AUSTRALIA-SH ANTIGEN (0607)
VIRAL, AUTOANTIBODY, HEMATOLOGY, HEMOLYTIC ANEMIA (2875)
VIRAL, BILE PIGMENTS, ELECTRON MICROSCOPY (2123)
VIRAL, BILE SECRETION, VEDRENAN, CHOLERETIC, CIRRHOSIS, MIGRAINE, LITHIASIS (5172)
VIRAL, BLOOD GROUPS, CIRRHOSIS (6937)*
VIRAL, BLOOD GROUPS, INCIDENCE (1426)
VIRAL, BLOOD TRANSFUSION, PROPHYLAXIS, AUSTRALIA ANTIGEN (9125)
VIRAL, BONE MARROW DEPRESSION, ANATOMOPATHOLOGY (6856)*
VIRAL, BONE MARROW INSUFFICIENCY, CHRONIC JAUNDICE, PANCYTOPENIA (9131)
VIRAL, BONE MARROW PROLIFERATION, CHILDREN (9130)
VIRAL, CELLULAR IMMUNITY, HUMORAL IMMUNITY, PROGNOSIS (9133)
VIRAL, CHOLESTASIS, PREDNISONE THERAPY CHILDREN (9124)
VIRAL, CHRONIC, LIVER, CIRRHOSIS, ANTIGLOBULIN CONSUMPTION TEST (9050)
VIRAL, CHRONIC, PROGNOSIS (1439)
VIRAL, CIRRHOSIS, AFTERTREATMENT (2871)
VIRAL, CIRRHOSIS, ENZYMES, MALATE DEHYDROGENASE, SORBIT DEHYDROGENASE, SERUM (0574)
VIRAL, CLINICAL FORMS, DIFFERENTIAL DIAGNOSIS, TREATMENT (2121)
VIRUS, COMA, NEUROLOGICAL SEQUELAE (8348)*
VIRAL, COMPARATIVE, SUBHUMAN PRIMATE-MAN (2881)
VIRAL, CONVALESCENCE, SERUM TRANSAMINASES, CHILDREN (9135)
VIRAL, DIABETES, ICTERUS (5269)
VIRAL, DIABETES MELLITUS, CHILD (0631)
VIRAL, DIABETES MELLITUS, ETIOLOGY, EXOCRINE PANCREAS (8362)
VIRAL, DIAGNOSIS, CROSSED ELECTROPHORESIS (7211)*
VIRAL, DIAGNOSIS, IMMUNOGLOBULIN LEVEL (8035)
VIRAL, DIAGNOSIS, TUBERCULOSIS (7602)
VIRAL, DRUG USERS (6857)*
VIRAL, ENZYME, SERUM, URINE, FECES (7615)

VIRAL, EPIDEMIOLOGY, INCIDENCE (0616)
VIRAL, EPIDEMIOLOGY, INDIAN ARMY (1421)
VIRAL, EPIDEMIOLOGY, PARENTERAL INFECTION (7601)
VIRAL, EPIDEMIOLOGY, SYMPTOMATOLOGY, CHILDREN (9137)
VIRAL, ETIOLOGY, AUSTRALIA ANTIGEN (0624)
VIRAL, FECAL ANTIGEN (9347)*
VIRAL, GAMMA GLOBULIN, LIVER (2110)
VIRAL, GASTRIC MUCOSA, HEALTH RESORT TREATMENT (7616)
VIRAL, GASTRITIS, GASTRIC MUCOSA, GASTRIC SECRETION (9136)
VIRAL, GHANA, EPIDEMIOLOGY (2198)
VIRAL, HEMOGLOBIN A2, HEMOLYTIC ANEMIA, JAUNDICE, GENETIC FACTORS, BLOOD GROUPS (5260)
VIRAL, HEMOGLOBIN A2, INFECTION, SUSCEPTIBILITY (9356)
VIRAL, HEPATIC COMA, MANAGEMENT (2117)
VIRAL, HEPATOCELLULAR CARCINOMA, POSTNECROTIC CIRRHOSIS, AUSTRALIA ANTIGEN (0547)
VIRAL, HISTOCHEMISTRY, ALKALINE PHOSPHATASE, AMINOPEPTIDASE, ATPASE (5267)
VIRAL, HISTORY, PREGNANT WOMEN, SULFOBROMOPHTHALEIN CLEARANCE (9142)
VIRAL, HUMORAL AND CELLULAR IMMUNITY, CHRONIC HEPATITIS (9117)
VIRAL, HYDROCORTISONE, URINARY EXCRETION, CORTICOSTEROIDS (8350)
VIRAL, ICTERUS, LUPOID, CHRONIC (5263)
VIRAL, IMMUNOGLOBULINS, CORTISONE TREATMENT, CHILDREN (9134)
VIRAL, INFECTIOUS MONONUCLEOSIS TEST, AUSTRALIA ANTIGEN TEST, LIVER DISEASES (8767)
VIRAL, ISOLATION, STRAINS, SEROLOGY (0605)*
VIRAL, ISOLATION, STRAINS 483 AND ERIKA, CHARACTERIZATION (0406)*
VIRAL, JAUNDICE, PREGNANCY (5209)
VIRAL, LABORATORY DATA, CLINICAL PATTERNS (2115)
VIRAL, LAPAROTOMY (2122)
VIRAL, LEUCOCYTES, MICROSCOPY (0015)*
VIRAL, LIPID MEAL, INTESTINAL CONTENTS (5273)
VIRAL, LIVER, KENYA (6866)
VIRAL, LIVER, MANAGEMENT (1432)
VIRAL, LIVER FUNCTION, BONE MARROW DAMAGE (8358)
VIRAL, LIVER FUNCTION, COMPUTER ANALYSIS (6858)*
VIRAL, LIVER FUNCTION, OVARIES ENDOCRINOLOGY (8352)
VIRAL, LIVER SCANNING, FUNCTION (8351)
VIRAL, MORBIDITY, MORTALITY, ISRAEL (6865)
VIRAL, MORTALITY, PREGNANCY, SAUDI ARABIA (2105)*
VIRAL, NECROTIC LIVER COMA, ETIOLOGY, SYMPTOMATOLOGY (9053)
VIRAL, NON-VIRAL, ACUTE, SERUM IRON, BINDING-CAPACITY (4651)
VIRAL, OPEN HEART SURGERY BLOOD SOURCES, CARDIOPULMONARY BYPASS (2104)*
VIRAL, POSTHEPATIC CIRRHOSIS, CHOLELITHIASIS, HEMICOLECTOMY, ALCOHOL, CHOLECYSTOPATHY (5265)
VIRAL, POSTNECROTIC CIRRHOSIS, HEPATOCELLULAR CARCINOMA (1429)
VIRAL, PRESYMPTOMATIC DIAGNOSIS, ANTIGEN (1418)
VIRAL, PROPHYLAXIS, CLINICAL FEATURES, THERAPY (7608)
VIRAL, PROPHYLAXIS, CONTROL (0630)
VIRAL, PROPHYLAXIS, IMMUNE SERUM GLOBULIN, PEACE CORPS VOLUNTEERS (0614)
VIRAL, REGENERATION, EPITHELIUM (5264)
VIRAL, RENAL DIALYSIS (2116)
VIRAL, SEASONAL VARIATION (2876)
VIRAL, SELENIUM THERAPY, LIVER REGENERATION, HAMSTER (8354)
VIRAL, SEROLOGICAL TEST, INFECTIOUS-MONONUCLEOSIS, IMMUNOGLOBULINS (6550)
VIRAL, SERUM, INCUBATION, AUSTRALIA ANTIGEN (1433)
VIRAL, SERUM, LEUCOCYTE, MITOSIS, SUPPRESSION, DONOR (2870)*
VIRAL, SERUM BILIRUBIN, TRANSAMINASES (1431)
VIRAL, SGOT, SGPT (0663)
VIRAL, THERAPY, CORTICOSTEROIDS (7619)
VIRAL, THERAPY, GLUCOCORTICOID METABOLISM (7617)
VIRAL, THERAPY, LIVER (9128)
VIRAL, THERAPY, POLYVINYL ALCOHOL PREPARATION (8355)
VIRAL, THERAPY, PREGNANCY (7618)
VIRAL, TRANSAMINASES, DEVELOPMENTAL COURSE, CHRONIC HEPATITIS (9126)
VIRAL, TRANSFUSION, EPIDEMIOLOGY, SERUM PROTEIN FRACTION (2877)
VIRAL, TREATMENT, LIVER (2109)
VIRAL, ULTRASTRUCTURE (2296)
VIRAL, URIDINEDIPHOSPHOGLUCOSE (2884)
VIRUS, SEROLOGY, ANTIGEN-VIRUS (6550)
VITAMIN B12, FOLIC ACID, ACUTE, BILIRUBIN, TRANSAMINASES, ELECTROPHORESIS, ALKALINE PHOSPHATASE (6079)
HEPATOBILIARY INSUFFICIENCY
  CHOLERETIC AGENT, PHENOLPHTHALEIN, BELLADONNA EXTRACT, TREATMENT (0663
HEPATOBILIARY TRACT
  ALKALINE, PHOSPHATASE, SERUM (4044)
  BILE ACID COMPOSITION, LITHOCHOLIC ACID, ANTIBIOTIC EFFECT (5597)*
  CYSTIC ENLARGEMENT, DISSEMINATED PAPILLOMATOSIS (8288)
  DISEASE, ROUX-EN-Y JEJUNAL LOOP, CHRONIC PANCREATITIS (7654)*
  DISEASES, LIVER EXCRETION, BILE FLOW (8277)
  JAUNDICE, INTRAHEPATIC, CLINICAL DEVELOPMENT (8014)
  PANCREABIL, CHOLERETIC, ANTISPASMODIC CONSTIPATION, POST-HEPATITIS (5354)
  SECRETIONS, METABOLISM (0866)
HEPATOBLASTOMA
  ANTICARCINOGEN THERAPY, INFANT (2047)

  - INFANT, DIAGNOSIS, SERUM ALPHAFETOPROTEIN (0344)
- HEPATOCARCINOGENESIS
  - ACETYLAMINOFLUORENE, PHENOBARBITAL, RAT (4396)
  - AMINO-AZO DYE, DIETARY, RESISTANCE (3615)
  - CANCER, EPIPHYSECTOMY, RAT (0152)
  - CARBOHYDRATE METABOLISM, PENTOSE PHOSPHATE PATHWAY, HYPOGLYCEMIA, DAB, RAT (4375)
  - CARCINOGENS, HEPATOMA, MECHANISM (4436)
  - ETHIONINE, NUCLEOTIDE, MITOCHONDRIA, MICROSOME (6812)•
  - MICROSOMAL HYDROXYLATION, 2-ACETAMIDOFLUORENE, 3-METHYLFLUORENE (7525)•
  - MUSCLE TYPE ALDOLASE, AZO DYE (6831)•
  - STERIGMATOCYSTIN, PATHOLOGY, BANTU HEPATOMA (6769)•
- HEPATOCYTE
  - CARCINOGEN, TUMOR (4367)•
  - CLASSES, NUCLEAR CLASSES, RELATIONSHIP, MICROCELL STUDY (3057)
  - CORTICOSTEROID, BILE (3221)
  - CULTURE, YEAST PROTEIN CONCENTRATE (3821)
  - DAMAGED, BSP UPTAKE, KINETICS (0109)
  - GLYCOGEN, ELECTRON MICROSCOPY (3047)
  - HEMOGLOBIN UPTAKE, RAT (3115)
  - HEMOLYTIC ANEMIA, ERYTHROCYTE (0735)•
  - HYPOACTIVE, HYPERTROPHIC SMOOTH ENDOPLASMIC RETICULUM, CHOLESTASIS INTRAHEPATIC OBSTRUCTION (0555)
  - LIVER, ANTICYTOLYTIC (1729)
  - LOW PRESSURE, FATTY ACID, METABOLISM (3045)
  - MITOCHONDRIA, NUCLEUS, LYSOSOME, STEATOSIS, COPPER, WILSON'S SYNDROME (2799)•
  - MITOCHONDRIAL ENZYMES, DEVELOPMENT (7931)
  - POISON, LIGHTING GAS, MITOCHONDRIA, METABOLISM (4154)
  - STRUCTURE, KANECHLOR POISONING (4454)
  - ULTRASTRUCTURE, CASTRATION, METHYLTESTOSTERONE, RATS (0022)
  - ULTRASTRUCTURE, METABOLISM, VACUOLATION, OXYGENATION (6849)
- HEPATOMA
  - AMINO ACID DIET, SERUM DEHYDRATASE SYNTHESIS (3941)•
  - AMINO ACID TRANSPORT, RADIOISOTOPE UPTAKE (0764)•
  - ASCITES, MITOCHONDRIA, GLUTAMATE OXIDATION (2079)
  - ASCITES TRANSPLANT, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (8684)
  - ATPASE, ION DEPENDENCE (0829)•
  - AZO DYE-INDUCED, NUCLEOLAR 45 S RNA, NUCLEOTIDE COMPOSITION, RAT (3590)
  - BANTU, HEPATOCARCINOGENESIS, STERIGMATOCYSTIN, PATHOLOGY (6769)•
  - B-PROPIOLACTONE, SUCKLING MICE (8637)•
  - CANCER, AFLATOXIN DIET, CARCINOGEN, RAINBOW TROUT (0146)
  - CANCER, SERUM ZINC LEVEL, LIVER (1347)•
  - CELL, LIVER, THIOACETAMIDE, EMBRYO (3908)•
  - CELL CULTURE, ENZYME-INDUCTION (0097)•
  - CHROMATIN, NUCLEI, RNA, DNA (6287)•
  - CHRYSOIDIN, TRANSPLANTABLE, CROCKER SARCOMA, MICE (0559)
  - CIRRHOSIS (4361)•
  - DIAGNOSIS, LIVER ARTERIOGRAPHY (7213)•
  - DNA POLYMERASE, NUCLEIC ACID METABOLISM (1728)
  - ENZYME ACTIVITY, ADENYLATE KINASE, ISOZYMES (3810)•
  - FETALPROTEIN (3557)
  - HEPATECTOMY, REGENERATION, BILIARY DUCT (1391)
  - HEPATOCARCINOGENESIS, NUCLEOTIDE LEVEL MITOCHONDRIA (6812)•
  - HEXOKINASES, DEHYDROGENASES, PENTOSE-PHOSPHATE CYCLE (7547)
  - HISTONE PHOSPHORYLATION, ASCITES CELLS, LYSINE-RICH FRACTION, RAT (0153)
  - HUMORAL ANTIBODY, ISOANTIGENIC IMMUNOFLUORESCENCE (1591)•
  - ISOLATED, RECURRENCE, TREATMENT, ADOLESCENT (0554)
  - LIPID METABOLISM, ENZYMES, MICE (3042)
  - LIVER, ARGININE INCORPORATION, RAT, IN VITRO (7946)
  - LIVER, ASCITES (3561)
  - LIVER, ELECTRON SPIN RESONANCE, AMIMENOACETYL FLUORENE (1759)
  - LIVER, PROTEIN ELECTROPHORESIS (2203)•
  - LIVER, SYMPOSIUM (1378)
  - LIVER ALDOLASE, MUSCLE ALDOLASE, ANTIBODIES (1703)•
  - LIVER METASTASIS, ULTRASTRUCTURE, CHICK EMBRYO (8050)
  - LIVER PROTEIN, RIBOSOMAL (1623)
  - MALIGNANT, BIOLOGIC TEST (4073)
  - MEMBRANE, ELECTRON MICROSCOPY, ENZYMES (6292)•
  - MICROSOMAL FACTOR, PROTEIN SYNTHESIS (2064)
  - MICROSOME, HYDROXYLATION, 3-METHYCHOLANTHRENE, 2-ACETAMIDOFLUORENE (7325)•
  - MICROSOME, MITOCHONDRIA, LIPIDS (8287)
  - MITOCHONDRIA, DNA (3549)•
  - MORRIS, LIVER, HOST, ENZYME, BENZPYRENE HYDROXYLASE, METHYLCHOLANTHRENE, RAT (3935)•
  - MORRIS, NEOPLASM (4387)
  - MORRIS 5123, LIPID COMPOSITION, CYTOPLASMIC FRACTION (2077)
  - 9098, 7794A, 9618A, LACK OF ADAPTATION, LIPOGENESIS (1766)
  - NOVIKOFF, ASCITES, RNA, NUCLEUS (6781)•
  - NUCLEIC ACID SYNTHESIS, DNA, ISOPROTERENOL (2322)
  - PEROXISOMAL ENZYMES (7033)•
  - RIBONUCLEOTIDE REDUCTASE, TUMOR GROWTH RATE (8636)•
  - SERUM ALBUMIN PRODUCTION, HYDROCORTISONE, CELL CULTURE, RAT (0137)
  - TISSUE CULTURE, STEROID STRUCTURE, TYROSINE AMINOTRANSFERASE (7900)•

- HEPATOMEGALY
  - BLOOD, GLYCOGEN STORAGE (4365)•
  - DIABETIC ACIDOSIS, PANCREAS (2833)
  - EPIDEMIOLOGY, CLINICAL PATTERN (1349)•
  - JAUNDICE, ABSCESS (4686)
- HEPATOPATHIES
  - ICTOGENIC, TRYPSIN, CHYMTRYPSIN, JAUNDICE (1376)
- HEPATOSCLEROSIS
  - CIRRHOSIS, HYDROXYPROLINE, HEPATECTOMY, RAT (0157)
- HEPATOSPLENOMEGALY
  - PARASITOLOGY, MESENTERY (4671)
- HEPATOTOXICITY
  - CARBON TETRACHLORIDE, HEPATOBILIARY DUCT (1417)•
  - CC14, HEPATITIS, ACUTE NON-VIRAL (8331)
  - ETHANOL, AMITRYPTALINE POTENTIATION (0848)•
  - MICROSOMAL METABOLISM, CC14, INHIBITION (8345)
  - NITROSTIGMINE, OBIDOXIME (TOXOGONIN) (4451)
  - PARENCHYMA, HEPATIC VEIN, ANTIGEN-ANTIBODY COMPLEX (6853)
- HEPATOTOXIN
  - ALCOHOL, LIVER METABOLISM (0869)
- HERNIA
  - BONE, VITAMIN D DEFICIENCY, MALABSORPTION (5892)
  - BOWEL, FORAMEN OF WINSLOW, DIAGNOSIS (3429)
  - BOWEL, REPAIR, IRREDUCIBLE (8904)
  - CONGENITAL, CYANOSIS, NEONATE, ASPHYXIATION (5049)
  - CRURAL, SURGERY, DIAGNOSIS, RESECTION (2743)
  - DIAPHRAGM, LIVER (4418)
  - DIAPHRAGMATIC, BOCHDALEK, SURGERY (6210)
  - DIAPHRAGMATIC, DETECTION, PRODUCTION (2543)•
  - DIAPHRAGMATIC, RETROSTERNAL (0241)
  - ESOPHAGEAL, GASTRIC TUMOR, STENOSIS, DUODENUM, DIVERTICULUM (5802)
  - ESOPHAGEAL, HIATUS, ANEMIA, SURGERY (4091)•
  - ESOPHAGEAL, HIATUS, SURGERY (5747)
  - ESOPHAGEAL-GASTRIC, DIAGNOSIS, SURGERY, MANOMETRY (5718)
  - EVISCERATING, SUTURE SINUS (6173)
  - FEMORAL, APPENDIX, ABSCESS (5113)
  - FEMORAL, INTESTINAL INJURY (1186)
  - HIATAL, BELSEY REPAIR, REFLUX ESOPHAGEAL STRICTURE (3321)
  - HIATAL, DIAGNOSIS, ESOPHAGEAL MANOMETRY (7229)
  - HIATAL, DIAPHRAGM, STOMACH CANCER (0997)
  - HIATAL, ESOPHAGEAL, PEPTIC ULCER, LUNG, PERFORATION (8815)
  - HIATAL, ESOPHAGEAL REFLUX, SURGERY, PHYSIOPATHOLOGY (0996)
  - HIATAL, ESOPHAGEAL STENOSIS, SURGERY DIGESTIVE (1011)
  - HIATAL, ESOPHAGITIS, EROSIVE (0983)
  - HIATAL, ESOPHAGITIS, MORPHOLOGY, ETIOLOGY, DIAGNOSIS (8064)
  - HIATAL, ESOPHAGOSCOPY, FUNDOPLICATION, ENDOSCOPY, NISSEN, PYLOROPLASTY, ULCERS, HEMORRHAGE (5739)
  - HIATAL, ESOPHAGUS (2559)
  - HIATAL, ESOPHAGUS, DIAGNOSIS, TREATMENT (5753), (7316)
  - HIATAL, ESOPHAGUS, DYSRHYTHMIA (2563)
  - HIATAL, ESOPHAGUS, PEPTIC ULCERATION, CORROSIVE BURNS (1009)
  - HIATAL, ESOPHAGUS, STOMACH AND TRANSVERSE COLON INVOLVEMENT (8080)
  - HIATAL, ESOPHAGUS, STRICTURE (2558)
  - HIATAL, FUNDOPLICATION, GASTROESOPHAGEAL, SPHINCTER FUNCTION, MANOMETRY (8817)
  - HIATAL, GASTRIC REFLUX (4115)
  - HIATAL, GASTROESOPHAGEAL REFLUX, ESOPHAGITIS, GASTROPEXIA (8818)
  - HIATAL, GASTROESOPHAGEAL REFLUX, HISTAMINE, PENTAGASTRIN (3313)•
  - HIATAL, GASTROESOPHAGEAL REFLUX, MANOMETRY (0238)
  - HIATAL, GASTROPEXY, DELAYED RESULTS (8061)
  - HIATAL, HILL SUTURE (5745)
  - HIATAL, INFANTS, CHILDREN, CONGENITAL, SUB-DIAPHRAGMATIC, MALFORMATION, CARDIA, GASTRIC EVACUATION (5738)
  - HIATAL, LOWER ESOPHAGEAL RING, SURGERY (5741)
  - HIATAL, OCCULT BLOOD LOSS, ULCERATIVE COLITIS (5684)
  - HIATAL, PREGNANCY, EMESIS, ULCER (4100)
  - HIATAL, RECURRENCE (1067)
  - HIATAL, RECURRENT, CLINICAL SYMPTOM, RADIOLOGIC SYMPTOM (2574)
  - HIATAL, RECURRENT, TREATMENT (2573)
  - HIATAL, REFLUX, GASTROESOPHAGEAL, BELSEY REPAIR (0985)
  - HIATAL, REFLUX, SPHINCTER PRESSURE (5649)•
  - HIATAL, SMALL INTESTINE, DIAGNOSIS (0947)•
  - HIATAL, STOMACH, ANTICHOLINERGIC (1828)
  - HIATAL, STOMACH, ESOPHAGUS (1827)
  - HIATAL, SURGERY, ADULT (4118)
  - HIATAL, SURGERY, ANATOMOPATHOLOGY, ADULTS (8799)
  - HIATAL, SURGERY, ANTERIOR GASTROPLEXY (1847)
  - HIATAL, SURGERY, GASTROPLEGIA, TREATMENT (1066)
  - HIATAL, SURGERY, MAN (0235)
  - HIATAL, SURGERY, VAGOTOMY (2557)
  - HIATAL, SURGERY, VAGOTOMY, GASTRIC ACIDITY (8807)
  - HIATAL, TUBERCULOSIS, ESOPHAGUS (4106
  - HIATAL, VAGOTOMY, PERFORATION, ESOPHAGUS (1007)
  - HIATUS, COEXISTING DUODENAL ULCER, TREATMENT (3325)
  - HIATUS, DUODENAL BIOPSY TECHNIQUE (3290)
  - HIATUS, ESOPHAGITIS, REFLEX, SURGERY (2568)
  - HIATUS, GASTROINTESTINAL HEMORRHAGE (3729)

  HIATUS, NECK, ULCERS, MAN (0267)
  HIATUS, SLIDING, ESOPHAGUS (3335)
  HIATUS, SMALL AXIS, RADIOLOGY, MORPHOLOGY (4092)•
  HIATUS, SURGERY (6584)
  HIATUS, SURGERY, RADIOLOGY (5701)
  HIATUS, THORACIC STOMACH, X-RAY DIAGNOSIS (7288)
  HIATUS, WOMEN, AGED (0299)
  HYPOCHROMIC ANEMIA, THROMBOSIS (6595)
  INCARCERATED INGUINAL, TREATMENT, CHILDREN (2986)
  INGUINAL, BLUNT TRAUMA, RUPTURED ILEUM, PERITONITIS (1957)
  INGUINAL, CHYLOUS ASCITES, INFANT, LYMPHATICS (6207)
  INTERNAL, DIAGNOSIS, ANGIOGRAPHY, FOSSA (3278)
  INTERNAL, THROUGH MESENTERY, MECKEL'S DIVERTICULUM (3423)
  INTESTINE, INCARCERATED FORAMEN OF WINSLOW (8974)
  IRREDUCIBLE, LARGE INTESTINE, OBSTRUCTION (8121)
  LIVER, DIAGNOSIS, SCAN (4031)
  LIVER, NEONATE (6037)
  LUMBAR, PELVIC COLON, REPAIR (6722)
  OBTURATOR, ILEUS, DUODENOJEJUNAL OBSTRUCTION (1167)
  PARADUODENAL, INTESTINAL OBSTRUCTION (4218)
  PARADUODENAL, INTESTINAL OCCLUSION, SURGERY (8148)
  PARAESOPHAGEAL, RUPTURE, PYLORUS (4970)
  PRIMARY PERINEAL, RECTAL DEFECT (0312)
  RECTAL, DIAGNOSIS, SURGERY (7462)
  RUPTURE, SMALL INTESTINE (1196)
  TRANSVERSE COLON, RADIOLOGY, ANATOMOPATHOLOGY (8949)
ETEROTOPIA
  EPITHELIUM, ESOPHAGUS, HISTOLOGY (4123)
  EPITHELIUM, THYROID, GASTRIC, GALLBLADDER, MUCIN HISTOCHEMISTRY (0660)
  PANCREAS, INSULAR CARCINOMA (6742)
  PANCREAS, PHYSIOPATHOLOGY, SURGERY (8235)
EXOSAMINE
  BILE, GALLBLADDER, GALLSTONES, INDUCED CHOLELITHIASIS, RABBITS (1457)•
IDATIDOSIS
  LABORATORY EXAMINATION, DIAGNOSIS (1815)
IRSCHSPRUNG'S DISEASE
  COLON, DILATATION, PERISTALSIS, ACETYLCHOLINESTERASE (6717)
  COLON, DIVERTICULUM, ATRESIA, PANCREAS (3480)
  COMPLICATION (2752)
  CONGENITAL MEGACOLON, SURGERY, FUNCTIONAL RESULTS (8950)
  DWARFISM, DYSTROPHIC, FAMILIAL, CHILDREN (0476)
  EARLY DIAGNOSIS, CONGENITAL AGANGLIONIC MEGACOLON, COLOSTOMY (8961)
  LARGE INTESTINE, GANGLION CELLS, COLOSTOMY, INFANT (4266)•
  PRIMARY MEGARECTUM, SURGERY, CHILDREN (8966)
  SHORT SEGMENT, ANORECTAL MYOMECTOMY, CHILDREN (1257)
  SWANSON-HIATT OPERATION, RADIOLOGY, POSTOPERATIVE COMPLICATIONS (0460)
  TOTAL COLON, SMALL BOWEL, REFLUX, NEONATES (1970)•
HISTAMINE
  ANTAGONIST, ANOREXIA NERVOSA (2994)
  BIOSYNTHESIS, PYRIDOXINE, HISTIDINE (6403)
  CATHECHOLAMINES, STOMACH, LUNG (0796)•
  CHOLEDOCHOJEJUNOSTOMY, DOG, GASTRIC SECRETION, ACIDITY (2387)
  COMPOUND 48/80, SINOMENINE, TOLUIDINE BLUE, MAST CELLS (6283)•
  DUODENAL ULCER, GASTRIC ULCER, ACIDITY TITRATION, BLOOD GROUP ABO, BLOOD GROUP ABH, SECRETION (2594)
  ESOPHAGUS, STOMACH, DUODENUM (3146)
  FORMATION, ENZYMES, STOMACH (0798)•
  GASTRIC ACID SECRETION, STOMACH (0787)•
  GASTRIC CONTENT, STOMACH CONTENT, NITROGEN FRACTION (2383)
  GASTRIC SECRETION, BETAZOLE HYDROCHLORIDE (8878)
  GASTRIC ULCER, PROMETHAZINE, NSD 1055 (6615)•
  HISTALOG, ACID SECRETION, GASTROINTESTINAL DISEASES (7324)•
  HISTAMINERGIC ACTION, ILEUM (3131)
  ILEUM, PH (3126)
  INFUSION, STOMACH, PEPTIC ULCER (1111)•
  LOW DOSAGE TESTS, PRIMARY GASTRIC SECRETIONS, GASTRIC BUFFER (1680)
  METABOLISM, STOMACH, SECRETION (0802)•
  METABOLISM, ULCER, CALCIUM, GASTRIC MUCOSA (2640)
  PENTAGASTRIN, GASTRIC ACID SECRETION MAXIMAL RESPONSE, SIDE EFFECTS (1670)•
  RESISTANCE, ANACIDITY, GASTRIC MUCOSA (4161)
  SECRETION, ACID, PEPSIN (6394)•
  SECRETION, STOMACH, PENTAGASTRIN (3149)
  SERUM PEPSINOGEN, GASTRIC SECRETION, POLAROGRAPHY (2384)
  STIMULATION, GASTRIC SECRETION, IRON BINDING CAPACITY (3390)•
  STOMACH, DUODENUM, PH ANTRO-FUNDAL REGION (1723)•
  STOMACH, GALLBLADDER, PANCREAS, MAN, ANIMALS (0007)•
  STOMACH, GASTRIC JUICE (0794)•
  STOMACH, MUCOSA, HISTOCHEMISTRY (0071)•
  STOMACH, SECRETION, PEPSIN (3137)•
  TEST, MAXIMAL, GASTRIC PUNCTURE BIOPSY, HYPERTHYROIDISM, MOTILITY (3275)
  ULCER, DUODENUM, CARBACHOL, PENTAGASTRIN (7386)•
  VASODILATOR, ARTERIOVENOUS SHUNTING, PULMONARY CIRCULATION (6875)•

- HISTOCHEMISTRY
  - ADRENAL GLANDS, CIRRHOSIS (7647)
  - AUTORADIOGRAPHY, FREE PHOSPHATE, LIVER PARENCHYMA, RAT (8521)
  - CHOLESTASIS, SERUM BILIRUBIN, INTRACELLULAR GRANULES (7532)*
  - COLON, LIPIDS, LARGE INTESTINE (1582)*
  - GASTRIC MUCOSA, CARBONIC ANHYDRASE, RAT (8589)
  - LIVER, ANESTHESIA, RNA (1584)
  - LIVER, CELL MEMBRANE, IRON METABOLISM, FERRITIN STORAGE, METHIONINE, GLUCAGON, CYTOCAVITY NETWORK (3797)*
  - LIVER, CYTOPLASM, NUCLEUS, HORMONE, TRANSPORT, CORTISOL (3814)*
  - LIVER, ENZYME ACTIVITY, MITOCHONDRIA, PHOSPHOENOLPYRUVATE CARBOXYKINASE, HYDROCORTISONE (3805)*
  - LIVER, HEPATOCYTE, BILE CANALICULI, ASPERGILLUS PARASITICUS, PATHOLOGY (4444)*
  - LIVER, MITOCHONDRIA, BINDING, TRIMETHYLTIN, THRIETHYLTIN (6444)*
  - LIVER, NUCLEI, HYDROLASES, ACTIVITY, DISTRIBUTION, LYSOSOMES (3799)*
  - LIVER, NUCLEUS, ENZYME, ACTIVITY, PALMITOYL-COA (3803)*
  - LIVER, THIOPENTAL (7980)
  - NOVIKOFF, HEPATOMA, ASCITES, RNA (6781)*
  - RECTAL MUCUS, SUCTION BIOPSY, CYSTIC FIBROSIS, PANCREATIC DISEASE (4329)*
- HISTOLOGY
  - CLASSIFICATION, GASTRIC CARCINOMA (7344)
  - DUODENUM, HETEROTOPIC GASTRIC MUCOSA, PEPTIC ULCER (5826)*
  - ENDOTHELIUM, PANCREAS, PERMEABILITY, HORSERADISH PEROXIDASE (4770)
  - EPITHELIUM, BILE DUCT, ULTRASTRUCTURE (4752)
  - EPITHELIUM, INTESTINE, LIPID, ULTRASTRUCTURE (4722)
  - EPITHELIUM, JEJUNUM, NEUTRAL AMINO ACID (5500)
  - EPITHELIUM, REGENERATION, VIRAL HEPATITIS (5264)
  - EPITHELIUM, SMALL INTESTINE, CELL SUSPENSION (5467)
  - GALLBLADDER, TECHNIQUE, CHOLESTEROLOSIS, ADENOMYOMATOSIS, HYPERPLASIA (4527)*
  - GASTRIC MORPHOGENESIS, MUCOSA, MESENCHYMES ORGAN SPECIFICITY, RABBIT EMBRYO (4734)
  - GASTRIC MUCOSA, GASTRIC HYPOACIDITY, RHEUMATOID ARTHRITIS (8537)
  - GASTRIC ULCER, ACUTE, POTASSIUM CHLORIDE (2655)
  - HISTOCHEMISTRY, ASCITES HEPATOMA, AH 13, AH 39, ENZYME ACTIVITY, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS (5987)*
  - HISTOCHEMISTRY, GLYCOGEN, LIVER, DAB CARCINOGENESIS (6316)
  - HISTOCHEMISTRY, HISTAMINE, MAST CELLS (6330)
  - HISTOCHEMISTRY, LARGE INTESTINE, MUCOSA, PEROXIDASE ACTIVITY, MUCUS-SECRETING CELLS, CRYPTS (5439)*
  - HISTOCHEMISTRY, LIVER, ENZYME, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)*
  - HISTOCHEMISTRY, LIVER, MITOCHONDRIA, ENZYME ACTIVITY, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)*
  - HISTOCHEMISTRY, LIVER, MITOCHONDRIA, MEMBRANE, MONOAMINE OXIDASE, ENZYME MARKER (5440)*
  - HISTOCHEMISTRY, LIVER, TRANSPLANT (6823)
  - HISTOCHEMISTRY, SMALL INTESTINE, MUCOSA, SUBCELLULAR FRACTIONS, DIHYDROSPHINGOSIN, PALMITIC ACID (5616)*
  - IDIOPATHIC ULCERATIVE COLITIS, HEMORRHAGE, ENDOSCOPY (8994)
  - INTESTINAL ABSORPTION, GLUCOSE, 5-FLU
    OROURACIL EFFECT (7840)
  - INTESTINAL EPITHELIUM, EXPERIMENTAL INFECTION, E.COLI (8475)
  - INTESTINE, MUCOSA, HISTOCHEMISTRY, RADIATION, RAT (4698)*
  - JEJUNO-ILEITIS, CHRONIC, PERITONITIS, RADIOLOGY (4232)
  - LIVER, FETAL AND ADULT STAGE, MAN (8535)
  - LIVER, FOLLICULAR HEPATITIS, AUTOIMMUNIZATION (5668)
  - LIVER, FUNCTION, PULMONARY TUBERCULOSIS (6988)
  - LIVER, HEPATIC INJURY, CARDIOPATHOGENIC DIET, ATP-SPOFA (5993)*
  - LIVER, ULTRASTRUCTURE, BIOCHEMISTRY, HEMORRHAGIC SHOCK (1575)*
  - LIVER ALTERATIONS, ENDOCRINE DISORDER
    RAT (8536)
  - LIVER CELL, JUVENILE RHEUMATOID ARTHRITIS, HEPATOMEGALY (8267)*
  - LIVER HILUM, CARCINOMA (6825)
  - PANCREAS, EXOCRINE, HEDGEHOG, HIBERNATION (2320)
  - PANCREATITIS, ETIOLOGY, PATHOGENESIS (8245)
  - PYLORUS, EPITHELIUM, ULTRASTRUCTURE, CAT (6314)
  - RECTAL MUCOSA, MICROSCOPY, SMALL INTESTINE (5679)
  - SMALL INTESTINE, MUCOSA, EVERTED SACS
    MORPHOLOGICAL CHANGES, ABSORPTION (3798)*
  - SMALL INTESTINE, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION, ULCERATIVE COLITIS, BIOPSY, MUCOSA (4939)
- HISTONE
  - LIVER, INSULIN, GLUCAGON, PHOSPHORYLATION (2421)
  - PHOSPHORYLATION, LIVER, HEPATOMA, ASCITES CELLS, RAT (0153)
- HISTOPATHOLOGY
  - ULCERATIVE COLITIS, RELAPSE, AGE, SEX
    (8211)*
- HISTOPHYSIOLOGY
  - INTESTINAL MUCOSA, INTESTINAL ABSORPTION (9568)

HISTOPLASMOSIS
- SMALL INTESTINE, ACUTE OBSTRUCTION (1952)

HODGKIN'S DISEASE
- FEVER, LYMPH NODES, IRRADIATION (6539)

HOMOGRAFT
- ESOPHAGUS (4112)
- JEJUNAL, GASTRECTOMY, GASTRIC FUNCTION RADIOLOGY (7352)
- KIDNEY, LIVER, IMMUNOSUPPRESSION, COLONIC COMPLICATIONS (1259)

HOMOTRANSPLANT
- AUXILIARY, LIVER, DOG (1345)*
- LIVER, COAGULATION, FIBRINOLYSIS (2453)
- LIVER, COLON PERFORATION AND ULCERATION (1225)*
- LIVER, REJECTION, BILIRUBIN, ENZYME (6767)*
- SMALL INTESTINAL, IMMUNOLOGIC REJECTION RESPONSE (3234)

HOOKWORM
- ANEMIA, VITAMIN B12, IRON DEFICIENCY (2258)
- PIGMENT GRANULE, PROTEIN, HEMOGLOBIN (3794)*

HORMONE
- ADRENAL STEROIDS, ENZYME-INDUCTION (0097)*
- ANGIOTENSIN, BRADYKININ, GASTRIC SECRETION, MUCOSA, CALCIUM IONS, ELEDOISIN (4805)
- ANGIOTENSIN, HEPATIC INACTIVATION, SODIUM, RENAL ARTERY COMPRESSION (7143)*
- BINDING, EPINEPHRINE, GLUCAGON, ADENYL CYCLASE (6447)*
- BRADYKININ, GASTRIC SECRETION (5539)
- CHOLECYSTOKININ, MOTOR ACTIVITY CONTROL, DIGESTIVE TRACT, BILIARY TRACT, DOG (0175)
- CHOLECYSTOKININ, OCTAPEPTIDE, ILEUM, GALLBLADDER, CONTRACTION (4794)*
- CHOLECYSTOKININ, SMALL BOWEL PERISTALSIS, ACCELERATION, CONTRAST STUDY (5694)
- CORTICOSTERONE, RETICULOENDOTHELIAL SYSTEM, DRUG METABOLISM (6472)
- CORTISOL, LIVER, PROTEIN SYNTHESIS, IN VIVO, IN VITRO, AMINO ACID INCORPORATION, RAT (4834)*
- CORTISOL, LIVER GLUCONEOGENESIS, TRANSAMINASES (9046)
- CORTISONE, EFFECT, RNA SYNTHESIS, LIVER, RAT (4824)*
- ECDYSTERONE, STIMULATORY EFFECT, RIBONUCLEIC ACID, OROTIC ACID, ACTINOMYCIN D (0857)
- ESTRADIOL, ESTRONE, LIVER, METABOLISM (6449)*
- ESTROGEN, ANABOLIC EFFECTS, CLOMIPHENE INHIBITION, LIVER (3616)
- ESTROGEN, CHOLESTASIS INDUCTION, PREGNANCY (6783)
- ESTROGEN METABOLISM, CIRRHOSIS, CHROMATOGRAPHY, MAN (2160)
- ESTROGEN METABOLISM, LIVER CIRRHOSIS (8383)
- FETAL LIVER, FORMATION, IN VITRO (5605)
- GASTRIN, ANTRAL MUCOSA, MOTILITY, HISTAMINE, PENTAGASTRIN (4808)
- GASTRIN, C-TERMINAL TETRAPEPTIDE, SECRETION (7867)
- GASTRIN, GASTRIC SECRETION, FROG, VAGOTOMY (5537)
- GASTRIN, MUCOSAL RECEPTORS, ANTICHOLINERGICS, ANTRECTOMY (5532)*
- GASTRIN, PENTAGASTRIN, WATER-SOLUBLE EXTRACT, HOG ANTRAL MUCOSA, HISTAMINE CONTENT (5530)*
- GASTRIN, PLASMA, HUMAN, HEPATADECAPEPTIDE GASTRIN, SIZE, CHARGE (5547)
- GASTRIN, RELEASE, VAGOTOMY, ANTRAL DISTENTION (5540)
- GASTRIN, SECRETIN, PANCREATIC CHOLERAIC SYNDROME, TUMOR, BLOOD, EXTRACT, BIO-ASSAY (6156)*
- GASTRIN, SECRETION, FROG, ACID, PEPSIN (5549)
- GASTRIN, STOMACH, PERFUSION, RAT (2377)
- GASTRIN, ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS, BIOASSAY (4921)
- GASTRIN-LIKE TETRAPEPTIDE, ESOPHAGUS, RECONSTRUCTION, GASTROINTESTINAL TUBES (4798)
- GASTRIN PENTAPEPTIDE, STOMACH, SEROSA, ELECTRICAL ACTIVITY, MOTILITY (5514)*
- GASTROINTESTINAL TRACT DISEASE, PEPTIC ULCER, GASTRIC JUICE, PEPSIN (2955)
- GLUCAGON, AMINO ACID TRANSPORT, LIVER SLICE (5493)*
- GLUCAGON, EPINEPHRINE, CORTISOL (0862)
- GLUCAGON, 5-HYDROXYTRYPTAMINE GASTROINTESTINAL TRACT, HISTOCHEMISTRY (3032)*
- GLUCAGON, INSULIN, GLUCOSE REPRESSION LIVER, RAT (1735)
- GLUCAGON, INTESTINE, SECRETION, INSULIN, DOG (5614)*
- GLUCAGON, PENTAGASTRIN, HISTAMINE, GASTRIC SECRETION (8595)
- GLUCAGON, SECRETION, EXOCRINE, PANCREAS, ENZYMES, GLUCOSE (5552)*
- GLUCOCORTICOID, LIVER NUCLEI, RNA CONTENT (7155)*
- GROWTH, BOVINE, LIVER, LIPID METABOLISM, HYPOPHYSECTOMY, RAT (4838)*
- GROWTH, LIVER, ORNITHINE DECARBOXYLASE (7108)*
- GROWTH, PLASMA LEVEL, GASTRECTOMY (7322)*
- HYDROCORTISONE, INDUCTION, ENZYME, LIVER (2415)*
- HYPOPHYSECTOMY, ABSORPTION, SMALL INTESTINE, WATER, CHLORIDE, SODIUM, GLUCOSE, RAT (4756)*
- INSULIN, CHRONIC PANCREATITIS, ORAL GLUCOSE LOADING (8250)
- INSULIN, DIABETES MELLITUS, CHRONIC PANCREATITIS (8249)
- INSULIN, HEPATIC ENZYMES, DISULFIDE BONDS, NADH, HADPH, GLUTATHIONE

REDUCTASE, SULFHYDRYL CONTENT (4688)*
INSULIN, METABOLISM, OBESITY, GLUCOSE, JEJUNOILEOSTOMY (5865)
INSULIN, PROTEOLYSIS INHIBITION, VALINE TURNOVER, LIVER PROTEIN METABOLISM (4837)*
LIVER, MICROSOMES, TESTOSTERONE, THYROIDECTOMY, THYROXINE (3954)*
LIVER FUNCTION, ESTROGENS, BILE DUCT FUNCTION (6490)
LIVER TRANSPORT, CORTISOL, CYTOPLASM, NUCLEUS, TRACER STUDIES, BINDING SITES (3814)*
OVARIAN, 32P-INCORPORATION, LIVER, MAMMARY GLAND (3961)
PANCREAS, TUMOR (2772)
PANCREOZYMIN, ALCOHOLIC, CIRRHOSIS, PANCREATIC FUNCTION, AMYLASE, LIPASE, SECRETIN (5278)
PANCREOZYMIN, CALCIUM EXCRETION, DOG PANCREAS (8602)
PANCREOZYMIN, PANCREATITIS, GLUCOSE TOLERANCE, CARCINOMA, SERUM LIPASE, AMYLASE (4938)
PARATHYROID, PANCREATIC FUNCTION, SECRETIN-PANCREOZYMIN (6936)*
PENTAGASTRIN, GASTRIC FISTULA, HISTAMINE (6406)
PENTAGASTRIN, GASTRIC SECRETION (6542)
PENTAGASTRIN, GASTRIC SECRETION, GASTRIC ACID, PEPSIN, HEXAMETHONIUM (5535)*
PENTAGASTRIN, GASTRIC SECRETION, STIMULATION, INHIBITION, ANTI-GASTRIN, RAT (4807)*
PENTAGASTRIN, STIMULATION, GASTRIC ACID SECRETION (5019)*
PENTAGASTRIN INACTIVATION, HUMAN SERUM LIVER HOMOGENATE, RAT (8596)
PITRESSIN, POST-HYPOPHYSEAL EXTRACT, SURFACE MUCOSAL CELLS, LESIONS (5764)*
PITUITRIN, SMALL INTESTINE, MOTILITY (7085)
PORTACAVAL SHUNT, GASTRIC HYPERSECRETION (8370)*
PROSTAGLANDIN E, BRADYKININ, DUODENUM, ISOLATED, MOTILITY, RAT (4797)*
PROSTAGLANDIN E., GASTRIC SECRETION, MAN (8581)*
REGULATION, TRNA, HYPOPHYSECTOMY, LIVER (6482)
SECRETIN, GASTRIC SECRETION, HISTAMINE STIMULATED, INHIBITION (2368)*
SECRETIN, GASTRIN, STOMACH, ANTRAL MUCOSA, CHROMATOGRAPHY (5528)*
SECRETIN, JORPES NATURAL SECRETIN, SYNTHETIC POLYPEPTIDE SECRETIN, SMALL INTESTINE, MOTILITY, MYOELECTRIC ACTIVITY (5519)*
SECRETIN, PANCREATIC PERFUSION, DOG (6414)
SECRETIN, PANCREATIC SECRETION, AMYLASE, LIPASE (5825)*
SECRETIN, SECRETION, GASTRIC FISTULAS (0801)*
SEX, GLYCOLYTIC ENZYME ACTIVITY, JEJUNUM, RAT (5619)*
SMALL INTESTINE, MOTILITY, CHOLECYSTOKININ-PANCREOZYMIN, SECRETIN (5516)*
STEROID, DIABETIC MOTHERS, URINE, LACTATE, PYRUVATE, ENZYMATIC SYSTEM, NEONATE (6240)
STEROID, EXCRETION, BILE, MAN (7837)
STEROID, EXCRETION, FECES (2335)*
STEROID, HYDROXYLATION, LIVER, MORPHINE (7128)*
STOMACH, MUCOSA, ACTH, CORTISONE, FUCOSE (3904)*
STOMACH, MUCOSA, EXFOLIATION, ACTH, CORTISONE, DRUGS (3909)*
STOMACH, ULCER, TESTOSTERONE, ESTRONE, FISTULA, HISTAMINE, SECRETION, PEPSIN, RAT (4183)*
TETRAGASTRIN, GASTRIC SECRETION (6404)
THYROID, COENZYME, FOLATE, LIVER, RAT (2426)
THYROID, MITOCHONDRIA, PROTEIN TURNOVER (6291)*
THYROID, RIBOFLAVIN, MITOCHONDRIA, ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE (7178)
THYROXINE, CARBON, INCORPORATION, TADPOLE, LIVER (2448)
THYROXINE, METAMORPHOSIS, LIVER ULTRASTRUCTURE, TADPOLE (5465)
THYROXINE, THYROID FUNCTION, LIVER INJURY (8319)*
2-PHENYL-2-(2-PYRIDYL)-THIOACETAMIDE, GASTRIC SECRETION, DOG (3134)*
VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, SPLEEN, LIVER, INTESTINE (6509)
VASOPRESSIN, LIVER, BLOOD FLOW (0863)

HYDATID CYST
  COMPLEMENT, DIAGNOSIS, LIVER (4687)
  ECHINOCOCCUS GRANULOMOUS, TRANSMISSION (9261)*
  LIVER, OBSTRUCTIVE JAUNDICE, CYST PERFORATION (9276)

HYDATIDOSIS
  DIAGNOSIS, PROGNOSIS, IMMUNOLOGIC TESTS (3788)
  HEPATIC, JAUNDICE (1536)
  HYDATID CYST, DIAGNOSIS, LIVER, LUNG (3007)
  LIVER, GAMMAGRAPHY, SPLENOPORTOGRAPHY (4086)
  THERAPY (0598)

HYDRAZINE
  DERIVATIVES, ENZYME INHIBITION, LIVER, MICROSOME (2298)
  LIVER, PROTEIN, METABOLISM (3586)

HYDROCARBON
  POLYAROMATIC, AIRBORNE DUST EXTRACTS, BENZO (A) PYREN BREAKDOWN, MICROSOMAL ENZYMES, LIVER, RAT (3183)
  SATURATED, DROPLETS, LIVER, SPLEEN (8523)

HYDROCHLORIC ACID
  DUODENUM, ELECTROLYTE CHANGES (1070)

HYDROCORTISONE
  TYROSINE TRANSAMINASE CONCENTRATION, IMMUNOCHEMISTRY, LIVER, RAT (3076)

HYDROGEN
  ION, INTRACELLULAR ACTIVITY, BODY,

  LIVER, HEART, SKELETAL MUSCLE, RAT (1611)
HYDROPS
  GALLBLADDER, SCARLET FEVER, CHILDREN (1494)
HYMENOLEPIDOSIS
  INTESTINAL ABSORPTION, POTASSIUM IODIDE, SERUM VITAMIN B12, CHILDREN (0362)
HYPERALANINEMIA
  PYRUVICEMIA, PYRUVATE DECARBOXLASE, LIVER (2063)
HYPERBILIRUBINEMIA
  BILIRUBIN, NUCLEAR ICTERUS (2846)
  CONGENITAL, ENZYME DEFECT (9060)
  CRIGLER-NAJJAR DISEASE, CLINICAL PICTURE (3574)
  D-NAPHTHYLISOTHIOCYANATE, TOSICOLOGY (1387)
  ETHANOL, PREVENTION, INFANT (1355)*
  GILBERT'S DISEASE, HEPATITIS, DIFFERENTIATION (0530)*
  GILBERT'S DISEASE, PATHOGENESIS, BILE DUCT (2832)
  JAUNDICE, DUBIN-JOHNSON SYNDROME, LIVER (3646)
  NEONATAL, PHENOBARBITAL (0539)*
  NEONATE, PHOTOTHERAPY, BILIVERDIN, BILIRUBIN (6801)
  NON-HEMOLYTIC, UNCONGUGATED, NEONATE PROTEIN DEFICIENCY, LIVER (0098)*
  POST-HEPATIC, FUNCTIONAL ASPECT, PATHOGENESIS (3670)
  PROTEIN BINDING, CARRIER SYSTEMS, BILIRUBIN, TRANSPORT MECHANISMS (3095)*
  RH IMMUNIZATION, NEONATAL, APPENDICITIS (0442)
  TERATOLOGY, DIGESTIVE TRACT (4612)
HYPERINSULINISM
  ISLET CELL, ADENOMA, DIAGNOSIS, SURGERY (2019)
  PANCREAS, PANCREATECTOMY (2016)
HYPERLIPIDEMIA
  BENZOBROMARONIUM TREATMENT, EFFECT (3660)
  HEPATITIS, SERUM, INFECTIOUS, GRAM-NEGATIVE INFECTION, LIPID CLASS CHANGES (0618)
  UNSTABLE, ALCOHOLIC, ZIEVE'S SYNDROME (3653)
HYPERPARATHYROIDISM
  EXOCRINE PANCREAS, SECRETIN-PANCREOZYMIN (6936)*
HYPERPHOSPHATURIA
  PANCREATITIS, ACUTE, DIAGNOSIS, MAN, DOG (0516)
HYPERPLASIA
  CHOLECYSTOSIS, ANGIOGRAPHY (3663)*
  GALLBLADDER, CHOLESTEROL ACCUMULATION, MORPHOLOGY (9196)
  LYMPHOID, ILEUM, POLYPOSIS COLI, FAMILIAL (2669)
HYPERPLASTIC AGENT
  DELTA-NAPHTHYLISOTHIOCYANATE DIET, ENZYMES, PYRIMIDINE NUCLEOTIDE METABOLISM, LIVER, RAT (3621)
HYPERTENSION
  BENZOBROMARONIUM TREATMENT, EFFECT (3660)
  GUANETHIDINE METABOLISM, DRUG INHIBITION, HEPATIC MICROSOMES (3056)
  LIVER, TRANSPLANTATION (3224)
  MESENTERIC CIRCULATION (3723)
  PORTAL, CIRRHOSIS, COAGULATION, FIBRINOLYSIS, THROMBOCYTOPENIA (0641)
  PORTAL, DIAGNOSIS, AMMONIA TOLERANCE TEST, CHRONIC HEPATITIS, CIRRHOSIS PORTACAVAL SHUNT (0186)*
  PORTAL, ESOPHAGEAL VARICES, SPLEEN TUMOR, GASTROINTESTINAL BLEEDING, PEPTIC ULCER, LIVER CIRRHOSIS (2816)
  PORTAL, HEMORRHAGE, SURGERY (4618)
  PORTAL, LABILE, GASTRO-DUODENAL HEMORRHAGE (4582)
  PORTAL, OMPHALOSYSTEMIC BY-PASS, PROSTHESIS, HEMORRHAGE (1374)
  PORTAL, PANCREATITIS, SPLENOPORTOGRAPHIC STUDY (3539)
  PORTAL, THROMBOSIS, PORTAL VEIN, LAENNEC'S CIRRHOSIS (2137)
HYPERTHYROIDISM
  GASTRIC PUNCTURE BIOPSY, MAXIMAL HISTAMINE TEST, MOTILITY (3275)
  GASTRIC SECRETION, ACID, INTRINSIC FACTOR (1668)*
HYPERTONIA
  STOMACH, VAGUS, RADIOLOGY (1863)
HYPERTROPHY
  OSTEOARTHROPATHY, CIRRHOSIS (4520)
  STOMACH, CARDIA, HYPERTOPHY, FAT, INFILTRATION (0312)
HYPERVITAMINOSIS
  VITAMIN A, LIVER INJURY (2858)*
HYPOGLYCEMIA
  ACUTE, ALCOHOLIC, CHILDREN (3618)
  ALCOHOL, CHILDREN, CONVULSION (3119)
  DIET, CIRRHOSIS, METABOLISM (2149)
  FATTY LIVER, METHIONINE (4446)*
  GALLSTONE, PARASYMPATHETIC (1475)
  GASTRECTOMY, INSULIN (1876)
  GASTRIC SURGERY, INSULIN RESPONSE, CARBOHYDRATE INGESTION (1028)
  HORMONE REPLACEMENT, TOTAL PANCREATECTOMY, PARTIAL HEPATECTOMY, RAT (1692)
  HYPERINSULINISM, EXTRA-PANCREATIC TUMOR (6747)
  INSULIN, CARBOHYDRATES, GASTRIC SURGERY (1028)
  KWASHIORKOR, PROTEIN DEFICIENCY, MALNUTRITION (2197)
  LEUCINE-SENSITIVE, PANCREAS, EXOCRINE, NESIDIOBLASTOSIS (2020)
  PANCREATECTOMY, SURGERY, FRACTURE, DIET, LIPID, GLUCAGON (2781)
  PENTOSE PHOSPHATE PATHWAY, HEPATOCARCINOGENESIS, DAB, RAT (4375)
  SPONTANEOUS, CARCINOMA, STOMACH (0502)
  STOMACH, SECRETION, NERVOUS CONTROL (1675)*
HYPOPHYSECTOMY
  CHOLESTEROL BIOSYNTHESIS, LIVER, IRRADIATION, ADRENALECTOMY, PUROMYCIN (0827)*
HYPOPROTEINEMIA
  EDEMA, MELANOMA, INFILTRATION (6976)

HYPOTHALAMUS
    LIVER, ENZYME ACTIVITY (2401)•
    SECRETION, STOMACH, NERVOUS CONTROL (1675)•
    STIMULATION, SECRETION, GASTRIC ACID PEPSIN, MONKEY (0666)
HYPOTHERMIA
    LOCAL, GASTRIC FUNCTION, DOG (7098)
HYPOTHYROIDISM
    GASTRIC SECRETION, ACID, INTRINSIC FACTOR (1668)•
HYPOXIA
    ELECTRICAL POTENTIAL CHANGES, ACUTE SURGICAL CONDITIONS, LIVER (0816)•
    HEPATIC ARTERY, PORTAL VEIN, MESENTERIC BLOOD FLOW (7995)•
    PRESSURE CHAMBER, ALTITUDE, HEPATIC FAT (7904)•

ICTERUS
    CHOLESTASIS, PROTEIN, PREGNANCY (4426)
    CHRONIC, CRIGLER-NAJJAR SYNDROME, HYPERBILIRUBINEMIA (5182)
    CHRONIC, FAMILIAL FIBRO-ANGIO-ADENOMATOSIS (2183)
    CONGENITAL, SURGICAL MANAGEMENT (4429)
    DIAGNOSIS, GALLBLADDER, LIVER (4035)
    DIAGNOSIS, ILCA TEST (4053)
    GALLSTONES, CHOLECYSTITIS, ADHESIONS PANCREATITIS (0676)
    GRAVIDARUM, DIAGNOSIS, CHOLECYSTATIC (3681)
    HEPATIC PEDICLE, COMPRESSION, TUBERCULOSIS (4410)
    NEONATAL, BILIRUBIN METABOLISM (4406)
    NUCLEAR, BILIRUBIN, HYPERBILIRUBINEMIA (2846)
    OBSTRUCTION, HEMATOIDIN, BILIRUBIN (3685)
    OBSTRUCTIVE, EXTRA-HEPATIC (2937)
    POST-SURGICAL, PRIMARY, HEPATIC INSUFFICIENCY (2939)
    PREGNANCY, OVULATION INHIBITORS (4400)
    PROTRACTED, RELAPSE (4414)
    SEVERE, ACUTE HEPATIC NECROSIS (3141)
    TOLBUTAMIDE TEST, VIRAL HEPATITIS (4483)
ILEAL STENOSIS
    NONTUMEROUS, MAN (0380)
ILEITIS
    CROHN'S DISEASE(2671)
    CROHN'S DISEASE, REGIONAL ENTERITIS, SMALL INTESTINE (1288)
    ETIOLOGY (4295)
    GASTRITIS, MULTIPLE POLYPOSIS (3364)
    MALNUTRITION, SURGERY (1211)
    REGIONAL, ANTIPERISTALTIC ILEAL LOOP FORMATION, MESENTERY (0055)
    REGIONAL, ETIOLOGY, PATHOGENESIS, THERAPY (8889)
    TERMINAL, CLINICAL STUDY (4237)
    TERMINAL, DEOXYCHOLATE, REABSORPTION DUODENUM (3418)•
    TERMINAL, TAKAYASU DISEASE, CROHN'S DISEASE, VASCULAR LESIONS (8924)
ILEOCECAL VALVE
    ADENOCARCINOMA, CLINICAL PICTURE, ANEMIA (0540)
ILEOCECUM
    ACUTE APPENDICITIS, CHRONIC APPENDICITIS, CROHN'S DISEASE (5861)
    INFLAMMATORY TUMORS (7733)
    TUBERCULOSIS (0389)
    VALVE, FIBERCOLONOSCOPE (6559)
ILEOCOLIC INVAGINATION
    ILEUM, COLON SECONDARY, ILEOCOCAL LYMPHOSARCOMA, CANCER (0390)
ILEOINTRACOLIC INVAGINATION
    MECKEL'S DIVERTICULUM, MAN (0374)
ILEOSTOMY
    MIXED DIET, FLATULENCE, ODOR, WATERY FLOW (7413)•
    SURGERY, ILEUM (2724)
    ULCERATIVE COLITIS, VITAMIN B12 ABSORPTION (3506)•
ILEUM
    ABSORPTION, SALT LOADING, CAT (4783)
    ABSORPTION, URINE CONTENTS, DOG (0029)•
    ADYNAMIC, MECHANICAL OBSTRUCTION, FLUIDS, ELECTROLYTES (0369)
    ANAPHYLACTIC SENSITIVITY, RECOVERY AFTER DESENSITIZATION, GUINEA-PIG (0905)•
    ANAPHYLAXIS, ANTIGEN, GUINEA-PIG (5053)
    ANTIPERISTALTIC LOOP FORMATION, MESENTERY, TECHNIQUE, ILEITIS (0055)
    ATRESIA, INTRAUTERINE, INTUSSUSCEPTION (5864)
    ATRESIA, STENOSIS, SURGERY (0361)•
    BACTERIA, JEJUNUM, COLON, SURGERY (1927)
    CARCINOIDS (7421)
    CARCINOID TUMOR, APPENDIX, RECTUM (6972)
    CELLULAR CALCIUM TRANSPORT SYSTEM, SMOOTH MUSCLE (1646)•
    CHOLERA, ANTITOXIC IMMUNITY (4632)
    CHOLESTEROL, ABSORPTION, RABBIT (3096)•
    CHOLINERGIC ACTION, HISTAMINERGIC ACTION (3131)
    CHOLINERGIC INHIBITION, NICOTINIC AND MUSCARINIC AGENT (2360)
    COALESCENCE, REPAIR, STASIS, APPENDICITIS (6332)
    COCAINE, 5-HYDROXYTRYPTAMINE, SUPERSENSITIVITY (6495)
    COLON, ILEOCOLIC INVAGINATION, CANCER, ILEOCOCAL LYMPHOSARCOMA (0390)
    COLON, ILEOCOLITIS, RUBEOLA (8482)
    CONDUIT, URETERO-ILEAL ANASTOMOSIS, OBSTRUCTION (2674)
    CONGENITAL ATRESIA, JEJUNUM, COLON (6208)
    CROHN'S DISEASE, ANAL-RECTAL SPREAD, COLON (3477)
    CROHN'S DISEASE, AZATHIOPRINE (0397)•
    CROHN'S DISEASE, ENTERITIS (2671)
    CROHN'S DISEASE, MALABSORPTION (1208)•
    CUTANEOUS URETERO-ILEOSTOMY, URINARY DIVERSION, MYELOMENINGOCELE, CHILDREN (0372)
    CYCLIC AMP, SECRETION, SMALL INTESTINE (1689)

DIAGNOSTIC PROCEDURE, ISCHEMIA, DYE TEST (5658)•
DIPEPTIDE HYDROLASES, JEJUNUM (0904)•
DISACCHARIDASES, MUCOSA (1942)
DIVERTICULUM, MECKEL'S, ANOMOLY (1197)
DIVERTICULUM, SURGERY (2673)
DUMPING SYNDROME, DUODENUM, ION (5080)
DUODENUM, JEJUNUM, SLOW WAVE (3884)•
DUODENUM, MUCOSA, VITAMIN D (2471)•
DUPLICATIONS, COLON, APPENDIX, CHILDREN (8448)
ELECTRICAL POTENTIAL, ABSORPTION, ALANINE, GLUCOSE (7844)
ELECTRICAL STIMULATION, MOTILITY (6378)•
ENTERITIS, JEJUNUM, ASCARIS (5358)
ENZYME HISTOCHEMISTRY, INTESTINES, MAN, ANIMALS (0752)•
EOSINOPHILIC GRANULOMA, ANISAKIS LARVAE, INTESTINAL OBSTRUCTION (8489)
EVISCERATION, ANUS, RECTOSIGMOID RUPTURE (5930)
FALLOPIAN TUBE, ANASTOMOSIS, SOW (0919)
FIBROMA (2666)
FILLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, DUODENUM, GASTRIC MUCOSA (5875)
FISTULA, CROHN'S DISEASE, BLADDER (4245)
GALLBLADDER, CONTRACTION, CHOLECYSTOKININ, OCTAPEPTIDE (4794)•
GALLSTONE, SURGERY (1940)
GALLSTONE, SURGERY, ENTEROTOMY (1941)
GLUCOSE ABSORPTION, VITAMIN B12, GASTRIC RESECTION, PERISTALSIS, MALIGNANT TUMOR (5083)
HEMANGIOPERICYTOMA (7423)
HISTOLOGY, TRACER TECHNIQUE, VILLI, MORPHOLOGY (1571)•
ILEITIS, ILEOSTOMY (5044)
ILEOCECAL VALVE, ADENOCARCINOMA, CLINICAL PICTURE (0420)
ILEOCECAL VALUE, LIPOMATOSIS, ADENOPAPILLOMA (8144)
ILEOINTRACOLIC, INVAGINATION, MAN (0374)
ILEORECTAL ANASTOMOSIS, ULCERATIVE COLITIS (5950)
ILEOSTOMOSIS DISEASE (4225)
ILEOSTOMY, COLOSTOMY, DIET, DIARRHEA (5903)
ILEOSTOMY, CROHN'S DISEASE (5068)
ILEOSTOMY, LONG-TERM REHABILITATION (2679)
INFLAMMATION, APPENDICITIS (1175)
INTRALUMINAL PRESSURE, ACETYLCHOLINE (6500)•
INVAGINATION, JEJUNUM, OCCLUSION, PEUTZ-JEGHERS SYNDROME (4241)
ION TRANSPORT, BICARBONATE ABSORPTION, TRIPLE-LUMEN PERFUSION SYSTEM (3089)•
ISOLATED, AURICLE, CAPSAICIN, GUINEA PIG (1652)
JEJUNO-ILEITIS, CHRONIC PERITONITIS, HISTOLOGY, RADIOGRAPHY (4232)
JEJUNUM, COLON, SURGERY (1929), (1951)
JEJUNUM, VILLUS, SMALL INTESTINE, DUODENUM (1569)•
JUNCTION, LARGE INTESTINE, ANATOMY, CECOSTOMY (7804)
LEIOMYSARCOMA (1946)
LONGITUDINAL MUSCLE, SCHULTZ-DALE RESPONSE (7854)
LYMPHOID HYPERPLASIA, PATHOLOGY, HISTOLOGY (8145)
LYMPHOID HYPERPLASIA, POLYPOSIS COLI, FAMILIAL (2669)
LYSOSOMES, ALKALINE PHOSPHATASE, NEONATE, RAT (1593)
MALABSORPTION, AMINO ACID, HISTIDINE JOHNE'S DISEASE, MUCOSA, HISTOLOGY PATHOLOGY (0404)•
MALABSORPTION, ETHANOL-INDUCED, VITAMIN B-12 (0406)•
MATURATION, HISTOCHEMISTRY, ENZYMES (0005)•
MECKEL'S DIVERTICULUM (5873)
MECKEL'S DIVERTICULUM, BLEEDING, PANCREATIC HETEROTOPIA (0377)
MECKEL'S DIVERTICULUM, ECTOPIC TISSUE, GASTRIC ULCER, MASSIVE HEMORRHAGE ADULT (0367)
MECKEL'S DIVERTICULUM, ENTEROLITH (4226)
MECKEL'S DIVERTICULUM, LEIOMYOSARCOMA (7418)
MECKEL'S DIVERTICULUM, SURGICAL INDICATIONS (1178)
MEGAILEUM, STENOSIS, MEGACOLON, ASCENDING COLON (3479)
MELANOSIS, ELECTRON MICROSCOPY (1933)
MITOSIS, CRYPT OF LIEBERKUHN (3093)
MOTILITY, AET, RAT (5623)
MOTILITY, COLON, SLOW WAVES, HYPOTHYROIDISM (4786)•
MOTILITY, ESTROGEN, ANTIGENS (8574)
MOTILITY, SMOOTH MUSCLE, CATECHOLAMINES, ADRENALINE, NORADRENALINE, ISOPRENALINE, ADRENOCEPTORS (5517)•
MUCOSA, ABSORPTION, WATER, ELECTROLYTE, MORPHOLOGY, ATPASE, ULTRASTRUCTURE (4713)•
MUCOSA, JEJUNUM, ALDOSTERONE TRANSFER SYSTEM (1630)•
NEONATE, RAT (4730)
NEOSTIGMINE, ATROPINE, RECTUM, COLON (4804)
NITROGEN MUSTARD (6389)
OBSTRUCTION, HEMODYNAMICS, DOG (0360)•
PARTIAL BY-PASS, HYPERCHOLESTEROLEMIA (1176)
PERFORATION, TYPHOID, SURGERY (8902)
PERFUSION, ANGIOTENSIN, ADRENERGIC EFFECTS, CAT (0776)•
PERISTALSIS, NACl EFFECT, GUINEA-PIG (0038)•
PEYER'S PATCHES, IGM MEMORY, RATS (0163)•
PEYER'S PATCHES, IRRADIATION, CERIUM 144, RAT (6190)
PGE 1-INDUCED CONTRACTIONS, MORPHINE ANTAGONISM, GUINEA-PIGS (0041)•
PH, HISTAMINE (3126)
POLYP, CARCINOID SYNDROME (4223)

- PRESTOMAL, ILEITIS, SMALL INTESTINE, CORTICOSTEROID (5882)
- PRIMARY MALIGNANT TUMORS, JEJUNUM (7701)
- RELAXATION, SYMPATHETICS (3899)
- RESECTION, BILE SALT POOL, COMPOSITION, SIZE (1153)*
- RESECTION, CHOLERIC DIARRHEA, CHOLESTYRAMINE (7743)
- RESECTION, CHOLESTYRAMINE, DIARRHEA (7744)
- RESECTION, CHOLORRHEA, CHOLESTYRAMINE (4240)
- RESECTION, REVERSAL (6182)
- RUPTURE, PERITONITIS, INGUINAL HERNIA, BLUNT TRAUMA (1957)
- SMALL INTESTINE, TERMINAL, COLO-MESENTERIC COALESCENCE (6332)
- SODIUM, FLUX, ALANINE, RABBIT (3106)*
- STASIS, CHRONIC APPENDICITIS, VASCULARIZATION, PERFORATION (6332)
- STRANGULATION, SUPRAVESICAL FOSSA (1165)
- SURGERY, ANTIBODY (2311)
- SURGERY, MUCOSA, COLON, DUODENUM (5045)
- TERMINAL, DIVERTICULITIS, ACUTE (2667)
- TERMINAL, DUPLICATION RESECTION, INFANT (4239)
- TERMINAL, INTESTINAL KNOT SYNDROME (7496)
- TERMINAL, LYMPHOID HYPERPLASIA (7422)
- TERMINAL, OBSTRUCTION, IMPACTED ANTACID TABLETS (8154)
- TERMINAL, REPAIR, COLO-MESENTERIC COALESCENCE (6332)
- THIRY-VELLA LOOP, SODIUM DEPLETION, INTESTINAL TRANSPORT (1629)*
- TOXOGONIN, PARASYMPATHOLYTIC EFFECT. GUINEA PIG (2476)
- TRANSMURAL ELECTRICAL POTENTIAL DIFFERENCE, RECORDING ELECTRODES, COLON (1647)*
- TRANSPORT, ALANINE. SODIUM, INTERACTION, RABBIT (3105)*
- TUMOR, CARCINOID SYNDROME (1934)
- ULCERATIVE, GRANULOMATOUS, MICRODIVERTICULA (8156)*
- VITAMIN B12, MALABSORPTION, INTRINSIC FACTOR (6375)
- WALL, DENERVATION, ACETYLCHOLINESTERASE, ACTIVITY, RABBIT (5620)*

ILEUS
- ADYNAMIC, CECAL PERFORATION, INTESTINAL DISTENSION, LOCALIZED ISCHEMIA (8194)
- ARTERIOMESENTERIAL INTESTINAL OCCLUSION. DUODENAL STENOSIS, SURGERY, CHILDREN (9254)
- CARCINOMA, PERFORATION, PERITONITIS, GALLSTONES (6950)
- CHOLELITHIASIS, SYNDROME (7428)
- COLON, RADIOLOGY (3460)*
- COLONIC, DIFFERENTIAL DIAGNOSIS (4286)
- GALLSTONE, FISTULA, SURGERY (2729)
- GALLSTONE, OBSTRUCTION (0387)
- GALLSTONE, OBSTRUCTION, SMALL INTESTINE (2667)
- GALLSTONE, SMALL INTESTINE (8150)
- GASTRECTOMY, ORANGE PITH (1139)
- MECHANICAL, OBSTRUCTION, BLOOD VOLUME DETERMINATION, MALABSORPTION (9206)
- MECHANICAL, SYMPTOMATOLOGY, INTESTINAL OCCLUSION THROUGH TUMOR, INTESTINAL STENOSIS (9240)
- MECONIUM, CYSTIC FIBROSIS, ROENTGEN DIAGNOSIS (3417)*
- MECONIUM, SURGICAL TREATMENT (2680)
- MECONIUM, TREATMENT, CONTRAST ENEMAS (1926)*
- OMENTUM MAJUS, DIAGNOSIS, TUMOR, SURGERY (2747)
- PARALYTIC, ADRENOCORTICOIDS, ALDOSTERONE (6952)
- PARALYTIC, K+ ECONOMY, ALDOSTERONE, ADRENOCORTICOIDS (6952)
- PARASITE, SMALL INTESTINE, OBSTRUCTION (3016)
- POSTOPERATIVE, ELECTROLYTES, WATER, METABOLIC CHANGES (6948)
- POSTOPERATIVE, GASTRIC RESECTION, APPENDECTOMY, CHOLECYSTECTOMY (6951)
- POSTOPERATIVE, PARALYTIC, ADHESIONS, CARCINOMA (6574)
- PREGNANCY, PUERPERIUM (1173)
- RECURRENT, STAPHYLOCOCCIC GASTROENTERITIS, RESPIRATORY DISTURBANCES (0364)
- SMALL INTESTINE, OBTURATOR, HERNIA, MAN (1166)

IMMOBILIZATION
- ENZYMES, BRAIN, LIVER, RAT (0859)

IMMUNOCHEMISTRY
- CARCINOID ANTIGEN, GASTROINTESTINAL TRACT, TUMOR, HUMAN IN VITRO (3801)*
- GASTRIN, ANTIBODIES, RADIOACTIVITY (6394)*

IMMUNOFLUORESCENCE
- BILHARZIASIS, SEROLOGIC DIAGNOSIS (4059)
- BILHARZIASIS DIAGNOSIS, PARASITOLOGY (4075)
- HEPATITIS, COLLAGENOSES, THYROID DISEASE (3542)*
- PANCREAS, DUCT LIGATION (0724)*
- SERODIAGNOSIS, BILHARZIASIS, SCHISTOSOMA MANSONI, SCHISTOSOMA HAEMATOBIUM (0231)

IMMUNOGLOBULIN
- ACTIVITY, SERUM, JEJUNUM, CHOLERA, RADIOIMMUNODIFFUSION (4572)*
- ANTIBODIES, E.COLI, INTESTINAL SECRETION, HEMAGGLUTINATION (8687)*
- BILE, GALLBLADDER, MONKEY (6939)*
- COPROANTIBODIES, HEMAGGLUTINATION, E. COLI TYPE 083 (3040)*
- DETERMINATION, LIVER DISEASES, DIFFERENTIAL DIAGNOSIS (8779)
- GASTROINTESTINAL SECRETIONS, ANTIBODIES (0903)*
- IGA, DEFICIENCY, MALABSORPTION, STEATORRHEA, ADULT (0404)*
- IGA, IGM, GASTRITIS, ATROPHIC (0274)*
- IGA, ORIGIN, MOLECULAR SIZE, MESENTERIC LYMPH, DOG (2484)*
- IG-CELLS, LIVER (0733)*

LIBRARY U. OF I. URBANA-CHAMPAIGN

  INTESTINE, NIPPOSTRONGYLUS BRASILIENSIS, IMMUNITY, RAT (7009)
  LIVER FUNCTION, HEPATITIS, CONCENTRATIONS (6855)*
  MALNUTRITION, MALABSORPTION, CHILDREN (1215)*
  METABOLISM, PROTEIN, AMINO ACID, HEPATOMA (1711)*
  PERNICIOUS ANEMIA, GASTRIC ACID, INTRINSIC FACTOR (4130)*
  RHEUMATOID FACTOR, CHRONIC HEPATITIS, HEPATIC CIRRHOSIS (2890)
  SECRETORY IMMUNE SYSTEM (3828)
  SERUM, ANALYSIS, LIVER DISEASE (4498)
  SERUM, CELIAC DISEASE (0407)*
  SMALL INTESTINE, STOOL, IGG, IGM, IGA, ANTIBODY ACTIVITY, CHOLERA, ULTRACENTRIFUGATION, COLUMN CHROMATOGRAPHY (4573)*
  VIRAL HEPATITIS, CHILDREN, CORTISONE (9134)

IMMUNOLOGY
  ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS (9117)
  ALPHA GLOBULIN, LYMPHOMA, JEJUNAL MUCOSA, IGA, ABDOMINAL PAIN, HYPOKALEMIA, TUBERCULOSIS (5346)
  ANTICHOLERA VACCINE, BIOASSAY (4005)
  ANTI-COLON, AUTO-IMMUNE, HUMAN, ANTIBODY (5126)
  ANTIGEN, CHOLERA, RAT FOOT EDEMA MODEL (6175)
  ANTILIVER ANTIBODIES, HEPATITIS, VIRAL (0632)
  AUSTRALIA ANTIGEN, PARTICLES (5454)
  AUTOANTIBODY, HEMATOLOGY, HEMOLYTIC ANEMIA, VIRAL HEPATITIS (2875)
  AUTOIMMUNE DISEASES, ATROPHIC GASTRITIS, ULCERATIVE COLITIS, REGIONAL ENTERITIS, CHRONIC AGGRESSIVE HEPATITIS (6222)
  AUTO-IMMUNIZATION REACTIONS, GASTROINTESTINAL DISEASES, PATHOGENESIS (7725)
  BACTERIA, CHOLERA, FOWL (5363)
  CHOLERA, ANTIGEN, CHOLERAGENOID (4004)
  CHOLERA, BACTERIA, FOWL (5362)
  CHOLERA, EXO-INTEROTOXIN, RABBIT (6157)*
  CHOLERA, PROPHYLACTIC IMMUNITY (4601)
  CHOLERA, SEROLOGICAL TESTS, VIBRIOCIDAL TEST, ANTIBODY TITER, ANTIGEN, VACCINE (4570)*
  CHOLERA, VACCINE, FOWL (5361)
  CHOLERA VIBRIO, ANTIGENS (7723)
  CHRONIC HEPATITIS, LIVER, GAMMA GLOBULIN (6107)
  CHRONIC HEPATITIS, THERAPY (7626)
  COPROANTIBODIES, E. COLI TYPE 083, HEMAGGLUTINATION, IMMUNOGLOBULINS (3040)*
  CROHN'S DISEASE, TREATMENT (4243)
  DEFICIENCES, CELIAC DISEASE, MALABSORPTION, ENZYME, CHILDREN (3442)*
  EHRLICH ASCITES, ANTITUMORUS DIPHENYLGLYOXAL (3830)
  EHRLICH'S CARCINOMA, ASCITES, SPLEEN, MOUSE (2821)
  FRACTION, LIPOPROTEIN, OBSTRUCTIVE JAUNDICE (3679)
  GALLBLADDER MUCOSA, BILE, GLYCOPROTEIN (7653)*
  GAMMA GLOBULIN, ACUTE VIRAL HEPATITIS, CIRRHOSIS, AMINO ACID (6013)
  GASTRIC MUCOSA, ANTIGENIC ESTERASE VI, SPECIES SPECIFICITY (7822)
  GASTRITIS, PERNICIOUS ANEMIA, INTRINSIC FACTOR, MUCOSA (5005)
  GASTROINTESINAL RESEARCH (3253)
  GRAFT VS. HOST REACTION, RUNTING SYNDROME, BACTERIAL ENDOTOXEMIA, LIVER, ELECTRON MICROSCOPY, MICE (1564)*
  HEPATITIS, AZATHIOPRINE (4500)
  HEPATITIS, THERAPY, ANTILYMPHOCYTIC GLOBULIN (6873)
  IGM MEMORY, DEVELOPMENT, ILEUM, PEYERS PATCHES, RATS (0163)*
  ILEUM, SURGERY (2311)
  IMMUNITY, ANTIGEN, ASCARIS SUUM, HOST COMPONENTS (6268)
  IMMUNOFLUORESCENCE, ORNITHINE AMINOTRANSFERASE, LIVER, RAT (4700)*
  INTESTINE, CLOSTRIDIUM, LAMB (5396)
  INTESTINE, LYMPHANGIECTASIA (4600)
  INTESTINE, SALMONELLA TYPHIMURIUM, MOUSE (7823)
  INTRINSIC FACTOR, ANTIBODY RESPONSE, MAN, PIG (0057)*
  LIVER (0608)*
  LIVER, ADRENAL CORTEX (4432)
  LIVER CIRRHOSIS (6877)*
  LIVER, IMMUNOFLUORESCENCE, HEPATITIS (0637)*
  LIVER HOMOGENATE, PATHOLOGY (4434)
  LIVER PATHOLOGY, MITOCHONDRIA, ANTIBODY (2817)
  LYMPHOCYTE TOXICITY, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, ALLOGENIC COLONIC EPITHELIAL CELL (5947)*
  SALMONELLA, POLYSACCHARIDES (1632)
  SALMONELLOSIS (6943)*
  SALMONELLOSIS, FOOD POISONING (7687)
  SALMONELLOSIS, ROUGH MUTANT (8422)*
  SALMONELLOSIS, TEMPERATURE-SENSITIVE MUTANT STRAIN, PEYER'S PATCH (6944)*
  SERA, GASTROINTESTINAL DISEASE, PARASITES (0710)
  SERUM IMMUNOSUPPRESSIVE ACTIVITY, AZOTHIOPRINE, TRANSPLANT (6766)*
  SMALL INTESTINAL HOMOTRANSPLANTS, REJECTION RESPONSE (3234)
  STOMACH, CANCER (4991)
  TAPEWORM, HOST RESPONSE, COLOSTRUM TAENIA HYDATIGENA (6273)
  TAPEWORM, HOST RESPONSE, EMBRYO, CYST (6279)
  TESTS, DIAGNOSIS AND PROGNOSIS, HYDATID DISEASE (3788)
  TYPHOID FEVER, VI-ANTIGEN (6241)
  UNSPECIFIC IMMUNITY, INFECTIONS HEPATITIS, CIRRHOSIS, PROPERDIN, NEWCASTLE DISEASE (5202)
  VACCINATION, TYPHOID FEVER (7205)
  V. CHOLERAE, SUCKLING ICR MICE, IMMUNE MILK, PASSIVE IMMUNITY (4576)*

  - VIRAL HEPATITIS, CELLULAR AND HUMORAL IMMUNITY, PROGNOSIS (9133)
  - ZOLLINGER-ELLISON SYNDROME, GASTRIN, TRACER TECHNIQUE (1808)*
- IMMUNOPATHOLOGY
  - GASTRIC MUCOSA, ALTERATIONS (8105)
  - PANCREAS, EXCRETORY FUNCTION, ANTIBODY (1311)
- IMPACTION
  - ESOPHAGUS, HIATAL HERNIA (2559)
- INCONTINENCE
  - SURGERY, ARTIFICIAL SPHINCTER, INTESTINE (6496)
- INDIGESTION
  - PANCREATIC ENZYMES, BACTERIOSTATICS (6417)
- INDIUM
  - SCANNING AGENT (2526)
- INFANTILE COARCTATION
  - LIVER (4363)*
- INFARCT
  - ENTEROMESENTERIC, THIAZOLYDINE (1205)
- INFARCTION
  - GUT, NEONATAL (8437)
  - INTESTINAL, MESENTERIC VASCULAR DISEASES (0703)
  - MESENTERY, PORTAL THROMBOSIS, BLEEDING VARICES, POLYCYTHEMIA VERA (2970)
  - MYOCARDIAL, ACUTE PANCREATITIS, ENZYMATIC TOXEMIA (2791)
  - MYOCARDIAL, GASTRIC HEMORRHAGE (1048)
  - MYOCARDIAL, ULCER, NECROSIS, GASTROINTESTINAL TRACT (1052)
  - SMALL INTESTINE, ISCHEMIA, OCCLUSION (2756)
- INFECTION
  - ADENOVIRUS TYPE 2, ENTERITIS, CHILDREN (9205)
  - BACTERIAL, LIVER, BILE DUCT, ANTIBIOTIC (7583)
  - BILE DUCTS, THERAPY, TETRACYCLINE DERIVATIVE (6922)
  - CLOSTRIDIAL, CHOLECYSTECTOMY (3669)
  - DIET, MALNUTRITION, UNITED STATES (2981)
  - E.COLI, ENDOTOXICITY, ENHANCEMENT (8477)
  - E.COLI, LOW PROTEIN INTAKE, PATAS MONKEY (8447)
  - FOOD POISONING, SALMONELLOSIS, HYGIENE (9236)
  - GASTROINTESTINAL HISTOPLASMOSIS, CHILDREN (4604)
  - INTESTINAL, CHEMICAL-ANTIBIOTIC THERAPY (3760)
  - INTESTINAL VIRUS, CHILDREN, JAPAN (9217)
  - PERITONEUM, BLOOD FLOW, OXYGEN CONSUMPTION (3739)
  - SALMONELLA, COLD-EXPOSED MICE (8461)
  - SHIGELLA, BREAST-FED NEONATES, SANITATION, GUATEMALA (1529)*
  - YERSINIA ENTEROCOLITICA, ENTERITIS (3713)
- INFLAMMATION
  - GASTRODUODENAL, PROPAXOLINE THERAPY, RADIOLOGY, ENDOSCOPY (8843)
  - LARGE BOWEL, ANKYLOSING SPONDYLITIS, ULCERATIVE COLITIS (7498)*
  - MESENTERY, X-RAY DIAGNOSIS, THERAPY (9219)
  - PANCREAS, CHOLECYSTECTOMY, VIRAL HEPATITIS, GASTRIC ULCER (7522)
  - PEPTIC ULCER, GASTRODUODENAL (1907)
- INNERVATION
  - COLON, ADRENERGIC FIBRES, GUINEA PIG (3811)*
  - COLON, SMOOTH MUSCLE, ELECTROPHYSIOLOGY, GUINEA-PIG, RABBIT (0774)*
  - LARGE INTESTINE, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*
  - MONAMINE, LIVER, ANIMAL (2464)
  - STOMACH, VAGUS, SECRETION (3355)
  - SYNAPSE, STOMACH, SMALL INTESTINE (7786)*
  - TENIA CECUM, TONE INHIBITION, ELECTRICAL AND CHEMICAL STIMULATION, GUINEA-PIG (0053)
  - VAGUS, STOMACH MUCOSA (3354)
- INSECTIDE
  - ENDRIN, DIELDRIN, HEPATIC EXCRETION, RAT (3202)
- INSULIN
  - ALLOXAN DIABETES, LIVER, GLYCOGEN SYNTHETASE, ACTIVATION (2810)
  - BILIARY, REABSORPTION, INTESTINE, CAT (0033)*
  - CHRONIC PANCREATITIS, SERUM LEVEL, DIABETES, BLOOD GLUCOSE (3528)*
  - DEOXI-D-GLUCOSE PHOSPHORYLATION, ANEROBIOSIS, ANUS MUSCLE (3872)
  - GASTRIC JUICE, HYDROCHLORIC ACID, DIABETES MELLITUS, GASTRIC ULCER (2599)
  - GLUCAGON, LIVER, HISTONE, PHOSPHORYLATION (2421)*
  - GLUCOSE, PANCREATIC DISEASE, MAN (1333)
  - GLUCOSE UPTAKE, PANCREATECTOMIZED, DOG (0813)
  - HEPATITIS (0535)*
  - HYPOGLYCEMIA, CARBOHYDRATES, GASTRIC SURGERY (1028)
  - HYPOGLYCEMIA, GASTRECTOMY (1876)
  - LIVER, POTASSIUM, SH-COMPOUNDS (1743)
  - LIVER CIRRHOSIS, BLOOD SUGAR, FATTY ACID (4522)
  - PANCREAS, ISLETS OF LANGERHANS, HISTOLOGY (1685)*
  - RESPONSE, CARBOHYDRATE INGESTION, GASTRIC SURGERY, HYPOGLYCEMIA (1028)
  - RESPONSE, LIVER CIRRHOSIS, HEPATIC COMA (6882)*
  - SECRETION, GASTRECTOMY, TOLBUTAMIDE (4207)
  - SECRETION, GLUCOSE, SECRETIN (3155)*
  - SERUM, GLUCOSE, JEJUNO-ILEOSTOMY, BLOOD (3419)*
  - TEST, SELECTIVE-TOTAL VAGOTOMIES (3712)
  - VAGAL STIMULATION, BLOOD GLUCOSE, GASTRIN RELEASE (6394)*
- INTESTINAL ABSORPTION
  - BILE SALT, SURFACTANT, PYRIDOXINE (2327)*

- HISTOLOGY, GLUCOSE, 5-FLUOROURACIL EFFECT (7840)
- PROTEIN, ENTEROCOLITIS (7043)
- PROTEIN, LIPIDS, RIBONUCLEIC ACIDS (0166)
- RADIATION SYNDROME, GLUCOSE TRANSPORT PATHOGENESIS (0761)*

INTESTINE
- ABSORPTION, CALCIUM, PHOSPHORUS, INTRAVENOUS INFUSION, PIG (8571)
- ABSORPTION, CALCIUM, PHOSPHORUS, LACTOSE TOLERANCE (5612)*
- ABSORPTION, CALCIUM, VITAMIN D3 (6355)*
- ABSORPTION, CALCIUM, VITAMIN D3, STRONTIUM (4775)
- ABSORPTION, COBALT, CIRRHOSIS, HEMOCHROMATOSIS (5072)*
- ABSORPTION, D-XYLOSE TEST, PROTEIN-MALNUTRITION, RENAL CLEARANCE (1213)*
- ABSORPTION, ESSENTIAL AMINO-ACIDS (6360)
- ABSORPTION, EVERTED GUT TECHNIQUE (5479)*
- ABSORPTION, FAT, ^{14}C-TRIGLYCERIDE, FECAL FAT ESTIMATION, STEATORRHEA (3443)*
- ABSORPTION, FOOD AND DRUG INTERACTION, RAT (7846)
- ABSORPTION, FREE AMINO ACIDS, PROTEIN (5483)*
- ABSORPTION, HISTOPHYSIOLOGY, EXPLORATION, CLINICAL TESTS (8568)
- ABSORPTION, HOG INTRINSIC FACTOR, IMMUNOLOGY (6356)*
- ABSORPTION, INTRINSIC FACTOR, VITAMIN B12 (2838)*
- ABSORPTION, IRON, REGULATION, FERRITIN (4755)*
- ABSORPTION, ISOMIAZID, STOMACH (6366)
- ABSORPTION, MALARIA, AMINO ACID (6275)
- ABSORPTION, MC TRIGLYCERIDE, LOW WEIGHT INFANT (2326)*
- ABSORPTION, MUCOSA, TANNIC ACID, GLUCOSE, BUTYRIC ACID, METHIONINE, PROTEIN DENATURATION, MOUSE (4780)
- ABSORPTION, PHARMACOKINETICS, MATHEMATICAL PROCEDURES (7851)
- ABSORPTION, PROTEIN, ENZYME (4767)
- ABSORPTION, SALICYLIC ACID, BARBITAL, SULFAETHIDOLE (7071)*
- ABSORPTION, SODIUM, SUGAR (4771)
- ABSORPTION, TETRACYCLINE RAT (4778)
- ABSORPTION, THIAMINE, GRADIENT LEVEL (3879)
- ABSORPTION, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION (5380)
- ACUTE, HEMORRHAGE, TREATMENT (8474)
- ACUTE DISEASE, E.COLI, CHILDREN (7691)
- ACUTE DISEASE, INFANTS, DYSENTERY (7695)
- ACUTE OBSTRUCTION, SURGERY (7716)
- ACUTE OBSTRUCTION, SURGERY, CIRCULATION, RESPIRATORY INSUFFICIENCY, PNEUMONIA, SUPPURATION (2963)
- ACUTE ULCER, HEMORRHAGE, STOMACH (6193)
- ADENOSINE DEAMINASE, STRUCTURE, CALF MUCOSA (2280)*
- ADHESIONS, ENTEROPTOSIS, OCCLUSIONS (5061)
- ADHESIVE OBSTRUCTION, POSTOPERATIVE, CHILDREN (3727)
- AET, DEFECATION, TAENIA COLI, JEJUNUM, RAT, GUINEA PIG, RABBIT (5623)
- ALKALINE PHOSPHATASE, MOLECULAR PROPERTIES (2291)
- ALKALINE PHOSPHATASE, NADP DEPHOSPHORYLATION (7204)
- AMEBIASIS, ANTIBIOTIC TREATMENT (2263)
- AMEBIASIS, DYSENTERY, ENTAMOEBA HISTOLYTICA (6272)
- AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
- AMBEIASIS, EPIDEMIOLOGY, DIAGNOSIS (7755)
- AMEBIASIS, EPIDEMIOLOGY, FRANCE (9264)
- AMEBIASIS, METRONIDAZOLE (7759)
- AMEBIASIS, METRONIDAZOLE TREATMENT (4677)
- AMEBIC DYSENTERY, PARASITOLOGICAL EXAMINATION, VITAMIN THERAPY, AMEBICIDES (6253)
- AMINO ACID, TRANSPORT, GOLDFISH (6372)
- AMINO ACID ABSORPTION, VITAMIN D, A-AMINOISOBUTYRIC ACID (7055)*
- AMYLASE, CHARACTERIZATION, RAT (6296)*
- ANAPLASTIC, CARCINOMA, STOMACH, PANCREAS (6970)
- ANASTOMOSIS, HEALING, BACTERIA (7726)
- ANTIBIOTIC, DYSBACTERIOSIS (6191)
- ANTISEPSIS, ANTIBIOTICS, MECHANICAL CLEANSING, FECAL FLORA (0424)*
- ANTISEPSIS, SURGERY (6246)
- AORTO-INTESTINAL FISTULAS, SURGERY, ABDOMINAL AORTA, ILIAC ARTERY (1938)
- ASPERGILLUS, PROTEASE, PH (5642)
- ATONIA, HYPEROSMOLARITY, PARALYSIS, CIRCULATION (5338)
- ATRESIA, CYSTIC FIBROSIS, MECONCIUM ILEUS, PANCREATIC FUNCTION, NEWBORN INFANT (5063)
- BACTERIA, BONE MARROW CELL PROLIFERATION, AUTORADIOGRAPHY (6504)
- BACTERIA, FECES (6230)
- BACTERIAL AND VIRAL DISEASES, WEST AFRICA (1169)
- BLOOD FLOW, ABSORPTION, WATER (4774)
- BLOOD FLOW, INFLATION, ILEUM (6500)*
- BLOOD FLOW, INTRALUMINAL PRESSURE, ACETYLCHOLINE (6498)*
- BRUSH BORDER, VITAMIN D, CALCIUM
- CALCIUM ABSORPTION, FASTING PATIENTS (3111)
- CANCER, STOMACH, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
- CAPILLARY AND NEUROCELLULAR RELATIONS, MATHEMATICAL ANALYSIS (8002)
- CATECHOLAMINE INHIBITION, RESPIRATORY ACIDOSIS (3901)
- CERULEIN, CHOLECYSOTKINETIC ACTION (3896)
- CHOLERA ENTEROTOXIN, PERMEABILITY (3861)
- CHOLERA ENTEROTOXIN, PERMEABILITY FACTOR (3998)

CHOLERA ENTEROTOXIN, PURIFICATION, ASSAY (3999)
CHOLERA TOXIN, CHARACTERIZATION (3997)
CHOLESTEROL, METABOLISM, RAT (4856)
CHRONIC APPENDICITIS, ANATOMOPATHOLOGY (6700)
CLOSTRIDIUM, IMMUNOLOGY, LAMB (5396)
COLD DENERVATION (3833)
COLIENTERITIS, NEONATE, EPIDEMIOLOGY (7730)
CONGENITAL ATRESIA, CHILDREN (7689)
CROHN'S DISEASE, MORTALITY (5877)•
CROHN'S DISEASE, REGIONAL ENTERITIS, HEMOGLOBIN, CHRONIC ULCERATIVE COLITIS (5881)
CROHN'S DISEASE, SURVEY (3424)
CRYPT CELLS, RADIOSENSITIVITY (3840)
CUCURBITACINE LAXATIVE, TOXICITY (4013)
CYST, PNEUMATOSIS INTESTINALIS (6267)
CYSTOPLASTY, MORTALITY, MORBIDITY (1183)
DAMAGE, ABDOMINAL TRAUMA, SURGERY (7714)
DEFECT, REPAIR, CROSS-LINKED GELATIN POLYMER ADHESIVE, DOG (3719)
DIARRHEA, FLUID, ELECTROLYTES (4595)
DISACCHARIDASES, ASSAY (3305)
DISACCHARIDASES, RAT, MALTOSE, LACTOSE, SUCROSE, MALNUTRITION (5622)
DISEASES, TREATMENT, PHLORO-GLUCINOL TRIMETHYLESTER (1656)
DRUG ABSORPTION AND METABOLISM, GLUCURONIDE CONJUGATION (2355)
DRUG ABSORPTION, DAMAGE, TRIPARANOL, IRRADIATION, RAT (5855)•
DRUG ABSORPTION, METABOLISM, IN VIVO METHOD, IN VITRO METHOD (2473)•
DRUG TRANSPORT, CATION, RAT (2328)
DUODENUM, LYMPH, LIPOPROTEIN, ULTRASTRUCTURE, TRANSPORT (5417)•
DUPLICATION, ILEUM, COLON, CHILDREN (8448)
DUPLICATION, TERMINAL ILEUM, INFANT (4239)
ECTOPIC ANUS, PATHOGENETIC FACTORS, TREATMENT, PROGNOSIS (3481)
EL TOR VIBRIO, COPROANTIBODY (4633)
ENDOMETRIOSIS, SURGERY, DILATATION, MESENTERIC GANGLIA (5042)
END-TO-END SUTURE (7746)
ENTERIC FEVER, DIAGNOSIS, INDIA (2973)
ENTEROCOLITIS, BACTERIA (4622)
ENTEROPATHY, CHRONIC DIARRHEA, FLORA, ANTIBIOTIC (2960)
ENTEROPATHY, PROTEIN LOSS, RETAINED INTESTINAL TUBE (2696)
ENTEROPTOSIS, GASTROPTOSIS, EPIGASTRIC PAIN, SURGERY, ASUPANTHENOL (5018)
ENTEROVIRUSES, RECEPTOR ACTIVITY, PIG TISSUES (3248)
ENZYME, CYTOPLASMIC, GLUTAMIC-OXALOACETIC-TRANSAMINASE (0907)•
ENZYME, GLUCOAMYLASE, MORPHOLOGY, MONKEY (5410)•
EPITHELIAL AUTOLYSIS, ACTINOMYCIN D, RAT (8690)•
EPITHELIAL CELL, BRUSH BORDER MEMBRANES, GUINEA PIG (8508)•
EPITHELIUM, LIPID, ULTRASTRUCTURE (4722)
EPITHELIUM, PERMEABILITY, TORTOISE (6359)
EPITHELIUM, QUANTITATIVE DESCRIPTION (7778)•
ESCHERICHIA COLI, BIOCHEMISTRY, PATHOLOGY (2264)
EUBIOSIS, PHARMACOLOGY (5406)
EVERTED LOOPS, GLUCOSE, LACTIC ACID, ALCOHOL (3876)
EXOCRINE, PANCREATIC INSUFFICIENCY, GLUTENENTEROPATHY (7450)
EXPERIMENTAL INFECTION, E.COLI, GUINEA PIG (8475)
EXTERNAL FISTULAS, SURGERY (9232)
EVERTED SAC, GLUTAMIC ACID, ASPARTIC ACID, ALAMINE (7074)
FAT DIGESTION, OIL, MICELLAR PHASES, CHILDREN (4863)•
FECAL ANTIBODY, IMMUNIZATION, RABBIT (7985)•
FLORA, ANTIBACTERIAL DRUG, BONE MARROW CELL PROLIFERATION (6503)
FLORA, ANTIBIOTIC ACTION, CHEMOTHERAPY (4010)
FLORA, CLOSTRIDIUM PERFRINGENS, SEROTYPE (8695)•
FLORA, FOLATE-DEFICIENT DIET, MICE (2950)•
FLORA, QUINOLINE DERIVATIVES, MAN (9253)
FLORA, R-FACTOR TRANSMISSION, MAN (6511)
FOLATE, METHYLATION (0921)
FUNCTION, FASTING, BILE SALT, CALCIUM, NITROGEN (8630)•
FUNCTIONAL BOWEL DISTRESS, DUODENAL ULCER, GALLBLADDER (7678)
GALACTOSYL-TRANSFERASE, MUCOSA, GLYCOPROTEIN INCORPORATION, CYTOPLASMIC FRACTIONS (4742)•
GAMMA GLUTAMYL CARBOXYPEPTIDASE, DIPHENYLHYDANTOIN, BSP (7193)•
GAS, RADIOLOGY, VOLUME (8010)•
GAS EXPLOSION, SURGICAL COMPLICATION (7704)
GIARDIASIS, METRONIDAZOLE, CHILDREN (6257)
GLUCOSE LEVEL, ANTIMITOTIC ACTIVITY (3891)
HARTNUP DISEASE, MALABSORPTION (8166)•
HELMINTH EGGS, IDENTIFICATION, OLD WORLD PRIMATES (3771)
HELMINTHIASIS (4673)
HEME-SPLITTING REACTION, HEMOGLOBIN IRON ABSORPTION, XANTHINE OXIDASE, DOG (3112)
HEMORRHAGE, CHILDREN (4622)
HEMORRHAGE, CHILDREN, INFANTS, ESOPHAGEAL VARICES, STOMACH RUPTURE, POLYPS, HEMANGIOMA (6222)
HEMORRHAGE, ESOPHAGOGASTROINTESTINAL CAUSES, TREATMENT, CHILDREN (0256)
HEMORRHAGE, LESION, ANGIOGRAPHY (4030)
HEMORRHAGE, LIVER DISEASE, THORACIC DUCT DRAINAGE (4501)
HEMORRHAGE, WEBER-CHRISTIAN PANNICULITIS (4631)

HERNIA, IRREDUCIBLE, REPAIR (8904)
HIGH FISTULA, COLONIC FISTULA, URINARY FISTULA, SURGERY (2741)
HISTONE UPTAKE, PERFUSED LIVER, KIDNEY (6457)
HYMENOLEPIS, MIGRATION, GLUCOSE (5404)
ILEAL LOOP, EXO-ENTEROTOXIN, CHOLERA, IMMUNITY (6157)*
ILEOCECAL VALVE, ESOPHAGOPLASTY, ESOPHAGEAL PROSTHESIS, PYLORIC SPASM (8057)
ILEOCECUM, INFLAMMATORY TUMOR (7733)
ILEUM, COLON, MICROFLORA ALTERATIONS, ANTIBIOTIC TREATMENT (9224)
ILEUS, ANTICOAGULANTS, MARCUMAR, HEMATOMA, BOWEL WALL, HEMATURIA (5862)
ILEUS, PERFORATION, RADIOGENIC STENOSIS (6950)
IMMUNOCHEMISTRY, SECRETIONS, MUCOSA, CELIAC SYNDROME (8165)*
IMMUNOLOGY, IMMUNIZATION, SALMONELLA TYPHIMURIUM (7823)
INCARCERATED INGUINAL HERNIA, TREATMENT, CHILDREN (2986)
INFARCT, ACUTE ABDOMEN (1286)
INFARCTION, MESENTERIC VASCULAR DISEASES (0703)
INFARCTION, SUPERIOR MESENTERIC ARTERY OCCLUSION, SYMPATHECTOMY (8445)
INFARCTION, X-RAY (5716)
INFECTION, CHEMICAL-ANTIBIOTIC THERAPY (3760)
INJURY, HERNIA, FEMORAL (1186)
INTESTINO-MESENTERIC INFARCT, EMBOLISM, ARTERIOTOMY (5336)
INTRAMURAL GAS, INFANT (2678)
INVASIVE ENDOMETRIOSIS (8969)
IRON ABSORPTION, METABOLIC CHANGE (3246)
ISCHEMIA, INFARCT, PERFORATION, OBSTRUCTION (6679)
ISCHEMIA, MALABSORPTION, SURGERY (5086)
ISCHEMIA, MESENTERIC ARTERY, EMBOLISM (3746)
JEJUNUM, GASTRIC SECRETION, TEST MEAL INSTALLATION (6392)*
JUICE, ANTIBODY DESTRUCTION, PROTEINASE INHIBITOR (7983)*
KNOT SYNDROME, COMPOUND, VOLVULUS (7696)
LACTASE DEFICIENCY, LACTOSE MALABSORPTION (2694)
LAMBLIA INTESTINALIS, BLUE CYSTS, PARASITE, LUGOL'S SOLUTION (6254)
LIEBERKUHN'S CRYPTS, MITOSIS, INTESTINAL MICROFLORA (8694)
LIPID, ABSORPTION, LACTASE ACTIVITY, SIMULTANEOUS DETERMINATION, PATHOLOGY (8933)
LIPOMA, OCCLUSION, ABDOMINAL PAIN, HEMORRHAGE (6676)
LIVER, ROUNDWORM, PARASITOLOGY (3012)
LYMPHANGIECTASIA, WALDMANN'S DISEASE, CHYLOUS ASCITES (8471)
LYMPHANGIECTASIS (8460)
LYMPHATICS, EXUDATIVE ENTEROPATHY (4591)
LYMPHOSARCOMA, SUBMUCOSA, INVAGINATION (6677)
MALABSORPTION (6689)
MALABSORPTION, CARBOHYDRATE, HYDROGEN, RESPIRATORY, EXCRETION (5648)*
MALABSORPTION, COW MILK INTOLERANCE, CHILDREN (8939)
MALABSORPTION, CROHN'S DISEASE (6698)
MALABSORPTION, DERMATITIS, PSORIASIS, ROSACEA (5088)
MALABSORPTION, DERMATOGENIC ENTEROPATHY (7439)*
MALABSORPTION, ENTERITIS, PANCREATIC INSUFFICIENCY (5076)
MALABSORPTION, LYMPHANGECTASIA, CONGENITAL LYMPHEDEMA, CHRONIC STEATORRHEA (8936)
MALABSORPTION, THERAPEUTIC AGENTS, CHOLESTYRAMINE (8179)
MALTASE, HEAT STABILITY, PURIFICATION (7024)*
MALTASE, HETEROGENEITY, HEAT INACTIVATION (7023)*
MANSON'S SCHISTOSOMIASIS, FECES (2305)
MECHANICAL OBSTRUCTION, SURGERY (5056)
MECKEL'S DIVERTICULUM, HEMORRHAGE, GASTRIC MUCOSA, SURGERY, SHOCK (5064)
MEGACOLON, AGANGLIONIC, INTESTINAL OBSTRUCTION, ENTEROCOLITIS, COLOSTOMY, INFANTS (8192)
MESENCHYMAL TUMOR, LIOMYOMA, STOMACH, LAPAROTOMY (5015)
METABOLISM, 16-ACETYL GITOXIN, ACETYL GITOXIN-ALPHA (6369)
MICROFLORA (7208)
MICROFLORA, CHOLERA, CHILDREN (2001)
MICROFLORA, PATHOGENOUS ENTOROCOCCUS, FOOD POISONING (7724)
MICRO-ORGANISMS, MINERALS, METABOLISM, RAT (0031)*
MOTILITY, CONTRACTION, TONE (5515)*
MOTILITY, PRESSURE, MUSCLE (7999)
MUCOSA, DISACCHARIDASE (3993)
MUCOSA, DISACCHARIDASE, CYCLOPHOSPHAMIDE (4653)
MUCOSA, ENDOTHELIAL VESICLES, CELL JUNCTIONS (8508)*
MUCOSA, ENZYMATIC ACTIVITY, BRONCHITIS (4636)
MUCOSA, ENZYME, ACTH, CORTISONE (3853)
MUCOSA, ENZYME, DNA (4723)
MUCOSA, ENZYME, RAT (4748)
MUCOSA, FATTY ACID PATTERN, MAN (8691)
MUCOSA, GASTRECTOMY, MALABSORPTION (2604)
MUCOSA, GASTRIC HETEROTOPIA, NEONATAL, PYLORIC STENOSIS (0279)
MUCOSA, HISTOCHEMISTRY, RADIATION, RAT (4698)*
MUCOSA, MALABSORPTION, CYTOSTATIC DRUG (3732)
MUCOSA, MITOCHONDRIA, CALCIUM (7830)*
MUCOSA, MOTILITY, OSMOTIC VOLUME FLOW (6351)*
MUCOSA, PHOSPHOLIPASE, DISTRIBUTION, CHARACTERISTICS (6492)*
MUCOSA, PHOSPHOLIPID, LIPID ANALYSIS, GLYCEROL ETHERS (5416)*

MUCOSA, PHOSPHORYLATION, PHOSPHOTRANSFERASE (5618)*
MUCOSA, PYRUVATE CARBOXYLASE, CARBOXYKINASE (3838)
MUCOSA, ULTRASTRUCTURE, HEDGEHOG, HIBERNATION (2324)
MUCOSA, ULTRASTRUCTURE, TERRAMYCIN, DISACCHARIDE, LIPID (1827)
MUTAROTASE, ENZYME LEVEL, SUGAR REABSORPTION, EMBRYONIC, NEWBORN RAT (2349)
NECROSIS, ILEUM, COLON, ILEOCOLITIS, RUBEOLA (8482)
NIPPOSTRONGYLUS BRASILIENSIS IMMUNOGLOBULIN, IMMUNITY, RAT (7009)
NON-NEOPLASTIC DISEASE, BACTERIA (6969)
NONPENETRATING, TRAUMA, MAN (1935)
N2-FIXATION BACTERIA (3700)*
NUCLEI, CHOLECALCIFEROL, METABOLISM (0920)
NUCLEI ISOLATION, VITAMIN D3, METABOLISM, CHOLECALCIFEROL (0916)
OBSTRUCTION, CANCER (3714)
OBSTRUCTION, CARDIAC PATIENT, SURGERY (9210)
OBSTRUCTION, CHRONIC DIVERTICULITIS, CARCINOMA (6696)
OBSTRUCTION, ETIOLOGY, MORTALITY (4606)
OBSTRUCTION, GYNECOLOGICAL DISEASE (1185)
OBSTRUCTION, HEMATOMA, ANTICOAGULANTS (8898)
OBSTRUCTION, INTESTINAL TUBE, TREATMENT (0391)
OBSTRUCTION, MECONIUM ILEUS, TWEEN 80 (7414)*
OBSTRUCTION, PARADUODENAL HERNIA (4218)
OCCLUSION, PARADUODENAL HERNIA, SURGERY (8148)
OBSTRUCTION, PERIARTERITIS NODOSA, PERFORATION, COLLAGEN DISEASE, SURGERY (5339)
OBSTRUCTION, SURGERY, GERIATRICS (4630)
OCCLUSION, GASTRIC INTUBATION, ASPIRATION, DISTENSION (6674)
OCCLUSION, LIPID ABSORPTION (3874)
OCCLUSION, OMENTUM (4234)
OCCLUSION, RETROPERITONEAL CYST, WOLFFIAN BODY, LAPAROTOMY (2663)
OCCLUSION, SIGMOID ENDOMETRIOSIS, CLINICAL FEATURES (8964)
OCCLUSION, STENOSIS, MECHANICAL ILEUS (9240)
OCCLUSION, SURGERY, ABSCESS, STASIS, ADHESIONS (5334)
OCCLUSION, SURGERY, ADHESIONS, PERITONITIS, HEMORRHAGE (5337)
OCCLUSION, SURGERY, INFANTS (9212)
ORGANISMS, EFFECT OF CHLORINATION (0961)
PANETH CELLS, DISTRIBUTION, RABBIT, HAMSTER (8517)
PARASITE, AMEBIASIS, LAMBLIASIS (4674)
PARASITE, ARTICTIS BINGTURONG, ARTHROSTOMA GUILHONI N.SP., NEMATODE (6278)
PARASITE, ASTHMA (2257)
PARASITE, DIAGNOSIS (3017)
PARASITE, TESTING, TROPICS (8493)
PARASITIC INFECTION, CHEMOTHERAPY, PHENYLENE 1,4-DIISOTHIOCYANATE (8493)
PARASITOLOGY (1549)
PARASITOLOGY, FECES (3011)
PARASITOSIS (4672)
PATHOGENIC COLI, NEONATES, DIARRHEA (3711)
PATHOLOGY, GELUSIL-LAC (4639)
PENICILLIN RETENTION, E.COLI PROLIFERATION, GUINEA PIG (7848)
PERFORATION, CROHN'S ILEITIS, PERITONITIS (8158)
PERFORATION, EXCHANGE TRANSFUSION, POLYVINYLCHLORIDE TUBE, INFANT (1228)
PERFORATION, PERITONEAL DIALYSIS, CATHETER BLOCKING, HEMORRHAGE, METABOLIC DISTURBANCES, RESPIRATORY COMPLICATIONS (6165)
PERFUSED, IRRADIATION, ALBUMIN DEGRADATION (7988)
PERFUSION STUDY, DIGOXIN ABSORPTION, RAT (5504)
PERIARTERITIS NODOSA (4609)
PERMEABILITY, MOLECULAR WEIGHT, CLEARANCE (7058)*
PHENOL RED ABSORPTION, NA-DEOXYCHOLATE, EXCRETION (3868)
PHOSPHATASE, HEPATOBILIARY DISEASE (3675)
PHYCOMYCOSIS, ABDOMINAL WALL (2729)
PNEUMATOSIS INTESTINALIS (2248)
PNEUMATOSIS INTESTINALIS, ABDOMINAL CYSTS, RETROPERITONEAL AIR (6974)
PNEUMATOSIS INTESTINALIS, GAS CYST, SURGICAL TREATMENT (2529)
POSTOPERATIVE DISORDERS, DIAGNOSIS (7278)
POSTOPERATIVE FISTULA, SURGERY, CACHEXIA, ACUTE OCCLUSION (6678)
POSTOPERATIVE OBSTRUCTION, RELAPAROTOMY, ILEUS, GASTRIC JUICE (5060)
PROSTAGLANDIN, PHOSPHOLIPASE A, FATTY ACIDS (7192)*
PROTEIN, ACTIN, SMOOTH MUSCLE (3231)
PROTEIN LOSS, SCHISTOSOMAL POLYPOSIS, COLON (8487)*
RADIATION INJURY, SURGERY, OBLITERATIVE VASCULITIS (6673)
RADIATION REACTIONS, ABDOMINAL IRRADIATION, EXPERIMENTAL THERAPY (2098)
RECURRENT ILEUS, STAPHYLOCOCCIC GASTROENTERITIS, RESPIRATORY DISTURBANCES (0364)
RIBOFLAVIN SYNTHESIS, 7-CHLORO-8-METHYL-FLAVIN (7197)*
RIBONUCLEIC ACID SYNTHESIS, VITAMIN A DEFICIENCY, RAT (7990)
ROTATION, FIXATION, DUODENAL OCCLUSION (4172)
RUPTURE, PSEUDOMYXOMA PERITONEI, CACHEXIA, ABDOMINAL TRAUMA, DIGESTIVE DISORDERS (6239)
SALMONELLOSIS, IMMUNOLOGY, PEYER'S PATCH (6944)*

SCHISTOSOMIASIS, DIAGNOSIS, STOOL STORAGE, HYPERTONIC SALINE (0225)
SCHISTOSOMIASIS, EPIDEMIOLOGY (2256)
SCHISTOSOMIASIS, MULTIPLE INFECTION EGG EXCRETION, STOOL, URINE (0721)
SECRETION, GLUCAGON, INSULIN, CIRCULATION, DOG (5614)*
SENSITIZATION, ADRENALINE, ISOPRENALINE, SODIUM NITRIDE, SODIUM FLUOROACETATE, RAT (5527)
SILICA ABSORPTION, BLOOD, ADRENALECTOMY (3878)
SOUNDS (7002)
SPASM, HYPERSECRETION, BENZODIAZEPINONE TREATMENT (3756)
SPASM, RADIATION, ANGIOGRAPHY (0928)
STENOSIS, ENTEROCOLITIS, ISCHEMIA, METEORISM (6947)
STENOSIS, TUBERCULOSIS (5355)
STENOSIS, ULCER, POTASSIUM CHLORIDE, MUCOSA, NECROSIS (5048)
STEROID DISTRIBUTION, CORTICOSTERONE, PREGNENOLONE (7057)*
STRANGULATION FLUID, OPSONIZING ACTIVITY, P-RELEASING ACTIVITY, E. COLI, RAT (2478)
SUGAR TRANSIT, ABSORPTION, INFANT DIARRHEA (8167)*
SUGAR TRANSPORT, MODEL (7825)*
SURGERY, RESECTION, NUTRITION, NEONATE (4231)
TRANSFER, MECHANISMS (3132)
TRANSPLANT, REJECTION, PHYSIOPATHOLOGY (8958)
TRANSPORT, AMINO ACID, CARBOHYDRATES (6363)
TRANSPORT, AMINO ACID, SUGAR, SODIUM SENSITIVITY (5478)*
TRANSPORT, ENZYME, CALCIUM (3118)
TUBERCULOSIS, BIOPSY, CHILD (9249)
TUBERCULOSIS, PULMONARY, MALABSORPTION, VILLOUS ATROPHY (5891)
TUMOR, CARCINOID, THERAPY, ETIOPATHOGENESIS, HUMORAL FACTORS (0392)
TUMOR, RECURRENT, ILEUS, ADHESIONS, NOBLE OPERATION, APPENDICITIS, PERITONITIS (5856)
TYPHOID FEVER, SYMPTOMS, DIAGNOSTIC DISTINCTIONS (3766)
ULCER, DUCTON, AMEBIASIS, NONSPECIFIC IMMUNITY (6998)
ULCER, PEPTIC, CARCINOMA, GASTRIC, HYPERMOTOR DYSKINESIS (0318)
ULCER, SULPHATION, POLYSACCHARIDE (6659)*
ULCERATIVE COLITIS, GRANULOMATOUS, URINARY, CRYSTALLOID EXCRETION (7499)*
ULCERATIVE COLITIS, REGIONAL ENTERITIS (8989)
ULCERATIVE COLITIS, REGIONAL ENTERITIS, CROHN'S DISEASE, CYTOSTATICS, ANTIBIOTIC, INTESTINAL FLORA (5127)
ULCEROUS COLITIS, BACTERIA, VITAMIN (2764)
UPPER, HEMORRHAGE, TREATMENT, BLOOD TRANSFUSION (9231)
URINARY TRACT, SCHISTOSOMIASIS, HYCANTHONE, NIRIDAZOLE, LIVER TENDERNESS (0719)
VASOPRESSIN, AUGIOTENSIN, RESISTANCE VESSELS, SPLEEN, LIVER (6509)
VILLOUS, ATROPHY, TUBERCULOSIS, MALABSORPTION (5891)
VILLUS, LYMPHATIC, PUMP, MORPHOLOGY (6501)
VIRAL HEPATITIS, LIPID MEAL (5273)
VIRAL INFECTIONS, EPIDEMIOLOGY, CHILDREN, JAPAN (9217)
VIRUS, RURAL FAMILIES, EPIDEMIOLOGY (6176)
VOLVULUS, IRAN (1184)
WALL, PLASMA SKIMMING (3246)
WHIPPLE'S DISEASE, CORYNEBACTERIA, LYMPHANGIECTASIA, FROTHY HISTIOCYTES, PLASMODIA (5887)*
WHIPPLE'S DISEASE, MICROORGANISMS, MUCOSA (6687)
WORMS, HYPOVITAMINOSIS A (7765)
X-RAY DIAGNOSIS, DISEASE, WATER-SOLUBLE AGENTS (3307)
X-IRRADIATION, ALKALINE PHOSPHATASE, RAT (4721)

INTESTINE, LARGE
  ACUTE APPENDICITIS, DIAGNOSIS, SIALO-ACIDS (1243)
  ACUTE APPENDICITIS, FATAL, CHILDREN (2010)
  ACUTE DISEASES, DIAGNOSIS, TREATMENT, CLINICAL PICTURE (1247)
  ACUTE VOLVULUS, SURGERY, RECTO-SIGMOID INTUBATION, PERFORATION (5121)
  AGANGLIAR MEGACOLON, SURGICAL TREATMENT, NONSUTURE TECHNIQUE (0437)
  AMEBIASIS, GUINEA-PIG (1527)*
  AMEBIC GRANULOMA, CARCINOMA, MAN (0474)
  AMEBOMA, DIFFERENTIAL DIAGNOSIS, EOSINOPHILIA, CECUM (1275)
  ANASTOMOSIS, IMMERSION (1281)
  ANORECTAL ANATOMY (3503)
  ANORECTAL BLENORRHAGIA, NOSOLOGY, INCIDENCE, ETIOLOGY (8983)
  ANORECTAL FISTULA, MUCOID ADENOCARCINOMA (3501)
  ANORECTAL JUNCTION, CARCINOMA, CLOACOGENIC, ENTEROGENOUS, CYST (0470)
  ANORECTAL MELANOMA, ANATOMOPATHOLOGY, HISTOPATHOLOGY (8980)
  ANTICHOLINERGICS, MECHANISM OF ACTION, ACTIVITY, DISTAL COLON, GUINEA-PIG (0040)*
  ANUS, CANCER, RADIOTHERAPY (2005)
  ANUS, CARCINOMA, TNM CLASSIFICATION (2011)
  ANUS, PRIMARY AND SECONDARY SYPHILIS, DIAGNOSIS (8984)
  ANUS, RECTUM, CONGENITAL MALFORMATION ETIOLOGY, TREATMENT (1303)
  ANUS, RECTUM, SURGERY (5731)
  ANUS, SPHINCTER, HEMORRHOIDECTOMY, PAIN (1988)
  APPENDECTOMY, APPENDICITIS, GERIATRICS (5928)
  APPENDICITIS, INFANT (1276)
  APPENDICITIS, PROGESTERONE, PREGNANCY, LABOR, ABORTION (5092)

APPENDIX, ACUTE APPENDICITIS, MORBIDITY, MORTALITY (5900)
APPENDIX, ACUTE APPENDICITIS, PERITONITIS (5937)
APPENDIX, ADENOCARCINOMA, ACUTE APPENDICITIS (5901)
APPENDIX, APPENDECTOMY, CANCER RISK (5927)
APPENDIX, CANCER (2694)
APPENDIX, CARCINOID TUMOR (7479)
APPENDIX, CROHN'S DISEASE (1999)
APPENDIX, CROHN'S DISEASE, REGIONAL ENTERITIS (5067)
APPENDIX, DIVERTICULOSIS, APPENDICITIS, SURGERY (6718)
APPENDIX, LYMPHOID TISSUE, DEVELOPMENT (3992)*
APPENDIX, PAPILLARY VILLOUS ADENOMA (1979)
APPENDIX, PERITONEUM, GELATIN DISEASE (4277)
APPENDIX, TAENIA INFESTATION (7013)
APPENDIX, VERMIFORM, BOECK'S DISEASE SARCOIDOSIS, HISTOPATHOLOGY (0443)
BACTERIA, ENZYME, NUCLEOTIDE, RAT (3791)*
BACTERIAL FLORA, MUCOSAL BIOPSY, ANEROBIC STREPTOCOCCI (2190)*
BARIUM OXIDE ENEMA (7276)
CANCER (0462), (0463), (0465)
CANCER, ADHESION (5938)
CANCER, ELECTRO-DESTRUCTION (0451)
CANCER, INCIDENCE, MULTIHIT THEORY (4265)*
CANCER, PRIMARY (3474)
CANCER, SERUM CARCINOEMBRYONIC ANTIGEN, RADIOIMMUNOASSAY (1219)*
CANCER, SEX, GENETICS, INCIDENCE (4263)*
CANCER, SURGERY (7459)
CARCINOIDS, PATHOLOGY, MALIGNANCY (8191)
CARCINOMA, CHEMOTHERAPY, SURGERY (6708)
CARCINOMA, CYTOLOGICAL SCREENING METHOD, FLUORESCENCE MICROSCOPY (0187)*
CARCINOMA, POLYPOSIS COLI, GENES (2930)
CARCINOMA, SIGMOIDOSCOPY, ABDOMINAL DISTENSION, OCCULT BLEEDING (0464)
CAT, NERVE PLEXUS, LYMPHATIC, LYMPH CIRCULATION (2492)
CECAL-APPENDICULAR NEURONAL JUNCTION (3802)*
CECUM, ANEROBES, PATHOGEN-FREE MOUSE (6497)*
CECUM, BILE ACID ABSORPTION, RAT (0765)*
CECUM, COLON, MORPHOLOGY, RODENTS (7805)
CECUM, CONTAMINATION, RAT (4790)*
CECUM, DIVERTICULUM, INNERVATION, RABBIT (0020)
CECUM, EROSION, HEMORRHAGE (2715)
CECUM, FLORA, BETA-GLUCURONIDASE, N-HYDROXY-N-2-FLURENYL-ACETAMIDE (3230)
CECUM, MESENCHYMOMA (7465)
CECUM, SUBMUCOSAL LIPOMA, ANATOMOPATHOLOGY (8962)
CECUM, WALL, WATER TRANSPORT, RAT (4759)*
CHAGAS DISEASE, MEGACOLON, MEGASIGMOID, MEGARECTUM, MEGA-ESOPHAGUS (3769)*
CHOLERA, FECES, MICROFLORA (2192)*
CHOLERA, FLORA, SMALL INTESTINE (4587)
CHRONIC OBSTRUCTION, CANCER (7467)
COLITIS, DIAGNOSIS, TREATMENT (8190)*
COLITIS, INFLAMMATION, ANKYLOSING SPONDYLITIS (7498)*
COLITIS, REGIONAL, GRANULOMATOUS (8220)
COLITIS, ULCERATIVE, PITUITARY-ADRENAL (2012)
COLON, ABSORPTION, BILE ACID, UNCONJUGATED (7060)*
COLON, ABSORPTION, EDTA, ULCERATIVE COLITIS (5951)
COLON, ADENOCARCINOMATA, PROTEOLYTIC ENZYME (2809)*
COLON, ADENOMATOUS POLYP, VILLOUS (1974)*
COLON, AEROBIC, ANAEROBIC, CIRRHOSIS (6941)*
COLON, CANCER, CHILDREN (1273)
COLON, CANCER, DIAGNOSIS (5904)
COLON, CANCER, SURGERY, PROGNOSIS (3475)
COLON, CANCER, SURVIVAL, SURGERY (5909)
COLON, CARCINOMA, EARLY DIAGNOSIS, GASTROINTESTINAL ORGANS (0204)
COLON, CARCINOMA, PRIMARY LINITIS PLASTICA (8190)
COLON, CARCINOMA, RADIOLOGICAL DETECTION, RECTUM (0188)*
COLON, COLITIS, NECROGENIC, TROPICAL (0471)
COLON, CROHN'S DISEASE (0472)
COLON, CROHN'S DISEASE, DIVERTICULITIS, DIAGNOSIS (2697)
COLON, CROHN'S DISEASE, SURGERY (8222)
COLON, CROHN'S DISEASE, THERAPY (8224)
COLON, CROHN'S DISEASE, ULCERATIVE COLITIS (8223)
COLON, CUSHING'S SYNDROME, POLYPS (5926)
COLON, DILATION, CROHN'S DISEASE (7430)*
COLON, DIVERTICULA, SURGERY (6713)
COLON, DIVERTICULITIS, SURGERY (1990), (2755)
COLON, DIVERTICULUM, DIVERTICULITIS (5919)
COLON, ENDOMETRIOSIS, RECTUM (5910)
COLON, FIBROMA, COMPLICATION, INTESTINE (2698)
COLON, GRANULOMATOUS COLITIS, FOCAL (2759)
COLON, HEPATIC FLEXURE, CARCINOMA, DUODENAL LOOP, CHANGE (3469)
COLON, INTERPOSITION, SUBSTERNAL, ESOPHAGUS, COMPLICATIONS (2704)
COLON, IRON ABSORPTION, PHLEBOTOMY (0763)*

COLON, ISCHEMIA, ATHEROSCLEROSIS (1278)
COLON, ISCHEMIA, GANGRENE, ABDOMINAL AORTIC RESECTION, TREATMENT (3465)•
COLON, ISCHEMIC COLITIS (2733), (6693)•
COLON, ISCHEMIC COLITIS, GANGRENE (2006)
COLON, JEJUNUM, ENZYME HISTOCHEMISTRY, ACTH, CORTISONE (0169)
COLON, LYMPHOID HYPERPLASIA, CHILDREN (1992), (1993)
COLON, METASTATIC CARCINOMA, LEFT LIVER LOBECTOMY (0433)
COLON, MICROFLORA, E. COLI, DIARRHEA, FECES (3709)•
COLON, MUCOSA, BLOOD VESSELS, LYMPHATICS, INTRA-ARTERIAL INJECTION (5435)•
COLON, PERFORATION, INFANT (1984)
COLON, PERFORATION, STERCORACEOUS (1245)
COLON, PERISTALSIS, INNERVATION, DRUG EFFECT, GANGLION BLOCKING AGENT, INHIBITION (5508)•
COLON, PERISTALSIS, LIGNOCAINE BLOCK (0054)
COLON, PHARMACOTHERAPY (5922)
COLON, POLYP, CANCER, RADIOLOGY (6714)
COLON, POTASSIUM TRANSPORT, RATS, ADRENALECTOMIZED, SODIUM DEPLETED (0760)•
COLON, RECTOSIGMOID JUNCTION, PERFORATION, FOREIGN BODY (1985)
COLON, RECTUM, ADENOCARCINOMA (1989)
COLON, RECTUM, CANCER (1986)
COLON, RECTUM, CARCINOMA, ANTIGEN (6694)•
COLON, RECTUM, CARCINOMA, METHASTASIS, LYMPH NODES (8196)
COLON, RECTUM, DISEASES (0486)
COLON, RECTUM, HEMORRHAGE, DIVERTICULI, ARTERIOGRAPHY (5351)
COLON, RECTUM, MALIGNANT TUMOR, INCIDENCE, DISTRIBUTION (6729)
COLON, RECTUM, MOTILITY, PERISTALSIS (7855)
COLON, RECTUM, POLYPOSIS, CHILDREN (8197)
COLON, RECTUM, POLYPS, CARCINOMA (8202)
COLON, RECTUM, TRAUMATIC INJURY, SURGICAL MANAGEMENT (3491)
COLON, REGENERATION, ENTEROCOLITIS (6248)
COLON, RESECTION, BACTERIA, ILEOSTOMY (5931)
COLON, RESECTION, COLORECTAL CANCER (5932)
COLON, RETROGRADE, INTUBATION (1318)
COLON, SECRETION, ELECTROPHORESIS, POLYACRYLAMIDE GEL, LYSOGENIC FACTOR, RABBIT (0170)
COLON, SMOOTH MUSCLE, CONTRACTION, RELAXATION, ALPHA RECEPTORS, BETA RECEPTORS, CATECHOLAMINE (5509)•
COLON, SMOOTH MUSCLE, INNERVATION, ELECTROPHYSIOLOGY, ANIMALS (0774)•
COLON, STENOSIS, ATRESIA, NEONATE (7471)
COLON, TONUS, MEASUREMENT, DISTENSION (5511)•
COLON, TOTAL AGANGLIONOSIS, SMALL BOWEL REFLUX, NEONATES (1970)•
COLON, TRANSMURAL ELECTRICAL PORENTIAL DIFFERENCE, ILEUM, RECORDING ELECTRODES (1647)•
COLON, TUMOR IMPLANTATION, ANASTOMOSIS, RAT (1978)
COLON, ULCERATIVE COLITIS, CANCER (0497)•
COLON, ULCERATIVE COLITIS, DIAGNOSIS, COMPLICATIONS, TREATMENT (5949)
COLON, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, LYMPHOCYTE TOXICITY, ALLOGENIC COLONIC EPITHELIAL CELL (5947)•
COLON, ULCERATIVE COLITIS, GROWTH RETARDATION (3435)•
COLON, ULCERATIVE COLITIS, ILEORECTAL ANASTOMOSIS (5950)
COLON, ULTRASTRUCTURE, HISTOCHEMISTRY, LIPIDS (1582)•
COLON, VASCULAR OCCLUSION, RADIOLOGY (6704)
COLON, VIABILITY, ABDOMINAL PERFORATION, ARTERIOGRAPHY (1976)
COLON, VILLOUS ADENOMA, RECTUM (5940)
COLON, VOLVULUS, ETIOLOGY, TREATMENT (1987)
COLON MUSCLE, PHARMACOLOGY, NICOTINE 5-HYDROXYTRYPTAMINE, BRADYKININ, HISTAMINE (0494)
COLON TRANSPLANT, CORROSIVE STRICTURE, COLOESOPHAGOSTOMY (2546)•
COLONIC ANASTOMOSIS, HISTOPATHOLOGY, RABBITS (1218)•
COLONIC COMPLICATIONS, HOMOTRANSPLANT RECIPIENTS, IMMUNOSUPPRESSION (1225)•
COLONIC DISORDERS, GEOGRAPHY, IRAN, STRUCTURAL DISORDERS, NEOPLASMS, INFLAMMATION (0486)
COLONIC EXAMINATION, FLEXIBLE GASTROSCOPE, SIGMOID COLON, COLOSTOMY (3271)•
COLONIC MUCOSA, BICARBONATE AND NON-NA COMPONENTS (2341)•
COLONIC TUMORS, BENIGN, MALIGNANT, GLYCOGEN CONTENT, GLYCOGENESIS RATE (0469)
COLORECTAL CARCINOMA, FLUOROURACIL. RADIOACTIVE GOLD (8209)
CROHN•S DISEASE, AZATHIOPRINE (0397)•
CROHN•S DISEASE, CUTANEOUS LESION (3442)•
CROHN•S DISEASE, REGIONAL ENTERITIS, LARGE INTESTINE (1250)
CROHN•S DISEASE, ULCERATIVE COLITIS, COMPARISON (2763)•
CROHN•S DISEASE, ULCERATIVE COLITIS, MUCOSUBSTANCE, RECTAL BIOPSY, DIAGNOSIS (5946)•
CROHN•S DISEASE, X-RAY DIAGNOSIS (3308)
DERMOID CYST, DEVELOPMENTAL (5109)

DIABETIC DIARRHEA, STEATORRHEA, BACTERIAL GROWTH, ANTIBIOTICS, BLIND LOOP SYNDROME (2942)*
DIAGNOSIS, DOUBLE CONTRAST TECHNIQUE (5722)
DIARRHEA, FECES, BACTERIA, PARASITE (2195)*
DISEASE, RHEUMATIC COMPLICATION (4641)
DIVERTICULITIS, DIVERTICULOSIS, COLON, PATHOGENESIS (0489)
DIVERTICULOSIS, ACUTE, TREATMENT (0461)
DIVERTICULOSIS, PATHOGENESIS, DIET (0478)
DIVERTICULOSIS, ROENTGENOLOGIC CHARACTERISTICS, SIGMOIDITIS (1245)
DIVERTICULUM, CLINICAL DIAGNOSIS (1241)
DUHAMEL-HADDAD, OPERATION (2009)
DUODENUM, STOMACH, PEPTIC ULCER, SURGERY (1135)
DYSBACTERIOSIS, TOXIC DILATATION, COLITIS, ULCER, ANTIBIOTIC (2748)
ENDOMETRIOSIS, CECUM, SIGMOID COLON, APPENDIX (6697)
ENDOMETRIOSIS, MORPHOLOGY, CLINCIAL SYMPTOMATOLOGY (8981)
ENTERITIS, COLON, ULCERATIVE COLITIS, DIAGNOSIS (1300)
ENTEROCOLITIS, BACTERIOLOGY, THERAPY JUVENILES (0393)
ENTEROCOLITIS, CLINICAL CHARACTERISTICS, EPIDEMIOLOGY, SANITATION, CHILDREN (0689)
ENTEROCOLITIS, ETIOLOGY, SALMONELLA-PANAMA, CHILD (0394)
ENZYMES, TRACER STUDY (0009)*
ENZYME ACTIVITY, HISTOCHEMISTRY, SMALL INTESTINE, MAN, ANIMALS (0752)*
EPITHELIAL CELLS, CYTOTOXICITY, LYMPHOCYTES (6730)*
ESOPHAGOPLASTY, TRANSPLANT, PERISTALSIS (2746)
EXCRETION, CR 51 CL3, DIARRHEA, CONSTIPATION (2352)
FAMILIAL POLYPOSIS, MALIGNANCY, ENZYME DISTRIBUTION (7454)*
FECES, HELMINTHIC OVA, DIAGNOSIS (0948)*
FECES, MICROFLORA, SPHAEROPHORUS (3708)*
FIBROMA, X-RAY DIAGNOSIS, TUMOR (1239)
FISTULA, CHOLECYSTODUODENAL, CHOLECYSTOCOLONIC (8411)
FISTULA, SIGMOIDO-URETHRAL, DIVERTICULITIS (2004)
FLORA, ANTIBIOTICS, TETRACYCLINE (5631)*
FOREIGN BODY, EXTRACTION (1260)
FOREIGN BODY, X-RAY DIAGNOSIS, NONSURGICAL REMOVAL (1291)
GASTROINTESTINAL DISORDERS, ANTICHOLINERGIC, NEUROLEPTIC (1510)
GOBLET CELLS, A-ANTIGEN, MUCOPROTEINS (6310)*
GRAFT, ESOPHAGOPLASTY, CANCER, CICATRICAL STENOSIS, BLOOD PROTEINS(0237)
GRANULOMATOUS COLITIS, CROHN'S DISEASE (7504)
GRANULOMATOUS COLITIS, SEGMENTAL (7960)
GRANULOMATOUS COLITIS, SURGERY (2758)
HERNIA, IRREDUCIBLE, WINSLOW FORAMEN (8974)
HERNIA, IRREDUCIBLE OBSTRUCTION (8121)
HIRSCHSPRUNG'S DISEASE, COMPLICATION (2752)
HIRSCHSPRUNG'S DISEASE, DWARFISM, DISTROPHIC CHILDREN (0476)
HIRSCHSPRUNG'S DISEASE, SWANSON-HIATT OPERATION, RADIOLOGY, POSTOPERATIVE COMPLICATIONS (0460)
HISTOCHEMISTRY, MUCOSA, PEROXIDASE ACTIVITY, MUCUS-SECRETING CELLS, CRYPTS (5439)*
HOOKWORM, ROUNDWORM, ANTIHELMINTHICS (1531)*
IDEOPATHIC PERFORATION, NEWBORN (2719)
ILEAL STENOSIS, NONTUMEROUS, MAN (0389)
ILEOCECAL VALVE ADENOCARCINOMA, CLINICAL PICTURE (0430)
ILEUM, RADIOLOGY (3460)*
INNERVATION, AUERBACH'S PLEXUS, MYENTERIC GANGLIA (6299)*
INPERFORATE ANUS, LATENT ASSOCIATED ANOMALIES (3493)
INTRARECTAL TUMOR, ARTERIOGRAPHY, SURGERY (8953)
IRRITABLE BOWEL SYNDROME, PROGNOSIS, SYMPTOMS, STRESS EFFECT (0427)*
IRRITABLE COLON, TRANQUILIZER, NEUROSIS (1515)
IRRITABLE COLON SYNDROME, SYMPTOMS, TREATMENT (3510)
ISCHEMIC, COLITIS (7846), (8206)
ISOLATED, COLON, PERISTALSIS, MECHANISM, INTRALUMINAL STIMULUS (5506)*
JUNCTION, ILEUM, ILEAL PAPILLA, CECOSTOMY (7804)
LEFT COLON, PANCREATITIS DEVELOPMENT (0514)
LYMPHAGIECTASIA, PROTEIN LOSS, MALABSORPTION (1259)
LYMPHOID HYPERPLASIA, HYPERGLOBULINEMIA (3498)
MALIGNANCY, FATAL, GEOGRAPHIC PATTERN, VIRGINIA (3496)
MEGACOLON, CHAGAS DISEASE, MANOMETRIC STUDY, ESOPHAGUS (0987)
MEGACOLON, MEGADOLICHOCOLON, TREATMENT DIHYDROERGOTAMINE METHANE SULFONATE (0429)*
MEGADOLICHOCOLON, ELECTROMANOMERIC STUDIES, DIHYDROERGOTAMINE METHANE SULFONATE (0047)
MESOCOLON, HEMATOMA, ABDOMINAL APOPLEXY, PURPURA (0455)
METABOLISM, REABSORPTION, MAGNESIUM, CALCIUM (1505)*
MICROFLORA, IRRADIATION, ANTIBIOTICS (6930)*
MICROORGANISM, TRICHURIS TRICHIURA, RADIOLOGY, DIAGNOSIS (3768)*
MORPHOLOGY, COLUMNAR CELLS, SECRETORY GRANULES (0788)*

MORPHOLOGY, MK-2 GLUE APPLICATION (7047)
MOTILITY, DUODENAL RECEPTOR, DOG (7079)
MOTILITY, FOOD, PRESSURE, GASTRECTOMY, PERNICIOUS ANEMIA, DUODENAL ULCER (4264)•
MUCOSA, CANCER, HISTOCHEMISTRY, ENZYMES (0014)•
MUCOSA, CARCINOMA, PATHOLOGY, CALCIUM (1969)•
MUCOSA, PROLIFERATION, STARVATION (0910)•
MULTIPLE POLYPOSIS, SURGICAL MANAGEMENT, CANCER, RETAINED BOWEL SEGMENT (3472)
MUSCLE CONTRACTION, MANOMETRY, INTESTINE SMALL (2538)
NEUROMATOSIS, DIARRHEA (1220)
OBSTRUCTION, ELDERLY, VOLVULUS, GALL STONE, ILEUS, MEGACOLON (0705)
OBSTRUCTION, MESENTERIC THROMBOSIS (1513)
OCCLUSION, CARCINOMA, PHYSIOPATHOLOGY, DIAGNOSIS, RADIOLOGY (0466)
OCCLUSION, PERITONITIS, RADIOLOGY, MALROTATION, MULTIPLE ATRESIA, HIRSCHPRUNG'S DISEASE, DIAPHRAGM, NEONATE (5058)
OCCLUSION, SIGMOID COLON, CROHN'S DISEASE, ETIOPATHOGENESIS, THERAPY (0467)
PARASITES, CONGENERIC SPECIES, HELIGMOSOME, RODENTS (5405)
PATHOLOGY, HIRSCHSPRUNG'S DISEASE, INFANT (4266)•
PATHOLOGY, INTESTINAL ORGANISMS, CHLORINATION (0961)
PEDIATRICS, ANOMALY (1240)
PNEUMATOSIS, CYSTIC, JEJUNUM, ILEUM, CECUM, APPENDIX, COLON (6201)
POLYP, RADIOLOGY, CHILDREN (5119)
POLYP, X-RAY DIAGNOSIS, ADENOMATOUS TUMOR (1290)
POLYPOSIS, CARCINOMA, RESECTION (2737)
POLYPOSIS, FAMILIAL, ADENOMATOUS TUMOR (1230)
POLYPOSIS, HISTOLOGY, TREATMENT (1285)
POLYPOSIS, JUVENILE (4290)
POLYPOSIS, SMALL INTESTINE, CANCER, LEUKOPLAKIA (0395)
POSTOPERATIVE, ANTIBIOTIC THERAPY, COLIFORM DIARRHEA, ABDOMINAL DISTENSION (0376)
PRIMARY MEGARECTUM, HIRSCHSPRUNG'S DISEASE, SURGERY, CHILDREN (8966)
PROCTOCOLITIS, ABSORPTION, POTASSIUM, DIARRHEA (3463)•
PROCTOSIGMOIDOSCOPY, DIAGNOSIS (7274)
PSEUDO-OBSTRUCTION, RADIOLOGY (6705)
RADIATION (6967)
RADIOLOGY, CONTRAST ENEMA (7227)
RADIOLOGY, DIVERTICULOSIS, SYMPTOMATOLOGY (7472)
RECTAL EPITHELIUM KINETICS, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS (0495)•
RECTAL MUCOSA, CARCINOMATOUS, ISOENZYMES (8940)•
RECTAL OBSTRUCTION, POSTPERFORATED COLONIC ABSCESS (3490)
RECTAL PROLAPSE, COLONIC RESECTION, RECTAL FIXATION (0481)
RECTAL PROLAPSE, ETIOLOGY, SURGERY (7474)
RECTAL PROLAPSE, RIPSTEIN SURGERY, RADIOLOGY (6710)
RECTAL PROLAPSE, SALINE, CHILDREN (7470)
RECTOCOLON, MELANOSIS (0468)
RECTOCOLONIC SURGERY, ANASTOMOSIS, GRAFTS (8951)
RECTOPOLYPOSIS, MESENTERIC FIBROMA (8200)
RECTOSIGMOID, BENIGN LESION, TRANSRECTAL REMOVAL, DOUBLE-SCOPE TECHNIQUE (0492)
RECTOSIGMOID, EXTRAPERITONEAL RUPTURE, HEART, BARIUM SULFATE (3505)
RECTOSIGMOID CARCINOMA, SURGERY (1975)
RECTOSIGMOID POLYPOSIS, VILLOUS TUMOR, VILLOUS ADENOMA (8985)
RECTUM, AMEBIC ULCERATIVE PROCTITIS, METRONIDAZOK, SIDE EFFECTS (0493)
RECTUM, AMEBOMA (1275)
RECTUM, ANUS, APPENDIX, CROHN'S DISEASE (2000)
RECTUM, ANUS, MALIGNANT MELANOMA (6727)
RECTUM, ANUS, PEDIATRIC PROBLEMS, PROLAPSE, IMPERFORATION, ANO-RECTAL RINGS (6778)
RECTUM, APPENDIX, CARCINOID TUMOR (6972)
RECTUM, BENIGN SOLITARY ULCER (3514)
RECTUM, BLADDER, RADIATION ABSORPTION DOSE RATE MEASUREMENT (1998)
RECTUM, CANCER, ARTERIOGRAPHY, DIAGNOSIS (0453)
RECTUM, CANCER, CHEMOTHERAPY (1221)•
RECTUM, CANCER, COBALT, THERAPY (0450)
RECTUM, CANCER, LYMPHOMA, BRILL-SYMMERS DISEASE (0448)
RECTUM, CANCER, SURGERY (1279)
RECTUM, CANCER, SURGERY, COMPLICATIONS, POSTOPERATIVE MORTALITY (1244)
RECTUM, CANCER, SURGERY, EFFECTS (0445)
RECTUM, CANCER, SURGERY, TREATMENT (0449)
RECTUM, CANCER, SURGICAL TREATMENT (0447)
RECTUM, CANCER, TREATMENT (0452)
RECTUM, CARCINOMA (7476)
RECTUM, COLON, CANCER, SURGERY (1268)
RECTUM, COLON, CROHN'S DISEASE, ULCERATIVE COLITIS (8225)
RECTUM, COLON, INJURIES, DIAGNOSIS, TREATMENT (2711)
RECTUM, COLON, PSEUDOMEMBRANOUS COLITIS, ANTIBIOTIC (1991)
RECTUM, COLON, RECTOCOLITIS, CROHN'S DISEASE, ARTICULAR SYMPTOMS (0473)
RECTUM, COLON, SIGMOID MYOTOMY,

DIVERTICULAR DISEASE, INTRALUMINAL PRESSURE (3459)*
RECTUM, CORTICOSTEROIDS, ABSORPTION, MAN (0294)*
RECTUM, DESCENDING PERINEUM SYNDROME TREATMENT (1525)
RECTUM, LEVATOR ANI DEFECT, PRIMARY PERINEAL HERNIA, CASE REPORT (0434)
RECTUM, LUMEN CONCENTRATION, ION REABSORPTION, WATER REABSORPTION, COCKROACH (3114)
RECTUM, MUCOSA, CYSTIC FIBROSIS, MUCOUS SECRETIONS (3464)*
RECTUM, MUCOSA, REGENERATION, ULCERATIVE COLITIS (6731)*
RECTUM, MUCOSA, SUCTION BIOPSY (4028)
RECTUM, POLYPS, CHILDREN (2723)
RECTUM, SIGMOID COLON, LYMPHOGRAPHY, CARCINOMA, RECTOSIGMOIDECTOMY (0199)
RECTUM, SIGMOIDOSCOPY, MUCOSAL ALTERATIONS (0454)
RECTUM, SURGERY, CANCER (7494)
RECTUM, SURGERY, COLON, POLYPOSIS (7460)
RECTUM, TUBERCULOSIS, RECTO-ILEAL FISTULA, SURGERY (2705)
RECTUM, TUMOR, GARDNER'S SYNDROME (6959)
RECTUM, ULCER (6704)
RECTUM, ULCER, PATHOLOGY, TREATMENT (1971)*
RESECTION, SINGLE-LAYER SUTURE (4300)
SCHISTOSOMIASIS, DIATHERMY THERAPY (1530)*
SCHISTOSOMIASIS, PARASITE, GRANULOMA, CECUM (2250)*
SECONDARY TUMOR, SMALL INTESTINE (6682)
SHIGELLA, MUCOSA (3994)*
SHORT-BOWEL SYNDROME, BOWEL RESECTION, DIETARY FAT, FLUID SECRETION, ELECTROLYTE SECRETION, GASTRIC HYPERSECRETION (2690)*
SHORT SEGMENT HIRSCHSPRUNG'S DISEASE, ANDRORECTAL MYOMECTOMY, CHILDREN (1257)
SIGMOID, CANCER, COLLAGENOSES, IMMUNOLOGY (8472)
SIGMOID, COLON, DIVERTICULITIS, ANASTOMOSIS (8188)
SIGMOID, DIVERTICULA, RESECTION, MOTILITY, PRESSURE STUDY, PROSTIGMINE (4268)*
SIGMOID, DIVERTICULOSIS, ENEMA, CONTRACTION, POLYSILOXANE FOAM (4267)*
SIGMOID COLON, ACUTE VOLVULUS, TREATMENT (6712)
SIGMOID COLON, DOLICHOSIGMOID, SYMPTOMS, SURGERY (0431)
SIGMOID COLON, WALL, DISCONTINUOUS ABSCESS (0457)
SIGMOID DIVERTICULITIS, FREE PERFORATION, SURGICAL TREATMENT (0483)
SIGMOID DIVERTICULITIS, PERIDIVERTICULITIS (0446)
SIGMOID VOLVULUS, RESECTION (6720)
SPASM, RADIATION, ANGIOGRAPHY (0928)
SPONTANEOUS PERFORATION, ANATOMOPATHOLOGY, AGE INCIDENCE (8963)
STERCORAL ULCER, HEMORRHAGE, CARDIOVASCULAR DISEASE (5906)
STRICTURE, ANUS, ANASTOMOSIS, SWENSON'S OPERATION, TREATMENT, CHILDREN (0436)
SURGERY, NEOMYCIN, ANTIBIOTIC (1261)
SURGERY, NEOPLASM (1258)
SURGERY, PEDIATRIC, CONTINENCE (8972)
SURGERY, SMALL INTESTINE, ENTEROKINASE ALKALINE PHOSPHATASE (7473)
SURGERY, STERILIZATION, GENTAMYCIN, FLORA (5941)
SURGERY, WOUND PROTECTION (1272)
TAENIA CECUM TONE, ELECTRICAL AND CHEMICAL STIMULATION, INNERVATION, GUINEA-PIG (0053)
TAENIA COLI, CONTRACTION, MEMBRANE POTENTIAL, BETA BLOCKING AGENT, SMOOTH MUSCLE (2474)*
TRANSMURAL COLITIS, CHRONIC ULCERATIVE COLITIS (8221)
TRAUMA, CLOSED INJURY, TREATMENT (1163)
TRAUMA, SURGICAL PROCEDURE, ABDOMINOPERINEAL PROCEDURE, ILEAL LOOP ANSTOMOSIS (2695)*
TRAVELER'S DIARRHEA, IMMUNITY, LIVING AGENT, ETIOLOGY (0477)
TUMOR, MALIGNANT (1283)
TUMOR ENZYME, CARCINOSTATIC THERAPY, HUMAN (1224)*
ULCER, ANORECTAL, NECROTIZING, LEUKEMIA, PUEDOMONAS INFECTION (0490)
ULCERATED COLONIC ADENOCARCINOMA, CLOSTRIDAL MYONECROSIS, RECOVERY (0480)
ULCERATIVE, PROCTITIS, RECTAL MUCOSA, HEMORRHAGIC, GRANULAR, SIGMOIDOSCOPY (5948)
ULCERATIVE COLITIS, ABO(H)-BLOOD GROUP ANTIBODIES, GASTROINTESTINAL ANTIGENS (8995)
ULCERATIVE COLITIS, ANABOLIC STEROID HORMONES (7501)
ULCERATIVE COLITIS, BLOOD GROUP (6937)*
ULCERATIVE COLITIS, CHOLESTASIS (8216)
ULCERATIVE COLITIS, COLECTOMY, LIVER DISEASE (4308)*
ULCERATIVE COLITIS, DIAGNOSIS (8048)
ULCERATIVE COLITIS, DIAGNOSIS, RETICULITIS (0940)*
ULCERATIVE COLITIS, ETIOLOGY, THERAPY (8215)
ULCERATIVE COLITIS, FECAL PROTEOLYSIS, ALBUMIN, IGG (2761)*
ULCERATIVE COLITIS, HISTOLOGY, IMMUNOLOGY, IMMUNOSUPPRESSIVE THERAPY (8218)
ULCERATIVE COLITIS, HYPOCORTICISM, HYPOPHYSEAL-ADRENAL SYSTEM, HYPOPHYSEAL INHIBITION (1302)
ULCERATIVE COLITIS, LACTOSE MALABSORPTION, CROHN'S DISEASE (7441)*
ULCERATIVE COLITIS, MICROFLORA, FECES (8212)

ULCERATIVE COLITIS, PROGNOSIS, ASSOCIATED ABNORMALITIES (8987)•
ULCERATIVE COLITIS, PSUEDOPOLYPOSIS (0496)•
ULCERATIVE COLITIS, SACRO-ILEITIS, POLYARTHRITIS (8214)
ULCERATIVE COLITIS, SMALL INTESTINE FUNCTION, MORPHOLOGY (6732)•
ULCERATIVE COLITIS, STEROID THERAPY, SURGERY (2685)•
ULCERATIVE COLITIS, TENESMUS, DIARRHEA, GASTRALGIA (1296)
ULCERATIVE COLITIS, ULCERATIVE PROCTITIS, FAMILY (6737)
ULTRASTRUCTURE, MUCOPOLYSACCHARIDOSIS (7453)•
ULTRASTRUCTURE, TAENIA COLI (6289)•
UNDIAGNOSED, CANCER, RACE DIFFERENCES, RECTUM, COLON (5921)
VASCULAR MANAGMENT, ESOPHAGOCOLOPLASTY (4305)
VESICOINTESTINAL FISSURE, ANATOMOPATHOLOGY, SURGERY (8978)
VOLVULUS, COLON, OBSTRUCTION, BARIUM ENEMAS, TREATMENT (0491)
VOLVULUS, MESENTERIUM COMMUNE, COLON (0456)

INTESTINE, SMALL

ABSORPTION, ACETAZOLAMIDE, DRUGS (7062)•
ABSORPTION, AGE FACTOR, RIBOFLAVIN (3099)•
ABSORPTION, AMINO ACID (2345)
ABSORPTION, AMINO ACIDS, CARNOSINE, HARTNUP DISEASE (5475)•
ABSORPTION, AMINO ACIDS, JEJUNUM, DUODENUM (5482)•
ABSORPTION, ASPIRIN, GLYCINE, TAURINE (5503)
ABSORPTION, AZULFIDINE, METABOLIC FATE, EXCRETION (8557)•
ABSORPTION, BILE SALT, FATTY ACID, MICELLE (2338)•
ABSORPTION, BILE SALT, JEJUNUM (2404)•
ABSORPTION, CHOLECYSTOJEJUNOSTOMY, DOG (4764)•
ABSORPTION, CHOLESTEROL, TRACER STUDIES (3103)•
ABSORPTION, COMPETITIVE INHIBITION (1626)•
ABSORPTION, DIABETIC RATS, SUGARS (8554)•
ABSORPTION, DIGESTION, ADVANCED AGE (2964)
ABSORPTION, DRUG, MESENTERIC BLOOD FLOW (5501)
ABSORPTION, FAT, CHILDREN (4041)
ABSORPTION, GLUCOSE, HISTIDINE, STARVATION EFFECT (2340)•
ABSORPTION, GLYCINE (2675)
ABSORPTION, GLYCOSIDES, RAT (0767)•
ABSORPTION, HEMOGLOBIN, IRON (5490)•
ABSORPTION, KIDNEY, CALCIUM (7069)
ABSORPTION, LIPID, CIRCULATION, MICELLE (4766)•
ABSORPTION, LIPID, ENZYME (3867)•
ABSORPTION, LIPIDS, XYLOSE, POST-RESECTION SYNDROME (0037)
ABSORPTION, MUCOSA, SUGAR TRANSPORT, D-ARABINOSE, ILEUM (2325)•
ABSORPTION, MUCOSA, TOXIC EFFECT (2334)•
ABSORPTION, MYO-INOSITOL, ACTIVE TRANSPORT, SUGAR BINDING SITES (3877)
ABSORPTION, OBSTRUCTION, BLIND LOOP SYNDROME (3452)
ABSORPTION, PEPTIC ULCER (5888)
ABSORPTION, PREGNANCY, LACTATION (4753)
ABSORPTION, PROTEOLYTIC ENZYME (6368)
ABSORPTION, RIBOFLAVIN, EXCRETION (7068)•
ABSORPTION, SUGAR, WATER (4784)
ABSORPTION, SULFAGUANIDINE, BILE SALT (5477)•
ABSORPTION, TRACER STUDIES, MARKER STUDIES, NONABSORBABLE INDICATORS (1632)•
ABSORPTION, VITAMINS, MALABSORPTION (0411)•
ABSORPTION, WATER, CHLORIDE, SODIUM, GLUCOSE, HYPOPHYSECTOMY, RAT (4756)•
ABSORPTION, XYLOSE, KINETICS, COMPARTMENTAL ANALYSIS, DRUG EFFECTS, RABBITS (0036)
ACHALASIA, AMYLOIDOSIS, BANTU (0254)
ACUTE DYSENTERY, TYPHOID FEVER, EPIDEMIOLOGY (1162)
ALKALINE PHOSPHATASE, PROPERTIES, OTHER ORGANS, RAT (0167)
AMEBIASIS, HEPATIC ABSCESS, TROPHOZOITE, INFANTS (0720)
AMINO ACID, AGING, NITROGEN, RAT (5443)
AMINO ACID, JEJUNUM, ACTIVE TRANSFER (1787)•
ANAPHYLACTIC SENSITIVITY, RECOVERY AFTER DESENSITIZATION, GUNIEA-PIG (0905)•
ANASTOMOSIS, EVERTING, INVERTING, BACTERIA (1100)
ANATOMY, VARIABILITY ACCORDING TO SEX, JAPAN (8531)
ANESTHETIC, SURGERY (2266)
ANGIOENDOTHELIOMA, STOMACH, OBSTRUCTIVE ILEUS (5795)
APPENDECTOMY, NORMAL APPENDIX (1281)
ATRESIA, OMPHALOCELE, GASTROSCHISIS (8840)
BACTERIA, FECES, MALABSORPTION (6184)
BACTERIAL FLORA, GAS CONTENT (3256)
BACTERIAL FLORA, GASTROINTESTINAL DISORDERS (1152)•
BACTERIAL FLORA, GASTROINTESTINAL DISORDERS, BILE ACID, VITAMIN B12, MALABSORPTION (3343)•
BACTERIAL FLORA, MUCOSAL BIOPSY, ANERORIC STREPTOCOCCI (2190)•
BACTERIAL FLORA, PATHOPHYSIOLOGY, MAN (8466)
BENIGN TUMOR, INTESTINAL INVAGINATION, SCHWANNOMA, HISTOCYTOFIBROMA (2457)
BENIGN ULCERS (7424)
BILIARY-INTESTINAL FISTULA (7660)

BIOPSY, FILTRATION (2676)
BIOPSY, JEJUNUM, BACTEREMIA (7677)*
BIOPSY, LACTASE ACTIVITY, LIPID ABSORPTION, PATHOLOGY (8933)
BIOPSY, RAPID NEW TECHNIQUES (3290)
BIOPSY METHODS, GASTRIC FISTULA (0960)
BLOOD FLOW, KCI, THIAZIDES, INTESTINAL STENOSIS (4871)*
BULLFROG EPITHELIUM, SODIUM, POTASSIUM WATER (8553)*
BY-PASS, MALABSORPTION, OBESITY, DIET (8178)
CALCIUM ABSORPTION, CHRONIC RENAL DISEASE, RATS (0037)
CALCIUM ABSORPTION, VITAMIN D, RICKETS RAT (8555)*
CALCIUM TRANSPORT, GASTRECTOMY, VITAMIN D DEFICIENCY (8123)
CANCER, DUODENUM, DIAGNOSIS, TREATMENT (0330)
CANCER, EXTRANEOUS BODY, DIAGNOSIS, MAN (0385)
CANCER, INCIDENCE, SYMPTOMATOLOGY (2777)
CANCER, TUMOR, MAN (0386)
CARCINOID, SPINE (1164)
CARCINOMA, REGIONAL ENTERITIS (1960)
CARCINOMA, SARCOMA, MAN (1177)
CELIAC DISEASE, ADOLESCENTS (0405)*
CELIAC DISEASE, CHRONIC ENTEROPATHY, IMMUNOLOGIC DEFICIENCY, CHILDREN (3442)*
CELIAC DISEASE, DIPEPTIDASE, DISACCHARIDASE (8929)*
CELIAC DISEASE, SERUM LEVEL, RED CELL FOLATE LEVEL, CHILD (3454)
CELL MORPHOLOGY, ULTRASTRUCTURE, SALINE WASH, CELL LOSS, LEUCOCYTES (5433)*
CHOLECODUODENOSTOMY, SPHINCTEROTOMY, PAPILLOSTENOSIS (0375)
CHOLERA, MICROFLORA, LARGE INTESTINE (4587)
CHOLERA, MICROFLORA, VIRBIOS (2193)*
CHOLERA, RABBIT (5626)
CHRONIC DUODENAL ILEUS, SURGERY (6643)
CHRONIC ENTERITIS, MOTILITY (6194)
CHRONIC ULCER, SURGERY (5868)
CHYLOUS ASCITES, LYMPHATIC, TRIGLYCERIDE, FATTY ACID (6218)
CIRCULATION, ISCHEMIA, SUPERIOR MESENTERIC ARTERY OCCLUSION, CROSS TRANSFUSION, ISHEMIC LIVER (5988)*
CIRCULATION, JEJUNUM, MAST CELLS, HISTAMINE (3816)*
CIRCULATION, MESENTERIC ARTERY, OCCLUSION, MUCOSA (2951)*
CIRCULATION, SURGERY, ANESTHESIA, HYPOXIA (2946)*
CLINICAL ANATOMY, PROJECTION ON FRONT ABDOMINAL WALL, JAPAN (8530)
CLOSED INJURY, TRAUMA, TREATMENT (1163)
COLON, RECTUM, ANUS, CROHN'S DISEASE (8159)
COLON, TRANSVERSE, SURGERY TRANSPLANTATION (1928)
CONGENITAL ATRESIA, JEJUNUM, ILEUM, COLON (6208)
CONTRACTION, AMPLITUDE, TONE, EFFECT, PROSTIGMINE, ANIMALS (5512)*
COUNTERCURRENT EXCHANGE, VILLUS, ABSORPTION, OXYGEN TRANSPORT (1627)*
CROHN'S DISEASE, ANGIOGRAPHY, INFARCT, BLOOD SUPPLY (5066)
CROHN'S DISEASE, AZATHIOPRINE (0397)*
CROHN'S DISEASE, DIAGNOSIS, RADIOLOGY, PATHOLOGY (4292)*
CROHN'S DISEASE, FECAL PROTEOLYSIS, ALBUMIN, IGG (2761)*
CROHN'S DISEASE, GENETICS, REGIONAL ILEITIS (3436)*
CROHN'S DISEASE, RESECTION, ILEUM (5068)
CROHN'S DISEASE, STENOSIS, MAN (0401)
CROHN'S DISEASE, TRANSMISSABLE AGENT (8157)*
CUTANEOUS URETERO-ILEOSTOMY, URINARY DIVERSION, MYELOMENINGOCELE, CHILDREN (0372)
DECARBOXYLASE ACTIVITY, ENZYME SPECIFICITY, MITOCHONDRIAL FRACTIONS, 5-HYDROXYKYNURENINE, 4, 6-DIHYDROXYQUINALINE (3025)*
DECOMPRESSION, SURGERY, EMERGENCY (1189)
DERMATITIS HERPETIFORMIS, ENZYME ACTIVITY, GASTROINTESTINAL DISEASE (3446)*
DIAGNOSIS, PATHOLOGY, LYMPHOMA, RETICULUM CELL SARCOMA (1967)
DIGESTION, ABSORPTION, CHOLESTEROL, LECITHIN (0917)
DIGESTION, SECRETION, ABSORPTION (3235)
DIGESTION, SECRETION, ION, SHEEP (4877)
DISACCHARIDE DEFICIENCY, CONGENITAL DEFICIENCY, GENETIC ABERRATION (1158)
DISEASES, DIAGNOSIS, ELECTRON MICROSCOPY (9137)
DISEASES, PHARMACOTHERAPY, PATHOPHYSIOLOGY (5863)
DISEASES, TAUROCHOLATE, ENTERO-HEPATIC CIRCULATION (8896)*
DISORDERS, MORPHOLOGY, RHEUMATISM (0272)*
DIVERTICULA, LOCALIZATION, HEMORRHAGE, MALIGNANCY (5784)
DIVERTICULITIS, DIVERTICULOSIS, CLINICAL FEATURES (2002)
DIVERTICULOSIS, MEGALOBLASTIC ANEMIA (4222)
DIVERTICULUM, DUODENUM, JEJUNUM (2665)
DNA, FORMATION, LOSS, EPITHELIUM (1786)*
DRUG ABSORPTION, ATROPINE SULFATE, N-BUTYL HYOSCINE BROMIDE, DOGS (0056)
DRUG ABSORPTION, BILE SALTS (3863)*
DRUG ABSORPTION, OLEIC ACID, POLYSORBATE 80, RAT (5502)
DUODENAL, EPITHELIUM, ULTRASTRUCTURE, ELECTRON MICROSCOPY, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)*
DUODENAL CONTENTS, NEW TECHNIQUE, SAMPLING, PATHOGEN, DEMONSTRATION (3311)

DUODENAL SACS, LEUCINE, MUCOSAL TRANSLOCATION, RAT (0060)
DUODENAL ULCER, ANTICHOLINERGICS, GASTRIC ACID SECRETION (1112)•
DUODENAL ULCER, CHILDHOOD (2652)
DUODENAL ULCER, DIETARY EFFECT (0341)
DUODENAL ULCER, SURGERY, VAGOTOMY (5778)
DUODENITIS, MORPHOLOGY, DIVERTICULOSIS (8109)
DUODENOJEJUNAL ANGLE, OBSTRUCTION, HEMODYNAMICS, DOGS (0359)•
DUODENOJEJUNAL JUNCTION, OBSTRUCTION, CONGENITAL (8076)
DUODENUM, ABSORPTION, TRIGLYCERIDES (0032)•
DUODENUM, ADENOMA, BRUNNER'S GLAND (1892)
DUODENUM, ALKALINE PHOSPHATASE, PYRO-PHOSPHATASE INHIBITION, MOUSE (0171)
DUODENUM, ASPIRATES, EPINEPHRINE, SECRETIN (1092)
DUODENUM, BENIGN, TUMOR, GALLBLADDER OBSTRUCTION (0338)
DUODENUM, BENIGN NEOPLASMA, MALIGNANT NEOPLASM, PATHOLOGY, RADIOLOGY (4134)•
DUODENUM, BILE DUCT, CHOLEDOCODIGESTIVE ANASTOMOSIS, LATERAL, TERMINAL, COMPLICATIONS (0666)
DUODENUM, BRUNNER'S GLAND, POLYPOID HAMARTOMA, SURGERY (2607)
DUODENUM, CARCINOMA (5000)
DUODENUM, CHOLECYSTOKININ-PANCREOZYMIN, GASTRIC PEPSIN, GASTRIN, MECHOLYL, INHIBITION OF SECRETIONS (3135)•
DUODENUM, CHRONIC OBSTRUCTION (7359)
DUODENUM, COLUMNAR CELL, RADIOAUTOGRAPHY (7794)•
DUODENUM, CONGENITAL DIAPHRAGMATIC OCCLUSION (6650)
DUODENUM, CYST, BILE, STONES, OBSTRUCTION, PANCREATITIS (4131)•
DUODENUM, DEOXYCHOLATE, REABSORPTION, ILEITIS, TERMINAL (3418)•
DUODENUM, DIVERTICULUM, SURGERY (2673)
DUODENUM, DRAINAGE, SPHINCTEROTOMY (1869)
DUODENUM, DUODENAL PAPILLA, ENDOSCOPY (6517)•
DUODENUM, DUODENOSCOPY, FIBER DUODENOSCOPE, PAPILLA OF VATER, CANCER DIAGNOSIS (3272)
DUODENUM, ENTEROKINASE, LOCALIZATION, RAT (3024)•
DUODENUM, ENZYMES (0741)
DUODENUM, FAMILIAL ATRESIA (6619)
DUODENUM, G-2 POPULATION CELL, CELL DIVISION, MOUSE (2479)
DUODENUM, HERNIA, DIAGNOSIS, RADIOGRAPHY (3278)
DUODENUM, HETEROTOPIC, GASTRIC MUCOSA, HISTOLOGY, PEPTIC ULCER (5826)•
DUODENUM, HISTOLOGY, 5-HYDROXYTRYPTAMINE, MOTILITY (1033)
DUODENUM, INITIAL JEJUNUM, CALCIUM MALABSORPTION, HYPOCALCEMIA (8172)
DUODENUM, ION CONCENTRATION, CALCIUM, MAGNESIUM, PANCREATITIS (4347)•
DUODENUM, INTRAMURAL HEMATOMA, TREATMENT (0278)
DUODENUM, ISOLATED, BRADYKININ, PROSTAGLANDIN E1, MOTILITY, RAT (4797)•
DUODENUM, JEJUNUM, ILEUM, CALCIUM ABSORPTION, LACTOSE, DIET (0034)
DUODENUM, LIPOMA (1079)
DUODENUM, LYMPHOSARCOMA (1091)
DUODENUM, METABOLISM, LYSOLECITHIN (5621)•
DUODENUM, MORPHOLOGY, ENDOCRINE CELL (6284)•
DUODENUM, MORPHOLOGY, VILLUS EPITHELIAL CELLS, MALABSORPTION, CHRONIC ALCOHOLISM (3707)•
DUODENUM, MUCOSA, ABSORPTION, L-ALANINE, SODIUM EFFECT, THORYVELLA LOOPS (5489)•
DUODENUM, MUCOSA, ULTRASTRUCTURE, EPITHELIUM, GOLGI APPARATUS, TRACER STUDY (4704)•
DUODENUM, OBSTRUCTION, CHILDREN, INFANTS, CONGENITAL EMBRYOLOGY (0287)
DUODENUM, OCCLUSION, NEONATE (2617)
DUODENUM, PANCREOZYMIN, CHOLECYSTOKININ, RADIOIMMUNOASSAY (0084)•
DUODENUM, PEPTIC ULCER (1129)
DUODENUM, PEPTIC ULCER, SURGERY (1924)
DUODENUM, PEPTIC ULCER, SYMPTOMS(2650)
DUODENUM, PEPTIC ULCER, VAGOTOMY (1921)
DUODENUM, POLYPOID CARCINOMA, DIAGNOSIS, TREATMENT (1891)
DUODENUM, PRIMARY CARCINOMA (1898)
DUODENUM, PRIMARY CARCINOMA, DIAGNOSIS, TREATMENT (1890)
DUODENUM, RADIOGRAPHY, PULMONARY EMPHYSEMA (1918)
DUODENUM, RUPTURE, TRAUMA (1934)
DUODENUM, SCOLIOSIS, RADIOLOGY, SURGERY (6616)
DUODENUM, STENOSIS, ATRESIA, MALROTATION, MESENTERIC ARTERY (5013)
DUODENUM, STOMACH, ANTICHOLINERGIC (1661)
DUODENUM, STOMACH, BENIGN TUMOR, DIAGNOSIS, SURGERY (2609)
DUODENUM, STOMACH, BICARBONATE RESPONSE, SECRETIN, PANCREAS (3228)•
DUODENUM, STOMACH, PEPTIC ULCER, SURGERY (1904)
DUODENUM, STOMACH, STRESS ULCER, TREATMENT (1911)
DUODENUM, STOMACH, ULCERS, MULTIPLE (0289)
DUODENUM, SUBMUCOSAL HEMATOMA (7419)
DUODENUM, SURGERY (1864)
DUODENUM, ULCER, CLINICAL TREATMENT (2626)
DUODENUM, ULCER, GASTRIC MUCUS, VOSCOSITY (1916)
DUODENUM, ULCER, HEMORRHAGE, SURGERY (1915)
DUODENUM, ULCER, HISTAMINE, SECRETION (4189)•

DUODENUM, ULCER, INDICATION, OPERATION, BETAZOLE TEST (0181)•
DUODENUM, ULCER, OSMOLARITY, INHIBITION, GASTRIC JUICES (3391)•
DUODENUM, ULCER, PYLOROPLASTY, RADIOLOGICAL ASSESSMENT (2610)
DUODENUM, ULCER, SMOKING, BODY FORM (4182)•
DUODENUM, ULCER, SURGERY (1920)
DUODENUM, ULCER, SURGICAL TREATMENT (2651)
DUODENUM, ULCER, VAGOTOMY, APPRAISAL INSULIN TEST (0343)
DUODENUM, ULCER, PERFORATION, VAGOTOMY, PYLOROPLASTY (0350)
DUODENUM, ULCER PERFORATED, TREATMENT, VAGOTOMY (0345)
DUODENUM, ULCERATION, UROLOGICAL SURGERY (2647)
DUODENUM, VAGOTOMY, DISTAL ANTRECTOMY (1900)•
D-XYLOSE ABSORPTION TEST, LIMITATION (8003)•
E.COLI, ENTEROPATHOGENIC (8424)•
ELECTRIC ACTIVITY (3894)
ELECTRIC ACTIVITY, VASCULAR OCCLUSION, GANGRENE, DOG (0049)
ELECTRICAL POTENTIAL, ION, MUCOSA (4803)
ELECTROPHYSIOLOGY, DOG (0775)•
ELECTROPHYSIOLOGY, ELECTROLYTES, VOLTAGE, RAT (0768)•
ENDOMETRIOSIS (7420)
ENTERITIS, CLOSTRIDIUM, DIARRHEA (4884)
ENTERITIS, RADIOLOGY (1959)
ENTERITIS, STENOSIS, CELIAC ARTERY (5069)
ENTEROCOLITIS, CLINICAL CHARACTERISTICS, EPIDEMIOLOGY, SANITATION, CHILDREN (0689)
ENTEROCOLITIS, MUCOSA, REGENERATION, AUTORADIOGRAPHY, HISTOCHEMISTRY, UREMIA, MICE (6248)
ENTEROKINASE, ALKALINE PHOSPHATASE, COLECTOMY (7473)
ENTEROLITHIASIS, RADIOLOGY, MECKEL'S DIVERTICULUM (1958)
ENTEROPATHY, GAS, PORTAL VEIN (8142)•
ENTEROPATHY, MALABSORPTION, MELANOMA (7736)
ENZYME, ANTIGEN, ELECTRON MICROSCOPY (1785)•
ENZYME, CARBOHYDRATE ABSORPTION, MEMBRANE PERMEABILITY (4870)•
ENZYME, CAROTENE DIOXYGENASE, RETINAL (6494)•
ENZYME, DUODENUM, RABBIT (5617)•
ENZYME, LACTASE, INTESTINAL DISACCHARIDES (1782)•
ENZYME, MUCOSA, FOOD LOAD (7827)•
ENZYME, RADIOISOTOPE, TRACE STUDY (0009)•
ENZYME, RETINOIC ACID, INTESTINAL MUCOSA (1783)•
ENZYME, SYNTHESIS, PROTEIN, DNA, RADIOISOTOPE TRACER STUDIES (0162)•
ENZYME ACTIVITY, COLCHICINE, GUINEA PIG (4711)•
ENZYME ACTIVITY, DISACCHARIDASE, MUCOSA, ANTIBIOTIC, PATHOLOGY (2807)•
ENZYME ACTIVITY, HISTOCHEMISTRY, LARGE INTESTINE, MAN, ANIMALS (0752)•
ENZYME ACTIVITY, MUCOSA (2285)•
EOSINOPHILIC ENTERITIS, RADIOLOGY (7722)
EPITHELIAL CELL, ABSORPTION, METABOLISM, CARBOHYDRATES (7989)
EPITHELIAL CELLS, AGE SENSITIVITY, RADIATION (7044)
EPITHELIUM, CRYPT, VILLUS, MITOCHONDRIA, ENZYME ACTIVITY (8513)•
EPITHELIUM, ISOLATED CELLS, METABOLISM (7986)•
EPITHELIUM, MUCOSA, CELL SUSPENSION (5467)
EPITHELIUM, MUCOSUBSTANCE, ENTEROTOXIN STAPHYLOCOCCAL (6672)•
EPITHELIUM, NEUTRAL AMINO ACIDS, JEJUNUM (5500)
EROSION, HEMORRHAGE, POST AORTIC RESECTION, ROENTGENOLOGY (2656)•
EVERTED SACS, GLUCOSE TRANSPORT, O2 AVAILABILITY (6361)
EXTROPHY OF THE CLOACA, MANAGEMENT (2714)
FATS, EMULSIFICATION, GASTRIC LIPASE, TRIGLYCERIDE HYDROLYSIS, PANCREATIC LIPASE, ATP, FATTY ACIDS, MALAABSORPTION (4869)•
FATTY ACID, LIPID, METABOLISM (6493)•
FECAL FLORA, URINARY ORGANISMS, E. COLI (0429)
FERRITIN SYNTHESIS, IRON, BARRIER (8688)•
FISTULA, SURGERY, NONOPERATIVE THERAPY DIET AND ELECTROLYTES (8903)
FISTULA, URETERO-DUODENAL (1881)
5-HYDROXYTRYPTOPHAN DECARBOXYLASE (7035)•
5-THIO-D-GLUCOSE TRANSPORT (7831)•
FLORA, MONOSACCHARIDE MALABSORPTION, BILE-SALT CONJUGATION, INFANTS (0418)
FLUID ACCUMULATION, CHOLERA, INFANT RABBIT (0918)
FOLATE, CONGENITAL MALABSORPTION (6684)•
FOLIC ACID, MALABSORPTION, POLYGLUTAMATES (8938)
FOREIGN BODIES, SWALLOWED (4645)
FREUND'S ADJUVANT, STOMACH, THYMUS, ARTHRITIS (4578)
FUNCTION, MORPHOLOGY, ULCERATIVE COLITIS (6732)•
FUNCTION, STRUCTURE, RICKETS, VITAMIN D DEPENDENT (3420)•
GALLBLADDER, PRESSURES, VAGOTOMY, CHOLCYSTOKININ STIMULATION (1649)•
GALLSTONE, ILEUS (8150)
GALLSTONE, ILEUS, ETIOLOGY, RADIOLOGY (7426)
GASTRECTOMY, FUNCTION, MORPHOLOGY, CONTRAST MEDIA (2597)
GASTRODUODENAL ULCER, PERFORATION, PNEUMOGASTROGRAPHY, DIAGNOSIS, TECHNIQUE (0219)

LIBRARY U. OF I. URBANA-CHAMPAIGN

GASTROENTERITIS, STOMACH, BIOCHEMISTRY (2223)
GASTROINTESTINAL REVERSAL, SURGICAL TECHNIQUES, ADVANTAGES, COMPLICATIONS (1155)
GASTROJEJUNAL FISTULA, PEPTIC ULCER, TREATMENT (1120)
GASTROJEJUNOPLASTY, GASTRIC STUMP, INTESTINAL GRAFT (7338)
GASTROSCHISIS, SURGERY, CONGENITAL DEFECT (6205)
GIARDIASIS, MALABSORPTION (6280)
GIARDIASIS, TREATMENT, CHLORHYDROXYGUINOLIN (1548)
GLUCOCORTICOIDS, STOMACH, COLON (7705)
GLUCOSE-6-PHOSPHATE DEHYDROGENASE ACTIVITY, DUODENUM, MUCOSA, MUSCULATURE, RATS (0160)•
GLUCOSE UTILIZATION, OXYGEN ABSORPTION, JEJUNUM (1587)
GLUTENENTEROPATHY, BIOPSY, DERMATITIS HERPETIFORMIS (7437)•
GLYCINE TRANSPORT, SODIUM, BIRD (4776)
GLYCOSIDASE, JEJUNUM, ILEUM, DUODENUM (7031)•
GOBLET CELL, PANETH CELL (3031)•
GUT-, ISOLATED, PERFUSION, PH, PARTIAL PRESSURES, O2, CO2, GLUCOSE, ELECTROLYTES, EXPERIMENTAL STUDY, DOG (0168)
HELMINTHIASIS, TAENIASIS (1543)
HEMANGIOMA, OBSTRUCTION, VOLVULUS, CONGENITAL ATRESIA, NEONATE (5860)
HEMOPERFUSION, TEMPERATURE DEPENDENCE, MOTILITY, ABSORPTION, O2 UTILIZATION (5615)•
HEMORRHAGE, DIVERTICULI, LAPAROTOMY, ARTERIOGRAPHY (5351)
HEMORRHAGE, RADIOGRAPHY (4900)
HEMORRHAGE, ULCER, DIVERTICULUM, TUMOR (4901)
HEMORRHAGE, UPPER GASTROINTESTINAL TRACT, TREATMENT (0695)
HEMORRHAGIC DIVERTICULITIS (1171)
HIATAL HERNIA, GASTROESOPHAGEAL REFLUX, DIAGNOSIS (0947)•
HISTOCHEMISTRY, HORMONE, CHILDREN (3032)•
HISTOCHEMISTRY, MUCOSA, SUBCELLULAR FRACTION, DIHYDROSPHINGOSIN, PALMITIC ACID (5616)•
HISTOLOGY, DIARRHEA, CELIAC DISEASE, MALABSORPTION, TROPICAL SPRUE (2194)•
HISTOLOGY, TRACER TECHNIQUE, VILLI, MORPHOLOGY (1571)•
HISTOLOGY, ULTRASTRUCTURE, MUCOSA, FREEZING (2290)•
HOMOTRANSPLANTS, IMMUNOLOGIC REJECTION RESPONSE (3234)
HUMAN EMBRYO, ORGAN CULTURE, VIRUS (7998)
HUMAN FETAL, VIRUS, CYTOPATHIC CHANGES (7984)•
HYDATID CYST, RUPTURE, LIVER (1561)
HYDATIDOSIS, INTESTINAL PARASITE, LIVER CYST (1541)
HYDROCHLORIC ACID, ELECTROLYTE CHANGE ASPIRATE (1070)
ILEAL ATRESIA, INTRAUTERINE, INTUSSUSCEPTION (5864)
ILEAL LOOP, TEST, CHOLERAGENIC TOXIN, VASCULAR PERMEABILITY FACTOR, IDENTIFICATION (3706)•
ILEECTOMY, DIARRHEA, STEATORRHEA, CHOLESTYRAMINE, POLYSORBATE-80 (3421)•
ILEITIS, APPENDICITIS (1175)
ILEOCECAL VALVE, ADENOCARCINOMA, CLINICAL PICTURE (0430)
ILEOCECAL VALVE, LIPOMATOSIS, ADENOPAPILLOMA (8144)
ILEOCECUM, TUBERCULOSIS (0389)
ILEOJEJUNAL NEOPLASM, RECKLINGHAUSEN'S DISEASE, COMPLICATION (0370)
ILEOSTOMY, LONG-TERM REHABILITATION (2679)
ILEUM, ALKALINE PHOSPHATASE, LYSOSOME NEONATE (1593)
ILEUM, ANTIPERISTALTIC LOOP FORMATION, MESENTERY, TECHNIQUE, ILEITIS (0055)
ILEUM, CALCIUM TRANSPORT (1646)•
ILEUM, CARCINOID (7421)
ILEUM, CHOLINERGIC ACTION, HISTAMINERGIC ACTION (3131)
ILEUM, CHOLINERGIC INHIBITION (2360)
ILEUM, COLON, TRANSMURAL ELECTRICAL POTENTIAL DIFFERENCE, RECORDING ELECTRODES (1647)•
ILEUM, DENERVATION, ACETYLCHOLINESTERASE, ACTIVITY, RABBIT (5620)•
ILEUM, DIAGNOSTIC PROCEDURE, ISCHEMIA, DYE TEST (5658)•
ILEUM, DIVERTICULITIS, ACUTE (2668)
ILEUM, ELECTRICAL STIMULATION, CONTRACTION (6378)•
ILEUM, FALLOPIAN TUBE, ANASTOMOSIS, SOW (0919)
ILEUM, FIBROMA (2666)
ILEUM, 5-HYDROXYTRYPTAMINE SUPERSENSITIVITY, COCAINE (6495)
ILEUM, GALLBLADDER, CONTRACTION, OCTAPEPTIDE, CHOLECYSTOKININ (4794)•
ILEUM, GLYCINE, TRANSPORT (8549)•
ILEUM, ION TRANSPORT MECHANISMS, ABSORPTION, TRIPLE-LUMEN PERFUSION SYSTEM (3089)•
ILEUM, ISOLATED, AURICLE, CAPSAICIN (1652)
ILEUM, JEJUNUM, ABSORPTION, CHOLESTEROL, RABBIT (3096)•
ILEUM, JEJUNUM, DISACCHARIDASES, MUCOSA (1942)
ILEUM, JEJUNUM, RESECTION METABOLISM, HISTOCHEMISTRY (3449)•
ILEUM, LYMPHOID HYPERPLASIA (7422)
ILEUM, MALABSORPTION, JOHNE'S DISEASE, HISTIDINE, MUCOSA (0404)•
ILEUM, MELANOSIS, ELECTRON MICROSCOPY (1933)
ILEUM, MITOSIS, CRYPT OF LIEBERKUHN (3093)
ILEUM, MOTILITY, SMOOTH MUSCLE, CATECHOLAMINES (5517)•
ILEUM, NEONATE, RAT (4730)
ILEUM, NITROGEN MUSTARD (0389)

ILEUM, OBSTRUCTION, HEMODYNAMICS, DOG (0360)•
ILEUM, PERFUSION, ANGIOTENSIN, ADRENERGIC EFFECTS, CAT (0776)•
ILEUM, PEYER'S PATCHES, IGM MEMORY, RATS (0163)•
ILEUM, PEYER'S PATCHES, IRRADIATION, CERIUM 144, RAT (6190)
ILEUM, RABBIT, BRUSH BORDER, TRANSPORT (8550)•
ILEUM, RADIOGRAPHY (4051)
ILEUM, RECEPTORS, CHOLINERGIC MECHANISMS, PHENANTHROLINE CHELATES, RUTHENIUM CHELATES, RAT, GUINEA-PIG (4449)•
ILEUM, RESECTION, BILE SALT POOL, COMPOSTION, SIZE (1153)•
ILEUM, THIRY-VELLA LOOP, SODIUM DEPLETION, ELECTROLYTE, INTESTINAL TRANSPORT (1629)•
ILEUM, TOXOGONIN, PARASYMPATHOLYTIC EFFECT, GUINEA PIG (2476)
ILEUM, TRANSFER, ALANINE, SODIUM (3106)•
ILEUM, TRANSPORT, SODIUM, ALANINE INTERACTION, RABBIT (3105)•
ILEUM OBSTRUCTION, IMPACTED ANTACID TABLETS (8154)
ILEUS, GALLSTONE, OBSTRUCTION (0387)
ILEUS, MECONIUM, CYSTIC FIBROSIS, ROENTGEN DIAGNOSIS (3417)•
ILEUS, OBTURATOR HERNIA, MAN (1166)
IN VITRO PREPARATION, CHOLECYSTOKININ-PANCREOZYMIN, ACETYLCHOLINE-LIKE ACTION, VILLIKININ (3442)•
INDICATOR DILUTION STUDY, MARKER COMPARISON, CHOLERA (8928)•
INFARCT, SUPERIOR MESENTERIC ARTERY, EMBOLECTOMY (9204)
INFARCTION, ISCHEMIA, OCCLUSION (2756)
INFARCTION, PORTAL VEIN, RADIOLOGY (2219)
INNERVATION, MOTILITY, DOG (7081)
INNERVATION, PLEXUS, INNER MUSCLE ALYER, CATECHOLAMINES (4696)•
INTRALUMINAL DIVERTICULUM, EMBRYOGENETIC BASIS, PHYSIOPATHOLOGY, ACUTE PANCREATITIS (0335)
INTRALUMINAL PRESSURE, MOTILITY, HORMONAL CONTROL, MANN-BOLLMAN FISTULA (5516)•
INTRINSIC FACTOR, MALABSORPTION, SKIN DISORDERS, SCHILLING TEST (8935)
INTUSSUSCEPTION, DIAGNOSIS, BARIUM, ORAL, X-RAY (8897)•
INTUSSUSCEPTION, MAN (0378)
INVAGINATIONS, MULTIPLE, FOREIGN BODY (0253)
IRON ABSORPTION, TRACER STUDY, ORAL ADMINSTRATION, IRON DEFICIENCY (3866)•
JEJUNAL BIOPSY (7281)
JEJUNAL CRYPTS, DIURNAL FLUCTUATIONS, MITOSIS, DNA SYNTHESIS (0906)•
JEJUNAL DIVERTICULOSIS, VOLVULUS, METABOLISM (8146)
JEJUNAL GRAFT, SECRETION, GASTROJEJUNAL AUTOPLASTY (7376)
JEJUNAL INTERPOSITION, NUTRITION, RADIOLOGY, POST-GASTRECTOMY (3368)
JEJUNAL LACTASE DEFICIENCY, LACTOSE MALABSORPTION, ESKIMOS (0403)•
JEJUNAL LACTASE DEFICIENCY, UNSPECIFIC ABDOMINAL COMPLAINTS (0356)•
JEJUNAL LOOP, DIALYSIS, UREMIA, RENAL FAILURE, RAT (4777)
JEJUNO-ILEOSTOMY, BLOOD SUGAR, SERUM INSULIN (3419)•
JEJUNOSTOMY, FEEDING, DECOMPRESSION (1181)
JEJUNUM, ABSORPTION, LIPIDS, STEATORRHEA, BILE-SALTS (0409)•
JEJUNUM, ABSORPTION, SODIUM, AMINO ACID (6349)•
JEJUNUM, ADENOCARCINOMA (3432)
JEJUNUM, ALDOPENTOSE, TRANSPORT, RAT (3097)•
JEJUNUM, AMINO ACIDS, UPTAKE, DOG (0912)•
JEJUNUM, ANTILYMPHOCYTE SERUM (1931)
JEJUNUM, BILE ACID, METABOLISM, GASTRECTOMY (6608)•
JEJUNUM, BILE SALT, INHIBITION, TRANSPORT, 3-O-METHYL GLUCOSE, RAT (3169)•
JEJUNUM, CARCINOMA, RECURRENT GASTROINTESTINAL HEMORRHAGE (3426)
JEJUNUM, CELIAC DISEASE, VILLI, PEPTIDASES (3448)•
JEJUNUM, CHOLERA EXOTOXIN, SECRETION, CYCLOHEXIMIDE (6158)•
JEJUNUM, CIRCULAR AND LONGITUDINAL MUSCLE, ELECTROPHYSIOLOGY, CAT, RABBIT (2358)•
JEJUNUM, COLON, ENZYME HISTOCHEMISTRY, ACTH, CORTISONE (0169)
JEJUNUM, CYCLOHEXIMIDE, SODIUM FLUXES, CHOLERA (6942)•
JEJUNUM, DIVERTICULITIS (6681)
JEJUNUM, DIVERTICULOSIS, ENTEROLITH, OBSTRUCTION (1185)
JEJUNUM, DIVERTICULOSIS, MALABSORPTION (3457)
JEJUNUM, DOG, IN VITRO, VILLI, MICROPUNCTURE (0766)•
JEJUNUM, DUODENUM, ILEUM, SLOW WAVE (3884)•
JEJUNUM, DUODENUM, STORAGE DISEASE, MUCOSA, ULTRASTRUCTURE (0358)•
JEJUNUM, DUODENUM, ULCER, RESECTION, VAGOTOMY, PERITONITIS, DYSTONIA, PAIN (5025)
JEJUNUM, ENTEROCHROMAFFIN CELLS, ULTRASTRUCTURE MOUSE (0004)•
JEJUNUM, ENZYME, VILLI, CELLULAR DIFFERENTIATION (1784)•
JEJUNUM, EPITHELIUM, GLUCOSE-6-PHOSPHATASE, THIAMINE PYROPHOSPHATASE (4703)•
JEJUNUM, ERGOMETRINE, DOPAMINE, NORADRENALINE, RABBIT (0915)
JEJUNUM, FOLATE METABOLIZING ENZYMES, DIET, FOLATE (5611)•
JEJUNUM, GLYCOLYTIC ENZYME, SEX STEROID REGULATION (5427)•
JEJUNUM, GLYCOLYTIC ENZYME ACTIVITY, HORMONE, RAT (5619)•

JEJUNUM, HEMATOMA, TRAUMA, FELSON'S SIGN (4217)
JEJUNUM, HUMAN, GLYCOLYTIC ENZYMES, DIETARY REGULATION, FOLIC ACID (5613)•
JEJUNUM, ILEUM, ABSORPTION, URINE CONTENTS, DOG (0029)•
JEJUNUM, ILEUM, ALDOSTERONE, MUCOSAL TRANSFER SYSTEM, SODIUM, POTASSIUM WATER (1630)•
JEJUNUM, ILEUM, DIPEPTIDE HYDROLASES (0904)•
JEJUNUM, ILEUM, MOTILITY, CONTRACTILITY, PROPLYENE GLYCOL, ANTAGONISTS (3885)•
JEJUNUM, INDICATOR DILUTION STUDY, ACUTE CHOLERA (9201)•
JEJUNUM, INFARCTION, PANCREATITIS (5968)
JEJUNUM, IRRITATION, POSTVAGOTOMY, DUMPING, DIARRHEA, GASTRIN MECHANISM (0298)
JEJUNUM, LEIOMYOBLASTOMA, ALCOHOL-INDUCED PAIN (3425)
JEJUNUM, LEIOMYOMA (1944)
JEJUNUM, MALABSORPTION, DIARRHEA (3698)•
JEJUNUM, MALABSORPTION, GLUCOSE TRANSPORT, HETEROZYGOTES (3546)•
JEJUNUM, MALABSORPTION, NEOMYCIN-INDUCED, MAN (2685)•
JEJUNUM, MALABSORPTION, PAROMOMYCIN-INDUCED, MAN (2689)•
JEJUNUM, MICROBIAL INFESTATION, PARASITIC INFESTATION SYNDROME, ACHYLIA (3786)
JEJUNUM, MORPHOLOGICAL CHANGE, RESECTION (1191)
JEJUNUM, MORPHOLOGY, SPRUE, HAITI (5890)
JEJUNUM, MORPHOLOGY, UGANDA (1199)
JEJUNUM, MUCOSA, ABSORPTION, SODIUM, BICARBONATE (3100)•
JEJUNUM, MUCOSA, CELIAC DISEASE, PREDNISOLONE (3437)•
JEJUNUM, MUCOSA, DISACCHARIDASE, ACTIVITY, DECREASE, COLCHICINE (3035)•
JEJUNUM, MUCOSA, DISACCHARIDASE, GERIATRICS (0161)•
JEJUNUM, MUCOSA, ENTEROPATHY, DERMATITIS HERPETIFORMIS (3447)•
JEJUNUM, MUCOSA, ENZYME, GLYCOLYTIC, GLUCONEOGENIC, ALLOXAN-DIABETES, FASTING (2282)•
JEJUNUM, MUCOSA, INFANTILE MALABSORPTION, DISACCHARIDASES (2688)•
JEJUNUM, MUCOSA, PATHOLOGY, METAPLASIA, ULTRASTRUCTURE (2582)•
JEJUNUM, MUCOSA, POTENTIAL DIFFERENCE, IONS (3862)•
JEJUNUM, MUCOSA POUCHES, HISTOPATHOLOGY (7853)•
JEJUNUM, MYOSARCOMA (7425)
JEJUNUM, RUPTURE, CLOSED ABDOMINAL TRAUMA (1190)
JEJUNUM, SODIUM, ENZYME (1633)•
JEJUNUM, SURGERY (1154), (5046)
JEJUNUM, SPONTANEOUS CONTRACTIONS, ANTIBIOTICS, BLOCKING AGENTS, MUSCLE RELAXATION, RECEPTOR SITES (4787)•
JEJUNUM, SURGERY, VALVE, MALABSORPTION (3444)•
JEJUNUM, TRANSPORT, METOCLOPRAMIDE, DOG (3107)•
JEJUNUM, TUMOR, PRIMARY, MALIGNANT (1945)
JEJUNUM, WATER AND SODIUM ABSORPTION, ABDOMINAL SURGERY (2657)•
KWASHIORKOR, INTESTINAL MUCOSA, SERIAL BIOPSY, MUCLEIC ACID, PROTEIN CONCENTRATION (3440)•
LACTASE, LACTOSE MALABSORPTION, PEPTIC ULCER SURGERY, STEATORRHEA (1113)•
LACTASE DEFICIENCY (7445)
LACTOSE, MALABSORPTION (3455)
LAMBLIA, VILLI, MOUSE, MUCOSA (3008)
LEIOMYOMA, MASSIVE MELENA (8910)
LEIOMYSARCOMA (1946)
LESIONS, POTASSIUM THERAPY (6997)
LESIONS, RADIOLOGY (7273)
LESIONS, RESECTIONS, PEPTIC ULCERS, CALCIUM ABSORPTION, DIGESTIVE TRACT DISEASES (0035)
LIPIDOSIS, NEONATAL, GENETIC, MICE (2426)
LIVER, PLACENTA, ENZYME, FETUS, MAN (1730)
LONGITUDINAL MUSCLE, CONTRACTION, INNERVATION, INHIBITION, HISTAMINE, DRUG EFFECT (2472)•
LOOP INVERSION, TECHNIQUES (3431)
LYMPHANGIECTASIS, TRIGLYCERIDES, DIET CHILDREN (1202)
LYMPHATIC VESSELS, HISTOLOGY, MOUSE (0026)
LYMPHOMA, SURGERY, RADIATION (1932)
LYMPHOSARCOMA, RADIOLOGY (4227)
LYMPHOSARCOMA, SURGERY, CHILDREN (4289)
MAGNESIUM, ABSORPTION, CALCIUM (1631)•
MALABSORPTION, A-B-LIPOPROTEINEMIA, A-ALPHA-GLOBULINEMIA (6686)•
MALABSORPTION, CELIAC DISEASE, GLUTEN SENSITIVITY (1961)•
MALABSORPTION, DIAGNOSTIC PROCEDURES (7228)
MALABSORPTION, DIARRHEA, CHILDREN (1510)
MALABSORPTION, DIET, GEFARNATE, INFANT (7443)
MALABSORPTION, ETHANOL-INDUCED, VITAMIN B-12 (0406)•
MALABSORPTION, FAT, GLUCOSE, HYPERTONIC MANNITOL (8168)•
MALABSORPTION, GASTRECTOMY, D-XYLOSE, FAT (5073)•
MALABSORPTION, IMMUNOGLOGULINS, NON-TROPICAL SPRUE (1962)•
MALABSORPTION, LABORATORY DIAGNOSIS (6552)
MALABSORPTION, LACTASE, GENETIC (8175)
MALABSORPTION, LACTASE EFFECT, LACTOSE ABSORPTION (8932)

MALABSORPTION, PARASITE (5082)
MALABSORPTION, PERORAL BIOPSY, TOTAL VILLOUS ATROPHY (8712)
MALABSORPTION, STEATORRHEA, LIPID (4252)
MALABSORPTION, TETANY, GAMMA GLOBULIN (5077)
MALABSORPTION, VILLOUS ATROPHY, ENTEROCYTE (6683)•
MALABSORPTION SYNDROME (7442)
MALFORMATION, ATRESIA, SURGERY (4230)•
MALIGNANT GRANULOMA (4224)
MALIGNANT MELANOMA, STOMACH (0334)
MALIGNANT TUMORS (1177)
MASSIVE RESECTION, CROHN'S DISEASE, PHOSPHORUS AND CALCIUM METABOLISM, DIET (8925)
MASSIVE RESECTION, DIET, MEDICAL TREATMENT (8920)
MASSIVE RESECTION, DRUG THERAPY, DIET (8905)
MASSIVE RESECTION, INDICATIONS, ADULT, CHILDREN (8916)
MASSIVE RESECTION, PHYSIOPATHOLOGY, FUNCTIONAL ADAPTATION (8915)
MASSIVE RESECTION, PHYSIOPATHOLOGY, INTESTINAL MALABSORPTION (8914)
MASSIVE RESECTION, PHYSIOPATHOLOGY, INTESTINAL TRANSIT (8901)
MASSIVE RESECTION, SEQUELAE, SEGMENTAL INVERSION (8917)
MASSIVE RESECTION, SEQUELAE, SURGICAL TREATMENT (8918)
MATURATION, HISTOCHEMISTRY, ENZYMES (0005)•
MECKEL'S DIVERTICULUM (5873)
MECKEL'S DIVERTICULUM, BLEEDING, PANCREATIC HETEROTOPIA (0377)
MECKEL'S DIVERTICULUM, CARCINOID TUMOR, DUODENAL ULCER, ABDOMINAL COLIC (0371)
MECKEL'S DIVERTICULUM, ECTOPIC TISSUE, GASTRIC PANCREAS, ULCER, MASSIVE HEMORRHAGE, ADULT (0367)
MECKEL'S DIVERTICULUM, FOREIGN BODIES, NEOPLASM (8913)
MECKEL'S DIVERTICULUM, ILEUM, TUMOR, CARCINOID SYNDROME (1934)
MECKEL'S DIVERTICULUM, PATHOLOGY (5871)
MECKEL'S DIVERTICULUM, PERFORATION, BLUNT ABDOMINAL TRAUMA (7417)
MECKEL'S DIVERTICULUM, PERFORATION, PERITONITIS, SURGERY, OBSTRUCTION, NEWBORN INFANT (5050)
MECKEL'S DIVERTICULUM, RADIOLOGY, DIARRHEA, SURGERY (5051)
MECKEL'S DIVERTICULUM, ROENTGENOLOGY ANATOMY, EMBRYOLOGY, COMPLICATIONS (0363)
MECKEL'S DIVERTICULUM, SURGICAL INDICATIONS (1178)
MECKEL'S DIVERTICULUM, ULCER, OBSTRUCTION (3430)
MECKEL'S DIVERTICULUM PATHOLOGY (7427)
MECONIUM, STEROIDS (0723)•
MECONIUM ILEUS, SURGERY (5874)
MECONIUM ILEUS, SURGICAL TREATMENT (2680)
MECONIUM ILEUS, TREATMENT, CONTRAST ENEMAS (1926)•
MELANOMA, METASTASIS, ULCER, INVAGINATION (2662)
MEMBRANE POTENTIALS, TRANSPORT PROCESS, MEMBRANE PERMEABILITY, ONTOGENY (0902)•
MESENTERIAL MICROCIRCULATION, HEMODYNAMICS (7997)
MESENTERY, RETICULOSARCOMA (4236)
METABOLISM, ANOXIA, SUGAR (3237)
METOCLOPRAMIDE, PERISTALSIS, CROSRY BIOPSY PROBE (0981)
MICROFLORA, DIARRHEA, ENTEROBACTER, E. COLI, FECES (3709)•
MICROORGANISM, SURGERY, BIOCHEMISTRY (2191)•
MICROVILLUS, MEMBRANE, MOLECULAR STRUCTURE (2269)•
MIDGUT VOLVULUS, MALROTATION, RADIOLOGY (6949)
MITOCHONDRIA, LOCATION, INTRASTRUCTURE (7775)•
MORPHOLOGICAL CHANGE, MUCOSA, UNCONJUGATED BILE SALTS (7025)•
MORPHOLOGY, CHOLERA, MICROSCOPY, DOG (3416)•
MOTILITY, BARIUM SULFATE (4898)
MOTILITY, CONTRACTIONS, BRADYKININ (0913)•
MOTILITY, DIARRHEA (3696)•
MOTILITY, HYPOPHYSECTOMY, PITUITARY GRAFT (7087)
MOTILITY, MANOMETRY, COLON (2538)
MOTILITY, MESENTERIC ARTERY OCCLUSION, DRUG EFFECT (4788)•
MOTILITY, MYOELECTRIC ACTIVITY, SECRETIN, ACTION POTENTIALS (5519)•
MOTILITY, SALIVATION, SUBSTANCE P, BLOOD PRESSURE (0779)
MOTILITY, SEROTONIN, COHERIN, BIEBLE LOOPS, DOGS (5510)•
MOTILITY, SEX STEROIDS (7083)
MOTOR ACTIVITY, WHOLE BODY RADIATION, DUODENUM, JEJUNUM, ILEUM (4791)•
MUCOSA, ABSORPTION, VITAMIN B12 TRANSPORT (2339)•
MUCOSA, ACID HYDROLASE, ELECTRON MICROSCOPY (3796)•
MUCOSA, BRUSH BORDERS, ATPASE, CALCIUM (3226)•
MUCOSA, CANCER, HISTOCHEMISTRY, ENZYMES (0014)•
MUCOSA, CARBOHYDRATE TOLERANCE TEST, LACTASE (7283)
MUCOSA, CELIAC DISEASE, PEPTIDASE ACTIVITY (3441)•
MUCOSA, CONTRACTION, JEJUNUM (3129)
MUCOSA, DERMATITIS (5057)
MUCOSA, DISACCHARIDASE LEVEL (3636)
MUCOSA, DUODENUM, JEJUNUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
MUCOSA, ENZYME, ABORIGINE (5858)
MUCOSA, ENZYME, CHILDREN (3852)
MUCOSA, ENZYMES, TRIGLYCERIDE SYNTHETASE (8503)•
MUCOSA, EPITHELIAL CELLS, ISOLATION (3091), (7982)•

MUCOSA, EVERTED SACS, HISTOLOGY, ABSORPTION STUDY (3798)*
MUCOSA, EXUDATE, MOTILITY, MESENTERIC ARTERY, VILLOUS BODIES (3891)*
MUCOSA, GEOPHAGIA, ANEMIA (4216)*
MUCOSA, GLUCOSAMINE, GLYCOPROTEIN (8686)*
MUCOSA, IRON CONTENT, IRON ABSORPTION, NON-HEME IRON, HEMOGLOBIN (5484)*
MUCOSA, MEASUREMENT (3029)*
MUCOSA, MICROSCOPY, RECTAL MUCOSA (5679)
MUCOSA, MORPHOLOGY, ABSORPTION, WATER, ELECTROLYTE, ULTRASTRUCTURE, ATPASE (4713)*
MUCOSA, OLEIC ACID, ENDOGENOUS CHAINS, GLYCEROPHOSPHATE PATHWAY, TRIGLYCERIDES, PHOSPHATIDAL CHOLINE, PHOSPHOLIPIDS, RAT (5625)
MUCOSA, PROLIFERATION, STARVATION (0910)*
MUCOSA, RADIATION (3736)
MUCOSA, SEROSA, TRANSMURAL POTENTIAL, ATP (4760)*
MUCOSA, SPRUE, DIAGNOSIS (4254)
MUCOSA, SUBMUCOSA, INFECTION, PATHOLOGY, ELECTRON MICROSCOPY (2658)*
MUCOSA, TUMOR (1939)
MUCOSA, ULTRASTRUCTURE, CHRONIC ENTEROCOLITIS (7496)
MUCOSA, ULTRASTRUCTURE, ELECTRON MICROSCOPY (7034)*
MUCOSA, ULTRASTRUCTURE, HISTOLOGY, HISTOCHEMISTRY (1563)*
MUCOSA, ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION, ULCERATIVE COLITIS, ROENTGENOLOGY (4939)
MUCOSAL CELL, BRUSH BORDER, ENZYME, VITAMIN D (7021)*
MUSCLE, SMOOTH, BIOPOTENTIAL, ELECTROPHYSIOLOGY (0039)*
MUSCULARIS CEROID DEPOSITION, REGIONAL ENTERITIS, DIFFUSE MALASORPTION, VITAMIN E (0400)
NA+, K+, MG++ -ACTIVATED ATPASE (3052)
NAUSEA, VOMITING, NEUROSIS TRANQUILIZER (1815)
NEONATAL, MUSCULATURE DEVELOPMENT (1179)
NEPHRECTOMY, VITAMIN D-DEFICIENCY, CALCIUM (7059)*
NEURINOMATA, LEIOMYOMATA, NEOPLASM, TUMOR (0384)
NEUTRAL, ACID, B-GALACTOSIDASE, DEVELOPMENT, CORTISONE (4864)*
NON-OCCLUSIVE GANGRENE, SUPERIOR MESENTERIC ARTERY OCCLUSION (6938)*
NUCLEOTIDES, ASSAY METHOD (0911)*
OBSTRUCTION (0332)
OBSTRUCTION, ACUTE, HISTOPLASMOSIS (1952)
OBSTRUCTION, APPENDICITIS, PERITONITIS (3499)
OBSTRUCTION, BACTERIA, MICE (3245)*
OBSTRUCTION, CONGENITAL, NEWBORN INFANTS, SURGERY, ENTEROANASTOMOSIS (0382)
OBSTRUCTION, DIAGNOSIS, BARIUM, ORAL (0369)
OBSTRUCTION, ELDERLY, VOLVULUS, GALLSTONE, ILEUS, MEGACOLON (0705)
OBSTRUCTION, ENDOMETRIOSIS, ILEUS, MENOPAUSE (5059)
OBSTRUCTION, ILEUS, GALLSTONE (2667)
OBSTRUCTION, MESENTERIC THROMBOSIS, MORTALITY INDEX (1513)
OBSTRUCTION, PARASITE, ILEUS (3016)
OBSTRUCTION, SEROTONIN, MUCOSA (2659)*
OBSTRUCTION, SURGERY (5876), (6234)
OCCLUSION, DIAGNOSIS, OPAQUE INDICATOR, RADIOGRAPHY (0232)
OCCLUSION, LIPASE CONCENTRATION, AMYLASE CONCENTRATION, BILE DUCT (2943)*
OCCLUSION, MULTIPLE ATRESIA, NEWBORN (4238)
PACESETTER, POTENTIAL, TRANSECTION EFFECT (3238)
PANCREAS, PSEUDOCYST, RUPTURE (1315)
PANCREATECTOMY, DUODENECTOMY, AVASCULAR CLEAVAGE, LIGATION (0323)
PANCREATICODUODENECTOMY, TRAUMA (1316)
PANCREATODUODENECTOMY, CARCINOMA, PERIAMPULARY (0299)
PANCREATODUODENECTOMY, COMPLETE PANCREATIC FISTULAE, METABOLIC DISORDERS (0508)
PANETH CELL, METAL ISOTOPE, METAL ELIMINATION, EXPERIMENTAL ANIMALS (5481)*
PANETH CELL, MITOSIS, CELLULAR REGENERATION (1567)*
PARALYTIC ILEUS, MYXEDEMA, DISTENTION, CONSTIPATION (8941)*
PARTIAL ILEAL BY-PASS, HYPERCHOLESTEROLEMIA (1176)
PATHOLOGY, JEJUNUM, ILEUM, ENTEROTOXIN, E. COLI (2945)*
PENICILLAMINE, ISOMERS TRANSPORT (7056)*
PEPTIADASES, CELIAC DISEASE, CHILDREN (1216)*
PEPTIC ULCER, DRUG THERAPY (1922)
PEPTIC ULCER, PERFORATED, CLINICAL PATTERN, SUTURE (0342)
PEPTIDE ABSORPTION, COMPETITIVE INHIBITION, MUCOSAL CELLS (1626)*
PER ORAL BIOPSY, CHILDREN (7253)
PERFORATED DUODENAL ULCER, VAGOTOMY, DRAINAGE (2653)
PERFORATION, ABDOMEN, BUERGER'S DISEASE (2631)
PERFORATION, ACUTE COLONIC, VOLVULUS (5121)
PERISTALSIS, NACl EFFECT, GUINEA-PIG ILEUM (0038)*
PERISTALSIS, PITUITRIN (7085)
PERMEABILITY ALTERATIONS, ILEUS, BLOOD VOLUME DETERMINATION (9206)
PERMEABILITY CHANGES, BILE SALT, RAT (1694)*
PERORAL BIOPSY, DIAGNOSIS, LESION, ATROPHY (2532)
PERORAL BIOPSY, ENTERITIS, SPRUE (6530)

PEUTZ-JEGHER SYNDROME (8153)
PEUTZ-JEGHER SYNDROME, ADENOMATOUS TUMOR, POLYPS (1229)
PEUTZ-JEGHER SYNDROME, GASTRIC MUCOSA, DUODENUM, JEJUNUM, ILEUM (5875)
PGE 1 - INDUCED CONTRACTIONS, MORPHINE ANTAGONISM, JEJUNUM, ILEUM, GUINEA PIGS (0041)•
PHARMACORADIOGRAPHY (4052)
PLICATION, NON-SUTURE METHOD (0355)•
PNEUMATOSIS, CYSTIC, JEJUNUM, ILEUM, CECUM, APPENDIX, COLON (6201)
PNEUMATOSIS CYSTDIDES INTESTINALIS, SYMPTOMATOLOGY, RADIOLOGY, ETIOLOGY (8909)
POLYPOSIS, HISTOTROPOCHEMISTRY, CANCER, LEUKOPLAKIA (0395)
POSTOPERATIVE, ANTIBIOTIC THERAPY, COLIFORM DIARRHEA, ABDOMINAL DISTENSION (0376)
POSTOPERATIVE INTUSSUSCEPTION, CHILDREN (9233)
POST-RESECTION SYNDROMES, DUMPING SYNDROME, EFFERENT LOOP SYNDROME, RADIOLOGY (0304)
POTASSIUM ION INDUCED LESIONS, THIAZIDE (8484)
PREOPERATIVE CARE, JEJUNOSTOMIES (0690)
PRESTOMAL ILEITIS, CORTICOSTEROID (5882)
PRIMARY MALIGNANT TUMOR, LARGE INTESTINE (6682)
PRIMARY MULTIPLE CARCINOMA (5872)
PRIMARY ULCER (2114)
PROTEIN, MALNUTRITION, MALABSORPTION (5377)
PROTEIN DEFICIENT DIET, ENZYME ACTIVITY, KWASHIORKOR SYNDROME (1151)•
RADIATION (6967)
RADIOLOGY, DIAGNOSIS, CANCER (7289)
RADIOLOGY, DOUBLE CONTRAST, POLYPS, TUMORS (8739)
RADIOLOGY, OBSTRUCTION, SURGERY (1812)
RECEPTORS, CHOLINERGIC, SMOOTH MUSCLE IONIC FLUX (1788)
RECEPTORS, INHIBITION (0908)•
RECURRENT INVAGINATIONS, DYSPEPSIA, INFANTS, CHILDREN (8911)
REFLEX, JEJUNUM, DUODENUM (1655)
REFLUX, COLON AGANGLIONOSIS, NEONATES (1970)•
REGIONAL ENTERITIS, GROWTH RETARDATION (3435)•
RELAXATION, SYMPATHETICS (3899)
RESECTION, ACQUIRED MALABSORPTION, INTESTINAL OBSTRUCTION (1159)
RESECTION, ASSESSMENT DIET, HIGH PROTEIN DIET (1925)•
RESECTION, CHILDREN (4228)
RESECTION, COLON MORPHOLOGY (7808)
RESECTION, FUNCTIONAL COMPENSATION, RAT (1789)
RESECTION, ILEOTRANSVERSOSTOMY, MALABSORPTION (0423)
RESECTION, LIVER FUNCTION (7543)
RESECTION, MESENTERIC VEIN INFARCT (8456)
RESECTION, MICROELEMENT, BLOOD (2661)
RESECTION, PARENTERAL FEEDING, FATAL ACCIDENTS, RADIOLOGICAL CONTROL (8434)
RESECTION, VOLVULUS, TUMOR, INTESTINAL OBSTRUCTION (1188)
RETRACTILE MESENTERITIS, RADIOLOGY, DIAGNOSIS (1515)
REVERSAL, RESECTION, ILEUM (6182)
RHEUMATIC COMPLICATIONS, DISEASE (4641)
RUPTURE, HERNIA, MAN (1196)
RUPTURED ILEUM, PERITONITIS, INGUINAL HERNIA, BLUNT TRAUMA (1957)
SARCOMA, CARCINOMA (8149)
SARCOMA, MALABSORPTION SYNDROME (4233)
SCANNING ELECTRON MICROSCOPY, VILLI, GOBLET CELLS, EPITHELIAL CELLS, MICROVILLI (1568)•
SCHISTOSOMIASIS, OBSTRUCTION, MICE (1536)
SCHWANNOMA, ARTERIOGRAPHY, HISTOLOGY (8907)
SCLERODERMA, MALABSORPTION, INFILTRATIVE DISEASES (7488)
SCLERODERMA, PNEUMATOSIS CYSTOIDES, INTESTINALIS (1949)
SECRETION, CHOLESTEROL (7199)
SECRETION, ENZYME ACTIVITY, MUCOSA (2470)•
SECRETION, IMMUNOGLOBULIN, ANTIBODIES (8687)•
SECRETION, LIPASE, TRIBUTYRINE (4815)
SECRETION, TESTOSTERONE, AMYLASE, BICARBONATE (3236)
SEGMENTAL INVERSION, MALABSORPTION, PHYSIOPATHOLOGY (8894)
SEGMENTAL INVERSION, PERISTALSIS, RAT (8579)
SHIGELLA, MUCOSA (3994)•
SMALL INTESTINE SURGERY, SMALL INTESTINE FISTULAS (1029)
SOLITARY ULCER, ETIOPATHOGENESIS, DIAGNOSIS (0396)
SORBITOL, RADIOLOGY, DIAGNOSIS (4913)
SPRUE, GRANULOMA, JEJUNAL BIOPSY (5052)
SPRUE, IDIOPATHIC (0421)
STENOSIS, AUTORADIOGRAPHY, RADIOLOGY, HISTOLOGY (6196)
STENOSIS, CONGENITAL (1954)
STENOSIS, RECURRENT, MAN (0381)
STENOSIS, ULCER, PAPILLA, CHILD, DIFFERENTIAL DIAGNOSIS (5915)
STOMACH, SECRETION, ACID (4866)
STRANGULATION, BACTERIA, SURGERY (3733)
STRONGYLOIDOSIS, DIAGNOSIS (4077)
STRUCTURE, UPTAKE, POLYVINYL PYRROLIDONE (7067)•
SUBTOTAL RESECTION, DIARRHEA, NACL (4637)
SURGERY, ILEUM, BYPASS, CHOLESTEROL EXCRETION (2344)•
SURGERY, MASSIVE RESECTION, ABSORPTIVE CAPACITY (8919)
SURGERY, SARCOMA (7429)
SURGERY, STOMACH SECRETION (1026)•
SURGICAL APPROACH, BILE DUCT (1498)

- YMPATHOMIMETICS, METABOLISM (1651)
- YNTHESIS, NUCLEIC ACID, PROTEIN, HYPOPHYSECTOMY (7196)*
- RMINAL ILEUM, LYMPHOID HYPERPLASIA, HISTOLOGY (8145)
- ESTOSTERONE, FAT ABSORPTION, RAT (0772)*
- OMODA JEJUNOPLASTY, GASTRECTOMY (4171)
- OTAL GASTRECTOMY, ESOPHAGO-JEJUNAL-DUODENAL INTERPOSITION (1027)
- OXIC EFFECT, ANTI-TUMOR AGENTS, CHOLCHICINE, GAMMA-RAY IRRADIATION, HISTOLOGY, ENZYME ACTIVITIES (3820)*
- RANSDUODENAL SPHINCTEROTOMY, PAPILLOTOMY, BILIARY AND PANCREATIC DUCT SURGERY (1956)
- RANSPLANT, EXTRAMURAL SYNAPSES (8147)
- RANSPLANTATION, AUTOGRAFTS, HOMOGRAFTS, RESULTS, EXPERIMENTAL STUDY, DOG (0165)
- RANSPLANTATION, HOMOTRANSPLANT, AUTO TRANSPLANT, HEMODYNAMICS, DOG (0174)
- RANSPORT, AMINO ACIDS, SUGARS, VITAMIN E (6348)*
- RANSPORT, CALCIUM, VITAMIN D (8560)*
- RANSPORT, GLUCOSE METABOLISM (5491)*
- RAUMA, DETACHMENT (1157)
- RYPSIN, CHYMOTRYPSIN, SECRETION, GLANDULAR CELLS, ANNELID (5634)
- UMOR (3422)
- UMOR, PERFORATION, OBSTRUCTION (5869)
- LCER, DUODENAL, BLEEDING, UPPER GASTROINTESTINAL TRACT, GASTRIC MUCOSA (0281)
- LCER, DUODENAL, GASTRIC, CIRRHOSIS CHRONIC HEPATITIS (0351)
- LCER, GASTRODUODENAL, ACUTE COMPLICATIONS, HEMORRHAGE, PERFORATION, TREATMENT (0348)
- LCER, GASTRODUODENAL, ETIOPATHOGENESIS, DIAGNOSIS, THERAPY (0347)
- LCER, GASTRODUODENAL, PULMONARY TUBERCULOSIS, STATISTICAL CORRELATION (0344)
- LCER, NON-SPECIFIC, PERFORATIVE, SURGERY (0383)
- LCER, POTASSIUM CHLORIDE INGESTION, ENTERIC COATING (1930)
- LCEROGENESIS, FLUFENAMIC ACID, ENTEROHEPATIC CYCLE (6671)*
- LTRASTRUCTURE, EPITHELIUM, GOBLET CELLS (1566)*
- LTRASTRUCTURE, HORMONAL EFFECTS, GASTRIN (1671)*
- RETERO-ILEAL ANASTOMOSIS, OBSTRUCTION (2624)
- ASCULAR INSUFFICIENCY (7741)
- ILLI, MORPHOLOGY, HISTOLOGY (1570)*
- ILLUS SIZE, DUODENUM, JEJUNUM, ILEUM COLON, ILEAL CHYME, VILLUS-ENLARGING FACTOR (1569)*
- OLVULUS, DIVERTICULUM, LEIOMYOFIBROMA (8912)
- ATER TRANSPORT, VILLI, JEJUNUM, DOG (0027)*
- HIPPLE'S DISEASE, MACROPHAGE, MUCOSA (5087)
- ZOLLINGER-ELLISON SYNDROME, DIARRHEA, ISLET CELL TUMOR (5381)

INTOXICATION
- ALKYLPHOSPHATES, ANTIDOTE THERAPY, LIVER FUNCTION, RAT, RABBIT (9108)
- LIVER, BRAIN GABA (3610)

INTRINSIC FACTOR
- ABSORPTION, INTESTINE, VITAMIN B12 (2336)*
- GASTRIC JUICE, NEUTRALIZATION (0065)
- HOG, ABSORPTION, IMMUNOLOGY (6356)*
- IMMUNOLOGY, ANTIBODY RESPONSE, MAN, PIG (0057)*
- PERNICIOUS ANEMIA, IMMUNOGLOBULIN, GASTRIC ACID (4130)*
- PREVALENCE (2372)*
- SECRETION, GASTRIC ACID, HYPOTHYROIDISM, HYPERTHYROIDISM (1668)*
- SECRETION, STOMACH, NEUTRALIZATION (0066)*
- STOMACH, AUTOANTIBODIES, PERNICIOUS ANEMIA (3338)*
- STOMACH, EPITHELIAL CELL, STORAGE SITE (2376)
- STOMACH, MUCOSA (3150)

INTUBATION
- GASTRIC ESOPHAGEAL STENOSIS, HIATAL HERNIA, SURGERY (1011)
- GASTRIC FUNCTION, INDICATION (4076)
- NOCTURNAL, GASTRIC ACID TEST, DUODENAL ULCER (4212)
- PALLIATIVE, MALIGNANT STRICTURE, ESOPHAGUS (2572)
- STOMACH, ESOPHAGUS, BOWEL OBSTRUCTION (1804)*

INTUSSUSCEPTION
- DIAGNOSIS, MESENTERIC ADENITIS, CHILDREN (4597)
- JEJUNAL, INTRACTABLE OBESITY (4219)
- JEJUNO-GASTRIC, TETANUS, GANGRENE (1198)
- SMALL INTESTINE, MAN (0378)
- SMALL INTESTINE, POSTOPERATIVE, CHILDREN (9233)
- TREATMENT, INFANTS, CHILDREN (1937)

INVAGINATION
- INTRAGASTRIC, GASTRIC SURGERY (2624)
- JEJUNOGASTRIC, RETROGRADE, ENTEROANASTOMOSIS (4140)
- MULTIPLE, SMALL INTESTINE, FOREIGN BODY (0379)
- SMALL INTESTINE, BENIGN TUMOR, SCHWANNOMA, HISTOCYTOFIBROMA (2681)
- ULCER, SMALL INTESTINE, MELANOMA, METASTASIS (2662)

ION
- DUODENUM, PANCREATITIS, CALCIUM, MAGNESIUM (4347)*
- FLUX, SMALL INTESTINE, CHOLINERGIC RECEPTORS, SMALL INTESTINE (1788)
- SMALL INTESTINE, JEJUNUM, MUCOSA, POTENTIAL DIFFERENCE (3862)*
- STOMACH, ANTRUM, FUNDUS, SODIUM, HYDROGEN, FLOW, SECRETION (3908)*
- TRANSPORT, STOMACH, HYDROGEN ION, ANAEROBIC MECHANISMS (1643)
- TRANSPORT, STOMACH, MUCOSA, SECRETION (1674)*

IRON
- ABSORPTION, ADDISONIAN PERNICIOUS ANEMIA (0759)•
- ABSORPTION, EDTA, CHELATION (3882)
- ABSORPTION, GASTROINTESTINAL TRACT, SEX FACTORS, IRON BINDING CAPACITY (1635)
- ABSORPTION, HEMOGLOBIN, INTESTINE, RAT (5490)•
- ABSORPTION, HEMOGLOBIN, KWASHIORKOR (6945)•
- ABSORPTION, INTESTINE, METABOLIC CHANGE (3246)
- ABSORPTION, PROXIMAL GASTRIC RESECTION, GASTRIC AND PANCREATIC FUNCTION (1020)•
- ABSORPTION, SMALL INTESTINE, DEFICIENCY, TRACER STUDY (3866)•
- ABSORPTION, SUCCINIC ACID (6357)•
- DEFICIENCY, ANEMIA, GASTRIC MUCOSA (7329)•
- DIET, REQUIREMENT, LOSS (3742)
- DUODENAL MUCOSA, INCREASED GASTROINTESTINAL ABSORPTION, THALASSEMIA, CHILDREN (8752)
- ELECTROPHORESIS, LIVER (3222)
- EXCRETION INTO GASTRIC JUICE (3110)
- EXCRETION, MUCOSAL EQUILIBRIUM, STOMACH (1640)
- FERRITIN SYNTHESIS, EXCRETION, SMALL INTESTINE (8688)•
- FOLIC ACID, THERAPY, ANEMIA, PREGNANCY (2813)
- HEMOGLOBIN, ABSORPTION, XANTHINE OXIDASE, HEME-SPLITTING REACTION, INTESTINE, DOG (3112)
- LIVER, FERRITIN STORAGE, CELL MEMBRANE, METABOLISM, METHIONINE, GLUCAGON, PARENCHYMA, CYTOCAVITY NETWORK (3797)•
- MOBILIZATION, ALLOPURINOL, LIVER (7130)•
- LOSS, ULCERATIVE COLITIS (1293)•
- METABOLISM, HEPATIC DISORDER (3587)
- METABOLISM, LIVER, PORPHYRIA, CUTANEA TARDA (2071)
- METABOLISM, WHOLE BODY COUNTER (3247)
- ORAL THERAPY, DOSAGE (3869)
- SERUM, BILIRUBIN, JAUNDICE (2131)•
- SERUM, METABOLISM, ALCOHOLISM, FOLIC ACID (3547)•
- SERUM, TOTAL, BINDING, TEEPOL (4000)

IRON-BINDING CAPACITY
- GASTRIC JUICE, FERRIC HYDORXIDE (0804)
- SERUM, HEPATITIS, CIRRHOSIS, ALCOHOLISM, HEMOCHROMATOSIS, ANEMIA (4651)

IRRADIATION
- BACTERIA, COLON, ANTIBIOTICS (6930)•
- GAMMA, DNA SYNTHESIS, MITOSIS (7813)
- GASTROINTESTINAL MICROFLORA, TISSUE DAMAGE (6932)•
- LIVER, ACUTE, CHRONIC (2836)
- LIVER, FAST NEUTRONS, GLYCOGEN CONTENT MICE (7959)
- LIVER, PERFUSED, GLUCOSE METABOLISM (6480)
- PERFUSED INTESTINE, ALBUMIN DEGRADATION (7988)
- ROTATORY, ESOPHAGEAL CARCINOMA, DEEP THERAPY (6580)•
- X-, INTESTINE, ALKALINE PHOSPHATASE, RAT (4721)

IRRITABLE-BOWEL SYNDROME
- PROGNOSIS, SYMPTOMS, STRESS EFFECT (0427)•

ISATIN
- ENZYME INHIBITION, LIVER, RAT (1732)

ISCHEMIA
- COLON, ABDOMINAL AORTIC RESECTION, TREATMENT (3465)
- COLON, ATHEROSCLEROSIS (1278)
- EXPERIMENTAL, PANCREAS, EXOCRINE FUNCTION, ACINAR CELLS (1307)
- INTESTINE, MESENTERIC ARTERY, EMBOLISM (3746)
- LIVER, PORTACAVAL SHUNT, COAGULATION (6763)•
- LIVER, PROPHYLACTIC, METHYLPREDNISOLONE, PHENOXYBENZAMINE (2271)•
- MYOCARDIAL, CHOLELITHIASIS, SURGERY, DISTENSION (6924)
- MYOCARDIAL, SHOCK, PRESSURE, INFARCTION (6978)
- REVERSIBLE, COLON, ANGIOGRAPHY (8986)
- SMALL INTESTINE, BACTERIA, SURGERY (3733)
- SUPERIOR MESENTERIC OCCLUSION, GASTRIC SECRETION, CELIAC ARTERY (6611)•

ISLET CELL
- ADENOMA, HYPERINSULINISM, DIAGNOSIS, SURGERY (2019)
- PANCREAS, TUMOR, HORMONE (2772)
- PANCREAS, ULTRASTRUCTURE, ALLOXAN TOXICITY (1604)

ISLET OF LANGERHANS
- PANCREAS, INSULIN, HISTOLOGY (1685)•

ISOENZYME
- FRUCTOSE PHOSPHATE ALDOLASE IN SERUM, LIVER TUMOR (3081)
- LACTIC DEHYDROGENASE, CHRONIC HEPATITIS, CIRRHOSIS, CHOLELITHIASIS (8296)
- LACTIC DEHYDROGENASE ACTIVITY, ISOLATED LIVER PERFUSION (3082)
- LIVER CELL, LACTIC DEHYDROGENASE, CONNECTIVE TISSUE (0728)•

ISONIAZID
- HEPATITIS (2861)
- LIVER, BILIARY TRACT (1733)
- SERUM TRANSAMINASE, LIVER DAMAGE, TUBERCULOSIS (1358)
- TOXIC HEPATITIS, ENCEPHALOPATHY (0600)
- TUBERCULOSIS, DEATH (2098)

JAUNDICE
- ACUTE, HEPATOCELLULAR, HALOTHANE, ANESTHESIA, RADIUM THERAPY (6833)•
- ACUTE CHOLECYSTITIS, SGOT, COMMON STONES (7651)•
- ACUTE VIRAL HEPATITIS, CHOLESTASIS, DIAGNOSIS (6097)
- ALCOHOLIC CIRRHOSIS, HEMOLYTIC ANEMIA, BURR CELLS (5294)
- ALCOHOLISM, BIOPSY, CIRRHOSIS (2824)
- AMEBIC ABSCESS, HEPATOCELLULAR, CHOLESTATIC (4686)

HINAZINE, ACUTE NON-VIRAL HEPATITIS (7586)
NEMIA, CHOLAGITIS, LIVER (4919)
NESTHESIA, OPEN-HEART SURGERY (4390)
ILE ACIDS, LIVER HOMOGENATES, CONJUGATION, HEPATIC DISEASE, HEMOLYTIC TOXINS (5256)
ILE DUCT, CONGENITAL ANOMALY (6033)
ILE DUCT, CYST, ATRESIA, ANASTOMOSIS (5327)
ILE DUCT HYPOPLASIA, SIBLINGS (7554)
ILIARY TRACT SURGERY, ACUTE RENAL FAILURE (7674)
ILIRUBIN, HYPERBILIRUBINEMIA, NUCLEAR ICTERUS (2846)
ILIRUBIN, METABOLISM, LIVER ENZYMES, INBORN ERRORS OF METABOLISM (9049)
UTAZOLIDIN AGENT REACTION (4456)
HILDREN, CAUSES (2928)
HLOROQUIN, HEPATITIS, CHOLESTASIS, RHEUMATISM (6841)
HOLESTASIS, LIVER, MITOCHONDRIA (5195)
HOLESTATIC, IDOXURIDINE, LIVER FUNCTION TESTS (0550)
HOLESTATIC, PREGNANCY (4422)
HRONIC, BILE DUCT, CONGENITAL MALFORMATION, PORTAL HYPERTENSION, HYPERPLASIA (6131)
HRONIC, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (5219)
HRONIC, SCLEROSING CHOLANGITIS, CHOLANGIOGRAPHY, INTRAHEPATIC BILE DUCTS (8605)
HRONIC, VIRAL HEPATITIS, BONE MARROW INSUFFICIENCY, PANCYTOPENIA (9131)
HRONIC FAMILIAL, DIAGNOSIS, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (6810)
HRONIC PANCREATITIS, CHOLANGIOGRAPHY, SPLEEN INVOLVEMENT (9030)
HRONIC PANCREATITIS, PANCREATICOJEJUNOSTOMY, CHILDREN (9027)
OMMON, BILE DUCT OCCLUSION, GASTRIC TUMOR (5796)
ONGENITAL, NONOBSTRUCTIVE, NONHEMOLYTIC, PHOTOTHERAPY, INFANT (2037)•, (2038)•
ROSS CIRCULATION, HEPATIC ASSISTANCE (0622)
IAGNOSTIC PROCEDURE, BILE SALT, BILIRUBIN (8312)
IFFERENTIAL DIAGNOSIS, ETIOLOGY (8031)
IFFERENTIAL DIAGNOSIS, PHOSPHATASEMIA BILIRUBINEMIA, RATIO (8773)
UBIN-JOHNSON SYNDROME, HYPERBILIRUBINEMIA (3646)
XPLORATION, SURGERY (1412)
XTRAHEPATIC BILIARY OBSTRUCTION, LIVER HISTOLOGY (7652)•
XTRAHEPATIC BILIARY OBSTRUCTION, THORACIC DUCT LYMPH COMPOSITION, ENZYMES, ELECTROLYTES, PROTEINS (2164)•
XTRAHEPATIC-INTRAHEPATIC, BILE DUCT OBSTRUCTION (7231)
GALLBLADDER, CARCINOMA, GALLSTONE (5306)
GALLBLADDER, CHOLECYSTECTOMY, JAUNDICE THROMBOSIS (5328)
GERIATRICS, CIRRHOSIS (5210)
HEMOLYSIS (2120)
HEMOLYTIC, NEONATE, FREE BILIRUBIN, GLUCURONYL TRANSFERASE, ALBUMIN-BILIRUBIN BINDING (6003)
HEPATIC, HEMOLYTIC, OBSTRUCTIVE, AFRICA (2167)
HEPATITIS, COMA, CIRRHOSIS (5263)
HEPATITIS, DIABETES (5269)
HEPATITIS, ISONIAZID (2861)
HEPATITIS, SURGERY, OPEN-HEART (2885)
HERPES SIMPLEX HEPATITIS, EROSIVE GASTRITIS, GASTROINTESTINAL BLEEDING, ADULT (0612)
HYDATIDOSIS, HEPATIC (1536)
IATROGENOUS INJURY, STENOSIS, PERFORATION (6221)
IDIOPATHIC, LATE PREGNANCY, ELECTRON MICROSCOPY (6771)•
ILCA TEST, DIAGNOSIS (4053)
INTRAHEPATIC CHOLESTASIS, ORAL CONTRACEPTIVES, LIVER SARCOIDOSIS (9075)
INTRAHEPATIC, EXTRAHEPATIC, ETIOLOGY, CLINICAL DEVELOPMENT (8014)
IODINE, SULFOBROMOPHTHALEIN, SCINTOGRAPHY, RAT, DOG, MAN (0224)
ISONIAZID, TUBERCULOSIS, FATAL (02098)
LIVER, CHOLANGITIS (2048)
LIVER, CHOLANGITIS, BILE (5307)
LIVER, SHOCK, TRAUMA (5238)
LIVER FUNCTION, ONE STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN, HEPATITIS, INFANTS (5661)•
LIVER TRANSPLANT, REJECTION, MAN (9073)
LUMINAL THERAPY, RHESUS INCOMPATIBILITY, XENOENZYME, NEWBORN INFANT (5201)
LUPOID HEPATITIS, CIRRHOSIS, HYPERGLOBULINEMIA (5261)
LUPOID HEPATITIS, LIVER, JAUNDICE (6109)
MECHANICAL, CHOLEDOCHOLITHIASIS, PERFORATION, TREATMENT (0682)
NEONATAL, ANION-BINDING PROTEIN DEFICIENCY, LIVER (0098)•
NEONATAL, APPENDICITIS (0442)
NEONATAL, BILIRUBIN, ALCOHOL INFUSION, LABOR, PROPHYLAXIS (0552)
NEONATAL, BREAST MILK, STEROIDS (5997)
NEONATAL, PHENOBARBITAL (0539)•
NEONATAL, PHENOBARBITAL, DICOPHANE (0551)
NEONATAL, PHENOBARBITAL, HYPERBILIRUBINEMIA (6220)
NEONATAL, PHENOBARBITAL, PRE-ECLAMPTIC TOXEMIA SYNERGISM (0540)
NEONATAL OBSTRUCTIVE, HEPATITIS, PERINATAL IDIOPATHIC HEMOCHROMATOSIS (6077)
NEONATE, BILIRUBIN, BILIVERDIN, PHOTOTHERAPY (6801)
NON-HEMOLYTIC, GILBERT'S SYNDROME, PIGMENT OVERLOAD, BSF RETENTION (2053)
OBSTRUCTIVE, ACUTE HEPATITIS,

- CHOLECYSTECTOMY, HEPATIC ARTERY ANEURYSM (8414)
- OBSTRUCTIVE, ACUTE VIRAL HEPATITIS, FISHER'S DISCRIMINANT ANALYSIS (7248)
- OBSTRUCTIVE, ALKALINE PHOSPHATASE, DIAGNOSIS (5725)
- OBSTRUCTIVE, ALKALINE PHOSPHATASE, ENZYMES (1700)*
- OBSTRUCTIVE, ALKALINE PHOSPHATASE, LEUCOCYTE, ACUTE VIRAL HEPATITIS, TUMOR (5723)
- OBSTRUCTIVE, BETA-LIPOPROTEINS, IMMUNOLOGIC FRACTION (3679)
- OBSTRUCTIVE, BILE DUCT, ATRESIA, CIRRHOSIS, CHOLESTRYRAMINE (5218)
- OBSTRUCTIVE, BILE-DUCTS, LITHIASIS, ULCER, DYSPEPSIA (6547)
- OBSTRUCTIVE, BLOOD SERUM, LIVER (3674)
- OBSTRUCTIVE, CHOLANGITIS (1469)
- OBSTRUCTIVE, CHOLESTASIS, PRURITIS (6016)
- OBSTRUCTIVE, FATTY ACID COMPOSITION, NEONATE (9170)*
- OBSTRUCTIVE, HEPATIC BILE DUCT, OCCLUSION, OLD AGE (2172)
- OBSTRUCTIVE, HEPATORENAL INSUFFICIENCY CHOLEDOCHOLITHIASIS (7658)
- OBSTRUCTIVE, HYDATIDOSIS, CHOLANGIOGRAPHY (9269)
- OBSTRUCTIVE, LAPAROSCOPY, DIAGNOSIS (2521)
- OBSTRUCTIVE, LECITHIN-CHOLESTEROL, ACYLTRANSFERASE (5301)*
- OBSTRUCTIVE, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)*
- OBSTRUCTIVE, LIPOPROTEINS, ABNORMAL SERUM, HEPARIN (1504)*
- OBSTRUCTIVE, LIVER ALVEOCOCCOSIS (3672)
- OBSTRUCTIVE, LIVER FUNCTION, VIRAL HEPATITIS (7252)
- OBSTRUCTIVE, ODDI SPHINCTER, DUODENAL, DYSKINESIA, RADIOKINETICS, COLOSTASIS (5322)
- OBSTRUCTIVE, PANCREAS, BILIRUBIN, CHOLANGIOGRAPHY, METASTASES, LAPAROTOMY (4941)
- OBSTRUCTIVE, PANCREATIC PUNCTURE BIOPSY (3676)
- OBSTRUCTIVE, PERCUTANEOUS CHOLANGIOGRAPHY, PANCREATIC CARCINOMA, BILE DUCT CARCINOMA (8736)
- OBSTRUCTIVE, SCLEROSING CHOLANGITIS (4556)
- OBSTRUCTIVE, SURGERY, ADRENAL, CHOLECYSTITIS (2910)
- OBSTRUCTIVE, SURGERY, LIVER FUNCTION (7674)
- OBSTRUCTIVE, SURGERY, MORTALITY (6145)
- OBSTRUCTIVE ICTERUS, EXTRA-HEPATIC (2937)
- OCCLUSIVE, HEPATIC PEDICLE, TUBERCULOSIS, COMPRESSION (4410)
- OPEN HEART SURGERY, CARDIOPULMONARY BYPASS (2072)
- PARAGONAMIASIS, CIRRHOSIS, BILIARY TRACT (3659)
- PERCUTANEOUS, CHOLANGIOGRAPHY, LIVER DECOMPRESSION (0957)
- PREGNANCY, ECLAMPSIA, HEPATIC CANCER, VIRAL HEPATITIS (5192)
- PREGNANCY, HEPATITIS (5209)
- PREGNANCY, LIVER FUNCTION, LIVER STEATOSIS (9082)
- PROTEIN-BINDING, CARRIER SYSTEMS, BILIRUBIN, TRANSPORT MECHANISMS (3095)*
- RADIOLOGY, CHOLANGIOGRAPHY, DUODENOGRAPHY (5689)
- RETENTIONAL, VIRAL HEPATITIS, NEWBORN (4457)
- SERUM HEPATITIS, BLOOD TRANSFUSION (8357)
- STEROID, NEONATE, BILIRUBIN (4424)
- SURGERY, CHOLESTASIS, HEPATITIS (5179)
- TRYPSIN, CHYMOTRYPSIN, ENZYMES (1376)
- VIRAL HEPATITIS, EPIDEMIOLOGY, RELAPSE (4489)
- VIRAL HEPATITIS, GENETIC FACTORS, BLOOD GROUPS, HEMOGLOBIN A2 (5260)
- VIRAL HEPATITIS, NONINFECTIOUS CHOLESTATIS, DIFFERENTIAL DIAGNOSIS, ALKALINE PHOSPHATASE, MAC LAGAN TEST (8749)

JEJUNOCOLOSTOMY
- OBESITY (3428)

JEJUNOILEOSTOMY
- OBESITY, GLUCOSE, INSULIN (5865)

JEJUNOSTOMY
- FEEDING, DECOMPRESSION (1181)

JEJUNUM
- ABSORPTION, AMINO ACID, COLON (2342)*
- ABSORPTION, LIPIDS, STEATORRHEA, BILE-SALTS (0409)*
- ABSORPTION, MAGNESIUM, CALCIUM, ELECTROLYTES (1631)*
- ABSORPTION, SODIUM, AMINO ACID, WATER (6349)*
- ABSORPTION, URINE CONTENTS, DOG (0029)*
- ADENOCARCINOMA (3432)
- AMINO ACID, ACTIVE TRANSFER (1787)*
- AMINO ACIDS, UPTAKE, DOG (0912)*
- ANTILYMPHOCYTE SERUM (1931)
- ATRESIA, STENOSIS, SURGERY (0361)*
- BACTERIAL COLONIZATION, BILE SALT HYDROLYSIS (1152)*
- BILE SALT, INHIBITION, TRANSPORT, 3-O-METHYL GLUCOSE, RAT (3169)*
- BILIARY-JEJUNAL BYPASS, STENOSIS, CALCULI, PANCREATIC TUMOR (5300)*
- BIOPSY (7281)
- BIOPSY, COMPLICATION, BACTEREMIA (7677)*
- BIOPSY, MARASMUS, FAT ABSORPTION, CHILDREN (6224)
- CARCINOMA, RECURRENT GASTROINTESTINAL HEMORRHAGE (3426)
- CATECHOLAMINE, TRANSMURAL STIMULATION (0727)*
- CELIAC DISEASE, VILLI, PEPTIDASES, GLUTEN (3448)*
- CHOLESTEROL, ABSORPTION, RABBIT (3096)*
- CHOLESTEROL ESTER, STORAGE DISEASE, MUCOSA, ULTRASTRUCTURE (0358)*

IRCULAR AND LONGITUDINAL MUSCLE, ELECTROPHYSIOLOGY, CAT, RABBIT (2358)•
OLON SHUNT, FIBROSIS, FATTY LIVER (4521)
ONGENITAL ATRESIA, ILEUM, COLON (6208)
RYPTS, DIURNAL FLUCTUATIONS MITOSIS, DNA SYNTHESIS, MICE (0906)•
IAPHRAGM, CONGENITAL, SURGERY, FETUS (4221)
IPEPTIDE HYDROLASES, ILEUM (0904)•
ISACCHARIDASES, MUCOSA (1942)
ISTENSION, SECRETION, GASTRIC, PANCREATIC (7862)•
IVERTICULITIS (6681)
IVERTICULOSIS, ENTEROLITH, OBSTRUCTION (1187)
IVERTICULOSIS, MALABSORPTION (3457)
IVERTICULOSIS, MALABSORPTION, OSTEOMALACIA, RICKETTS (5078)
IVERTICULOSIS, VOLVULUS, METABOLISM (8146)
IVERTICULUM, DUODENUM (2665)
IVERTICULUM, SURGERY (2673)
NA, FORMATION, LOSS, EPITHELIUM, MICE (1781)
UODENOJEJUNOSTOMY, DUODENAL ULCER, AMPULLA OF VATER (6561)
UODENUM, ELECTRICAL ACTIVITY, CAT (3888)•
UODENUM, ILEUM, SLOW WAVE (3884)•
LECTRICAL POTENTIAL, ION, MUCOSA (4803)
NTERITIS, ILEUM, ASCARIS (5358)
NTEROCHROMAFFIN CELLS, ULTRASTRUCTURE, MOUSE (0004)•
NZYME, HISTOCHEMISTRY, COLON, ACTH, CORTISONE, RAT (0169)
NZYME ACTIVITY, LOW TEMPERATURE, STORAGE TIME, RAT (1606)
NZYME HISTOCHEMISTRY, INTESTINES, MAN, ANIMALS (0752)•
ITHELIUM, GLUCOSE-6-PHOSPHATASE, THIAMINE PYROPHOSPHATASE (4703)•
ITHELIUM, NEUTRAL AMINO ACIDS (5500)
GOMETRINE, DOPAMINE, NORADRENALINE, RABBIT (0915)
OPHAGUS, DUODENUM, GASTRECTOMY (1027)
LLING DEFECT, GALLSTONE ILEUS, RADIOLOGY, DUODENUM (5857)
LLING DEFECT, PEUTZ-JEGHER'S SYNDROME, JEJUNUM, ILEUM, GASTRIC MUCOSA (5875)
STULA, COMMON ILIAC ARTERY, AORTA (1174)
LATE METABOLIZING ENZYMES, DIET, FOLATE, METABOLISM (5611)•
S, PORTAL VENOUS SYSTEM, X-RAY (6989)
YCOLYTIC ENZYME, DIETARY REGULATION, FOLIC ACID (5613)•
YCOLYTIC ENZYME, SEX STEROID REGULATION (5427)•
YCOLYTIC ENZYME ACTIVITY, HORMONE, RAT (5619)•
MATOMA, TRAUMA, FELSON'S SIGN (4217)

HISTOLOGY, MORPHOLOGY, VILLI (1570)•
ILEAL INVAGINATION, PEUTZ-JEGHERS SYNDROME (4241)
ILEOJEJUNAL NEOPLASM, RECKLINGHAUSEN,S DISEASE, COMPLICATION (0370)
ILEUM, COLON, BACTERIA, SURGERY (1927)
ILEUM, COLON, SURGERY (1929), (1951)
ILEUM, MUCOSAL, TRANSFER SYSTEM, ALDOSTERONE (1630)•
IMPAIRED, ABSORPTION, AMINO ACID (7835)•
INFARCTION, PANCREATITIS (5968)
INORGANIC ION CONTENT, L-ALANINE, MEMBRANE PERMEABILITY (5476)•, (5488)•
INTERPOSITION, ESOPHAGUS, GASTRECTOMY (4171)
INTERPOSITION, NUTRITION, RADIOLOGY, POST-GASTRECTOMY (3368)
INTERPOSITION, PEPTIC ESOPHAGITIS, HIATAL HERNIA (7296)•
INTUSSUSCEPTION, INTRACTABLE OBESITY (4219)
INVAGINATION, CANCER, LUNG (5043)
IRRITATION, POSTVAGOTOMY-PYLOROPLASTY, DUMPING, DIARRHEA, GASTRIN MECHANISM (0298)
JEJUNO-ILEITIS, CHRONIC PERITONITIS, HISTOLOGY, RADIOGRAPHY (4232)
JEJUNOJEJUNAL INTUSSUSCEPTION, PANCREATODUODENECTOMY (5866)
LACTASE DEFICIENCY, LACTOSE MALABSORPTION, ESKIMOS (0403)•
LACTASE DEFICIENCY, UNSPECIFIC ABDOMINAL COMPLAINTS (0356)•
LEIOMYOBLASTOMA, ALCOHOL-INDUCED PAIN (3425)
LEIOMYOMA (1944)
LOOP, RABBIT, GLUCOSE PERFUSION, ABSORPTION, EXCRETION (6367)
MALABSORPTION, DIARRHEA (3698)•
MALABSORPTION, GLUCOSE TRANSPORT, HETEROZYGOTES (3546)•
MALABSORPTION, IMMUNGLOBULINS, NON-TROPICAL SPRUE (1962)•
MALABSORPTION, PARASITE (5089)
MEGAENTERON, COLON, BACTERIA (4568)•
MEGAENTERON, COLON, COLIFORM (4566)•
MICROBIAL INFESTATION, PARASITIC INFESTATION, MALABSORPTION SYNDROME, ACHYLIA (3786)
MORPHOLOGICAL CHANGE, RESECTION, CHILDREN (1191)
MORPHOLOGY, SPRUE, HAITI (5890)
MORPHOLOGY, UGANDA (1199)
MOTILITY, AET, TAENIA COLI, DEFECATION, RABBIT (5623)
MOTILITY, MOTOR ACTIVITY, ANTIBIOTICS, BLOCKING AGENTS (4787)•
MUCOSA, BACTERIAL FLORA, DUODENUM (2190)•
MUCOSA, CELIAC DISEASE, STEATORRHEA (5085)
MUCOSA, CONTRACTION (3129)
MUCOSA, CYTOCHEMISTRY, MALABSORPTION (8931)
MUCOSA, DERMATITIS (5057)
MUCOSA, DISACCHARIDASE, GERIATRICS(0161)•

- MUCOSA, DISACCHARIDASE, INFANTILE MALNUTRITION (2688)•
- MUCOSA, DUODENUM, CIRRHOSIS, VIRAL HEPATITIS (5867)
- MUCOSA, DUODENUM, ENZYME (3823)
- MUCOSA, ENTEROPATHY, DERMATITIS HERPETIFORMIS (3447)•
- MUCOSA, ENZYME, GLYCOLYTIC, GLUCONEOGENIC, ALLOXAN-DIABETES, FASTING (2282)•
- MUCOSA, LACTOSE MALABSORPTION, ADULT (5896)
- MUCOSA, LYMPHOMA, ABDOMINAL PAIN, ALPHA GLOBULIN, IGA, HYPOKALEMIA, (5346)
- MUCOSA, STIMULATION, VASODILATION (4868)
- MUCOSA, ULTRASTRUCTURE, NORMAL HISTOLOGY, CELIAC DISEASE (5885)•
- MYOSARCOMA (7425)
- OXYGEN UPTAKE, GLUCOSE UTILIZATION, SMALL INTESTINE (1587)
- PANETH CELL, MITOSIS, CELLULAR REGENERATION (1567)•
- PERMEABILITY CHANGES, BILE SALT, RAT (1634)•
- PGE1 - INDUCED CONTRACTIONS, MORPHINE ANTAGONISM, GUINEA PIGS (0041)•
- PH, GASTRIC HYPERSECRETION, FAT DIGESTION (5893)
- PHLEGMON, LARVA, ANISAKIA (0388)
- POLYPOSIS, PEUTZ-JEGHER'S SYNDROME (6680)
- PRIMARY ADENOCARCINOMA (8900)
- PRIMARY MALIGNANT TUMOR (1945)
- PRIMARY MALIGNANT TUMORS, ILEUM (7701)
- REFLEX, DUODENUM, SMALL INTESTINE (1655)
- RUPTURE. CLOSED ABDOMINAL TRAUMA (1190)
- SCANNING ELECTRON MICROSCOPY, VILLI, GOBLET CELLS, MICROVILLI, EPITHELIAL CELLS (1568)•
- STENOSIS, CROHN'S DISEASE, MAN (0401)
- STENOSIS, MAN (0381)
- STOMACH, INVAGINATION, RETROGRADE, ENTERO-ANASTOMOSIS (4140)
- SUGAR, TRANSPORT, RAT (3097)•
- SURGERY (5046)
- SURGERY, FEEDING, DECOMPRESSION (1181)
- SURGERY, SYNDROMES (1154)
- TOTAL GASTRECTOMY, ESOPHAGO-JEJUNAL-DUODENAL INTERPOSITION (1027)
- TRANSPORT, METOCLOPRAMIDE, DOG (3107)•
- TRANSPORT, VILLI, DOG (0027)•
- TRANSPORT RATE, CHYME, RAT (0038)•
- ULCER, DUODENAL ULCER, PERITONITIS, NUTRITION, VAGOTOMY, DYSTONIA (5025)
- VILLI, CELLULAR DIFFERENTIATION (1784)•
- VILLI, CRYPT, CHANGES, COLCHICINE (3035)•
- VILLI, MICROPUNCTURE, IN VITRO, DOG (0766)•
- VILLUS, DUODENUM, ILEUM (1569)•
- WATER, SODIUM, ABSORPTION, POST-ABDOMINAL SURGERY (2657)•
- WATER TRANSPORT, SODIUM, CIRCULATION ENZYME (1633)•

JOHNE'S DISEASE
  - ILEUM, MALABSORPTION, AMINO ACID, HISTIDINE, MUCOSA (0404)•

KALLIKREIN
  - CYSTIC FIBROSIS, SALIVA, URINE, PLASMA (1306)
  - PLASMA KININS, HEMORRHAGIC PANCREATITIS (4358)
  - PANCREATIC, HUMAN SERUM, TRYPSIN INHIBITION, KININ (6415)

KIDNEY
  - ACID-BASE BALANCE, REGULATION, MALNUTRITION (4605)
  - ACUTE PANCREATITIS, THROMBOSIS, ENZYMATIC TOXEMIA (2789)
  - CIRRHOSIS, MAN (0648)
  - COMPLICATIONS, CONGENITAL HEPATIC FIBROSIS (4408)
  - COMPLICATIONS, LIVER FIBROSIS (4435)
  - COPPER, CERULOPLASMIN, ACUTE CHOLECYSTITIS (2972)
  - DISEASE, LIVER FUNCTION, AMINE NITROGEN (7549)
  - DISEASE, PANCREAS, FUNCTION. SECRETION, LIPASE, AMYLASE, BICARBONATE (4330)•
  - ENZYME ACTIVITY, LOW TEMPERATURE, STORAGE TIME, RAT (1606)
  - FRUCTOSE DIPHOSPHATASE, LIVER, COA, ACYL CARRIER, PROTEIN (6290)•
  - FUNCTION, CREATININE, UREA, RESIDUAL NITROGEN (7694)
  - FUNCTION, SCINTILLATION CAMERA-1600 ANALYZER (3297)
  - FUNCTION, TETRACYCLINE INFUSION, LIVER (4644)
  - FUNCTIONAL FAILURE, CIRRHOSIS (2150)
  - GLYCOSURIA, GLUCOSE-GALACTOSE MALABSORPTION (3453)
  - HEPATITIS, CIRRHOSIS, ASCITES, WATER TRANSPORT (2820)
  - HEPATO-RENAL SYNDROME, ETIOLOGY, MANAGEMENT (4399)
  - LESIONS, HEPATIC CIRRHOSIS, ADOLESCENT (4516)
  - LIVER, DISEASE, FIBRIN-STABILIZATION FACTOR, METHODOLOGY (2054)
  - MALTOSURIA, INDIAN CHILDHOOD, CIRRHOSIS (1442)•
  - METABOLISM, GLUTATHIONE CONJUGATE OF 2-HYDROXYOESTRADIOL (3209)
  - MUTAROTASE, ENZYME LEVELS, SUGAR REABSORPTION, EMBRYONIC AND NEWBORN RATS (2349)
  - PYELONEPHRITIS, PYONEPHROSIS, PERITONITIS (2249)
  - TRANSPLANT, PANCREATITIS, THERAPEUTICS (2793)
  - TRANSPORT, FOOD DYES (1641)
  - VASODILATOR, HYPOTENSION (2145)

KININS
  - ACUTE HEMORRHAGIC PANCREATITIS, PLASMA, FORMATION AND DESTRUCTION, DOG (2026)•
  - PORTAL CIRRHOSIS, KININOGEN (4504)•

KVEIM TEST
  - CROHN'S DISEASE, SARCOIDOSIS (0398)•

WASHIORKOR
  ALCOHOLISM, HYPOPROTEINEMIA, POSTGASTRECTOMY (1062)
  DIARRHEA, CHILDREN, DISACCHARIDASE DEFICIENCY, MALNUTRITION (1214)•
  DIETARY DEFICIENCY, INFANT, MIDDLE CLASS FAMILY, U.S.A. (1522)
  HOOKWORM, TETRACHLORETHYLENE, CHILDREN (4603)
  IMMUNOGLOBULINS, SERUM, DEFICIENCY CHILDREN (1215)•
  IRON ABSORPTION (6945)•
  LIVER, XANTHOPHYLL, STEATHOSIS (3022)
  MALABSORPTION, PROTEIN ENTEROPATHY (1217)
  NITROGEN, FAT, MINERALS, CHILDREN (8483)
  PROTEIN, CALORIE, LIVER, ULTRASTRUCTURE, HISTOCHEMISTRY (7681)•
  PROTEIN DEFICIENCY, MALNUTRITION, HYPOGLYCEMIA (2197)
  PROTEIN-DEFICIENT DIET, ENZYME ACTIVITY (1151)•
  SERIAL BIOPSY, INTESTINAL MUCOSA, NUCLEIC ACID, PROTEIN (3440)•
  SERUM ENZYMES, TRANSAMINASES, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE, MARASMUS, MARASMIC KWASHIORKOR (6966)
  SERUM PROTEIN, MALNUTRITION (2692)

BOR
  GASTRIC SECRETION, DURING AND AFTER CHILDBIRTH (0076)
CTASE
  DEFICIENCY, POST GASTRECTOMY (2586)•
  JEJUNAL DEFICIENCY, UNSPECIFIC ABDOMINAL COMPLAINTS (0356)•
  PURIFICATION, SMALL INTESTINE, INTESTINAL DISACCHARIDES (1782)•
CTASE DEHYDROGENASE
  ISOENZYMES, MUCOSA, CANCER TISSUE, STOMACH, COLON (0062)•
CTATE DEHYDROGENASE
  GASTRIC JUICE, DIAGNOSIS, CANCER, PRECANCEROUS STATE (2517)
CTOSE
  ABSORPTION, ZINC, RETENTION (1642)
  MALABSORPTION, MILK INTOLERANCE, HOSPITAL PATIENTS, SERVICEMEN, FINLAND (2693)
  MALABSORPTION, PEPTIC ULCER SURGERY, INTESTINAL LACTASE, TOLERANCE TESTS STEATORREA (1113)•
  MALABSORPTION, SMALL INTESTINE (3455)
  MALABSORPTION, STOMACH, SURGERY (1964)
  TOLERANCE, GASTRECTOMY, POSTOPERATIVE (2586)•
MBLIASIS
  CANDIDA ALBICANS, CHILDREN, YEAST (6919)
  INTESTINE, TREATMENT (4674)
PAROSCOPY
  CRUVEILHIER-V. BAUMGARTEN-SYNDROME, CIRRHOSIS, PORTAL HYPERTENSION (6573)
AD POISONING
  APPENDICITIS, OBSTRUCTION, FISTULA (3500)

LECITHIN
  SMALL INTESTINE, DIGESTION, ABSORPTION (0917)
  TRANSMETHYLATION, BIOCHEMISTRY, AGE FACTORS (1695)•
LEIOMYOBLASTOMA
  JEJUNUM, ALCOHOL-INDUCED PAIN (3425)
  STOMACH, MUCOSA, NEOPLASM (1576)•
LEIOMYOMA
  DIGESTIVE TRACT, SYMPTOMS (0709)
  ESOPHAGUS, EPIPHRENIC DIVERTICULUM (1846)
  ESOPHAGUS, HYPERPLASIA (4121)
  GALLBLADDER, ADENOMYOMATOSIS (4557)
  GASTRIC (4150)
  GASTRIC, HISTOLOGY, CLINICAL DATA (4169)
  JEJUNUM (1944)
  NEOPLASM (0384)
  STOMACH (4145)
  TUMORS, BEHAVIOR, PROGNOSIS (0698)
LEPROSY
  HEPATITIS, ANTIGEN (2879)
LESION
  AORTO-ILIAC ATHEROSCLEROTIC, NONVASCULAR INTRAABDOMINAL, MANAGEMENT, SURGERY (3735)
  ESOPHAGEAL, FOREIGN BODY INGESTION, THERAPY, CHILDREN (8813)
  ESOPHAGUS, NEUROLOGICAL, ACHALASIA (8077)
  GASTRIC MUCOSA, SULPIRIDE, THIOPROPERAZINE (7323)•
  GASTROINTESTINAL, METHOTREXATE, LEUCOVORIN (8429)
  GASTROINTESTINAL, POTASSIUM THERAPY (3716)
  LIVER, 5-HYDROXYTRYPTAMINE (8327)•
  PANCREAS, DEFINED LIQUID DIET (8227)•
  UPPER GASTROINTESTINAL TRACT (8075)
  RECTUM, SURGERY (7457)
LEUCINE TRANSFER
  LIVER, RNA, PLASMA CELL TUMOR (1777)
LEUCOCYTE
  ELECTRON MICROSCOPY, HEPATITIS, VIRAL (0015)•
  MITOSIS, SUPPRESSION, SERA, VIRAL HEPATITIS, DONOR (2870)•
  POLYMORPHONUCLEAR COUNT, ACUTE APPENDICITIS (1266)
LEUKEMIA
  ACUTE, ULCERS, ANORECTAL NECROTIZING PSUEDOMONAS INFECTION (0490)
  LYMPHOCYTIC, CHRONIC, PULMONARY DISEASE, PNEUMATOSIS CYSTOIDES, INTESTINALIS (1980)
  LYMPHOMA, ESOPHAGUS (1839)
LEUKODYSTROPHY
  METACHROMATIC, PAPILLOMATOSIS, GALLBLADDER (1493)
LIGHTING GAS
  LIVER, CELL, MITOCHONDRIA, METABOLISM (4154)
LIPASE
  ACTIVITY, DETERMINATION (4066)
  AMYLASE, CONCENTRATION, OCCLUSION, SMALL INTESTINE, BILE DUCT (2943)•
  PANCREAS, ISOLATION, PURIFICATION (2272)•

  PANCREAS, LIPOLYSIS, ADSORPTION, SODIUM TAUROCHOLATE (6413)*
  PANCREATIC, KINESIS, LIPID MONOLAYERS (3843)
  PANCREATIC, SPECIFICITY OF TRIGLYCERIDE (1687)*
  PANCREATIC JUICE, ADAPTATION, DIETARY COMPOSITION (0810)*
  SERUM LEVELS, DIAGNOSTIC VALUE, ACUTE PANCREATITIS (9012)

LIPID
  ABDOMINAL, CELIAC ARTERY, SUPERIOR MESENTERIC ARTERY, INFERIOR MESENTERIC ARTERY (6189)
  ABSORPTION, BALANCE, MARASMUS, JEJUNUM, CHILDREN (6224)
  ABSORPTION, CORN OIL (7828)*
  ABSORPTION, INTESTINAL OCCLUSION (3874)
  ABSORPTION, SMALL INTESTINE, ENZYME (3847)*
  ABSORPTION, SMALL INTESTINE, STEATORRHEA (4252)
  ABSORPTION, STOMACH, LIPOLYSIS (7065)*
  ADIPOSE, MALNUTRITION, MUSCLE, INFANT (6227)
  ALKOXY-, STRUCTURE, LIVER (3960)
  ATHEROMA, CELIAC DISEASE, PANCREAS, ARTERIOGRAPHY, ADENOPATHY (5348)
  BILE, FATTY ACID, NUTRITIONAL FAT (3451)
  BILE, MACROMOLECULAR ASSEMBLIES, BILE SALTS, CALCULUS, ACALCULOUS, GALLSTONES (5436)*
  BIOSYNTHESIS, LIVER, GLYCEROL INCORPORATION, ION, ATP (6442)*
  BIOSYNTHESIS, PROTEIN, LIVER, RESECTION (3177)
  BLOOD LEVELS, LIVER PROTECTION, ALPHA-ALPHA-DITHIOCAPRONIC ACID, CALCIUM SALT (9083)
  CHOLESTEROL, BILE, DIET, GALLSTONE (5314)
  CHOLESTEROL, METABOLISM, ABSORPTION (5682)
  CHOLESTEROL, METABOLISM, BILE ACID (5634)
  CHOLESTEROL, METABOLISM, LIVER, INTESTINE, RAT (4856)
  CHOLESTEROL BIOSYNTHESIS, CONTROL MECHANISMS (7188)
  CHOLESTEROL METABOLISM, SERUM, PARTIAL HEPATECTOMY (6502)*
  CHOLESTEROL SECRETION, SMALL INTESTINE (7199)
  CHOLESTEROL SYNTHESIS, DRUGS, RAT (6478)
  CHOLESTEROL SYNTHESIS, LIVER, CARBOCHOLINE, ADRENALINE, RAT (5595)
  CHOLESTEROL SYNTHESIS, LIVER, DIETARY INFLUENCE, MOUSE (5579)*
  CHROMOTROPIC CELL, GRANULATION, LIVER (3858)
  CIRRHOSIS, FATTY ACIDS, CHOLESTEROL, HEPATIC INFILTRATION, COAGULATION (5291)
  COLON, HISTOCHEMISTRY, ULTRASTRUCTURE (1582)*
  COMPOSTION, LIVER, MORRIS HEPATOMA 5123, CYTOPLASMIC FRACTION (2077)
  CONCENTRATION, XANTHOMA, STOMACH (1078)
  DIETARY, LIPOGENESIS, LIVER, MAMMARY GLAND (1751)
  DIGESTION, GASTRIC HYPERSECRETION, JEJUNAL PH (5893)
  DIGESTION, VIRAL HEPATITIS (3637)
  DOLICHOL, GLUCOSE ACCEPTOR, LIVER (6307)*
  ENDOGENOUS, FATTY ACIDS, INTESTINAL MUCOSA, TRIGLYCERIDES, PHOSPHATIDYL CHOLINE, PHOPHOLIPIDS, GLYCEROPHOSPHATE PATHWAY (5625)
  ESSENTIAL FATTY ACID DEFICIENCY, LIVER PLASMA MEMBRANE, ENZYME ACTIVITY (6295)*
  FAT, ABSORPTION, DIGESTION, ENZYME (4773)
  FAT, DIET, LIVER, ALCOHOL (5236)
  FAT, DIGESTION, INTESTINE, OIL, MICELLAR PHASE, CHILDREN (4863)*
  FATTY, HEPATOGENIC MYOCARDOSIS, CIRRHOSIS, PORTAL HYPERTENSION (6893)
  FATTY ACID, CECUM, BACTERIA, ANTIBIOTIC, RAT (6512)
  FATTY ACID, CHRONIC ALCOHOLIC, LIVER DISEASE (7634)*
  FATTY ACID, EMULSIFICATION, TRIGLYCERIDES, INTESTINAL ENZYMES, MALAABSORPTION, ATP, LIPASE (4869)*
  FATTY ACID, ESTERS, PANCREAS, ALIMENTARY CANAL, INTESTINE, COLON, RABBIT (4885)
  FATTY ACID, LIVER, SYNTHESIS, FATTY ACID SYNTHETASE, ACETYLTRANSACYLASE, MALONYTRANSACYLASE (5441)*
  FATTY ACID, PENT-4-ENOIC ACID INHIBITION, HEPATIC GLUCONEOGENESIS (6425)*
  FATTY ACID, PROSTAGLANDIN, PHOSPHOLIPASE A (7192)*
  FATTY ACID, SYNTHESIS, LIVER (5442)*
  FATTY ACID, SYNTHESIS, SYNTHETASE, ACETYL GROUPS, MALONYL GROUPS, ACYL BINDING SITES (5423)*
  FATTY ACID ACTIVATION, LIVER, MITOCHONDRIA, COMPARTMENTATION, COA (7123)*
  FATTY ACID COMPOSITION, ETHIONINE, LIVER, RAT (2433)
  FATTY ACID SYNTHESIS, ADIPOSE TISSUE, CITRATE TRANSPORT (7106)*
  FATTY ACID SYNTHETASE, BINDING SITES, LIVER (5460)
  FATTY LIVER, FATTY KIDNEY, NEPHROTIC SYNDROME (6892)
  FATTY LIVER, MICROSOMAL PROTEIN SYNTHESIS (6848)
  FATTY METAMORPHOSIS, LIVER, KAMAGASAKI'S LIVER, MEDICO-LEGAL (0585)
  GASTRIC JUICE, NORMAL, PATHOLOGIC (3911)
  GASTRIC SECRETION, THIN LAYER, CHROMATOGRAPHY (8593)

GLYCO-, METABOLISM, STORAGE DISEASE, LIVER (5411)•
HYPERLIPEMIC SERUM, TRIGLYCERIDES, FATTY ACIDS (7164)
HYPERLIPIDEMIA, CHRONIC PANCREATITIS (7517)
HYPOCHOLESTEREMIA, HYDROXYLAMINE DERIVATIVE EFFECT, LIVER (5565)•
INTESTINAL MUCOSA, PHOSPHOLIPID, GLYCEROL ETHER (5416)•
LIPOFUSCINOSIS, LYMPH NODE (6203)
IPOGENESIS, LIVER, PERFUSION, MITOCHONDRIA, MICROSOMES, RAT (5575)•
LIVER, ALCOHOL, BIOCHEMICAL CHANGE, RAT (2835)
IVER, ALCOHOL, CIRRHOSIS (5235)
IVER, CARBON TETRACHLORIDE, ORGANELLE (3939)•
IVER, FATTY INFILTRATION, INTRAHEPATIC PRESSURE (6563)
IVER, GLUCAGON, PLASMA, FATTY ACID, TRIGLYCERIDE (3967)
IVER, HEPATECTOMY, METABOLISM, PLASMA (3949)•
IVER, LOBE LIGATION, RAT (1597)
IVER, METABOLISM, FAT LOAD, CC14 (5991)•
IVER, MICROSOME, CC14 TOXICITY (4471)
IVER, NUCLEUS (3826)
IVER, PREGNANCY (5245)
IVER, SPECTROPHOTOMETRIC METHOD, HISTOCHEMICAL METHOD, FATSPECIFIC DYE (5164)
IVER, STEATORRHEA, MICELLAR PHASE, NONALCOHOLIC (6764)•
IVER INFILTRATION, ALCOHOLISM, HEPATOSIS, SILYMARIN, PARENCHYMAL DAMAGE (5165)
ONG CHAIN, TRIGLYCERIDE, MEDIUM CHAIN, FECES, FAT, FATTY ACID (5499)
YSOLECITHIN, METABOLISM, DUODENUM, LIVER (3621)•
ALABSORPTION, MEDIUM CHAIN, TRIGLYCERIDE (5895)
ALABSORPTION, TREATMENT, TRIGLYCERIDE (3450)
ETABOLISM, ALCOHOL, INSULIN, ELECTROPHORESIS, CHOLESTEROL (5227)
ETABOLISM, ALCOHOLIC INTOXICATION, SHORT-TERM, LONG-TERM, GLUCONEOGENESIS, KREBS CYCLE, RATS (6082)
ETABOLISM, CARBOHYDRATE METABOLISM, CHOLINOMIMETICS, OXOTREMORINE, RAT, ARTERIAL BLOOD (5628)•
ETABOLISM, DIET (4848)
ETABOLISM, DIET, CHOLINE, METHIONINE (5558)•
ETABOLISM, ETHIONINE EFFECT, FATTY LIVER, HEPATIC ENZYMES, CYTOCHROMES, SPECTROSCOPY (6056)•
ETABOLISM, FATTY ACID, GASTROINTESTINAL TRACT (4883)
ETABOLISM, HEPATITIS, FAT DIET (3645)
ETABOLISM, HEPATOMA, ENZYME, MICE (3042)
ETABOLISM, JEJUNAL MUCOSA, SUCTION BIOPSY, PROTEIN (6346)
TABOLISM, LIPOGENESIS, LIVER (7139)•
METABOLISM, LIVER, FATTY ACID UPTAKE (7160)•
METABOLISM, LIVER, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)•
METABOLISM, LIVER, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)•
METABOLISM, LIVER, LINOLEATE DEFICIENCY, MOUSE (6489)
METABOLISM, LIVER, PROTEIN DEFICIENCY (4569)•
METABOLISM, PANCREATITIS (3534)
METABOLISM, PLASMA, LIVER, HEPATECTOMY, PARTIAL, RAT (3550)•
METABOLISM, TRIELAIDIN, FATTY ACIDS, LIVER, PLASMA (6461)
METABOLISM, TRIGLYCERIDE, HEPARIN, CHYLOMICRON, LIPOPROTEIN (3161)•
MONOLAYERS, PANCREATIC LIPASE, KINESIS (3843)
NUCLEAR MEMBRANE, LIVER (4695)•
PALMITIC ACID, CARNITINE, ESTER, METABOLISM, MITOCHONDRIA, LIVER, RAT (5582)•
PHOSPHO-, HEPATIC METABOLISM, PHOSPHORUS, MICROSOMES (4841)•
PHOSPHO-, INTESTINAL MUCOSA, LIPID ANALYSIS, GLYCEROL ETHER (5416)•
PHOSPHO-, LIVER, VITAMIN B6 (7176)
PHOSPHO-, POLYPHOSPHOINOSITIDES, LIVER, BRAIN, GUINEA PIG (5430)•
PHOSPHO-, SECRETION, SYNTHESIS, BILIARY TRACT, GALLSTONE (6129)
PHOSPHO-, SYNTHESIS, EXCHANGE, LIVER, CELLS (4820)•
PHOSPHOLIPID, FATTY ACID, LYSOPHOSPHATIDYLCHOLINE, GLYCEROL, LIVER SLICE, RAT (2434)
PHOSPHOLIPID, FATTY ACID INCORPORATION, ETHIONINE, LIVER SLICE, RAT (2432)
PHOSPHOLIPID, PHOSPHATIDYL GLYCEROL PHOSPHATE, SYNTHESIS, MITOCHONDRIA, MEMBRANE (2416)•
PLASMA, DIMETHYLBIGUANIDE, LIPOPROTEINS, FAT INTAKE (6800)
STEATOSIS, ALCOHOLIC INTOXICATION, RETICULOENDOTHELIAL SYSTEM, RAT (5233)
STEATOSIS, HEPATIC INSUFFICIENCY, PANMEDIA, ANOREXIA, HEPATITIS (5199)
STEATOSIS, HEPATITIS, JAUNDICE, REGENERATION, PARENCHYMAL VOLUME (5259)
STEATOSIS, LIVER, ALCOHOLIC, CIRRHOSIS, PORTAL HYPERTENSION, NECROSIS (5295)
STEATOSIS, LIVER BIOPSY, TRIGLYCERIDE (4896)
STEATOSIS, LOW CHOLINE, IRON, MAC DONALD DIET (RAT (5608)
STEATOSIS, OBESITY, HYPOTHALAMIC LESION, GOOSE (5188)
SYNTHESIS, FATTY ACID SYNTHETASE, LIVER, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
TOTAL, FRACTIONS, BLOOD, FECES (4009)
TRIGLYCERIDE, CHYLOUS ASCITES, SMALL INTESTINE, FATTY ACID, LYMPHATIC (6218)

TRIGLYCERIDE, LIVER, ETHANOL (6071)
TRIGLYCERIDE, LIVER, FATTY ACID, CHAIN-LENGTH, UNSATURATION, RAT (5584)*
TRIGLYCERIDE, LONG CHAIN, MEDIUM CHAIN, MOTILITY, DIGESTIVE TRACT (4799)
ULTRASTRUCTURE, INTESTINE, EPITHELIUM (4722)
VIRAL HEPATITIS, INTESTINAL CONTENTS (5273)
WOLMAN'S DISEASE, LIVER NECROSIS AND FIBROSIS, INTESTINAL MALABSORPTION (9074)
LIPID ABSORPTION
STOMACH, RESECTION (1886)
TEST, TRIGLYCERIDE IODATE (LIPIODOL), PREMATURE INFANTS (8775)
VIRAL HEPATITIS, MICELLAR CONCENTRATION, LIPID MEAL STEATORRHEA (4475)*
LIPID ANALYSIS
LIVER NEEDLE BIOPSY, QUANTITATIVE, CHOLESTEROL, TRIGLYCERIDES (0105)
LIPID METABOLISM
LIVER, ATP, CHLORINATED HYDROCARBONS, MICE (0828)*
LIVER INJURY, CHOLESTASIS, BLOOD, BILIRUBIN, ENZYME (4472)
LIPIDOSIS
SMALL INTESTINE, NEONATAL, GENETIC, MICE (2426)
TAY-SACHS' DISEASE, BIOCHEMISTRY, CEREBRAL AND HEPATIC LIPIDS (2059)
LIPODYSTROPHY
INTESTINAL, WHIPPLE'S DISEASE, POLYARTHRALGIA (1170)
LIPOGENESIS
HEPATOMAS, LACK OF ADAPTATION (1766)
LIVER, ADIPOSE TISSUE, FATTY ACID, SYNTHESIS, SUBSTRATE, ENZYME, PIG (0128)
LIVER, FATTY ACID SYNTHESIS, ENZYMES (1716)*
LIVER, GLUCOSE, GLYCOGEN, ACETATE (6434)*
LIVER, MAMMARY GLAND, DIETARY FAT (1751)
LIVER ENZYMES, GROWTH, HORMONES, WEANLING RATS (6423)*
LIPOMA
GALLBLADDER, ADENOMA, PAPILLOMA (3682)
GASTRIC, MIMICKING GASTRIC MALIGNANCY (3350)
INTESTINAL, OCCLUSION, HEMORRHAGE, DIVERTICULA (6676)
STOMACH, TUMOR, BENIGN (1039)
TUMOR, ESOPHAGUS (0244)
LIPOMATOSIS
CARDIA, STOMACH, HYPERTROPHY, CARDIA (0312)
LIPOPROTEIN
ABNORMAL SERUM, OBSTRUCTIVE JAUNDICE, HEPARIN (1502)
BETA, IMMUNOLOGIC FRACTION, OBSTRUCTIVE JAUNDICE (3679)
BETA, LEVEL, SERUM, TEST, VITAMIN A ABSORPTION, CORRELATION (3267)*
DEFICIENCY, PROTEIN SYNTHESIS LOSS, PYRAZINAMIDE, TOXICITY (2333)*
ETHANOL METABOLISM, LIVER, RAT (3166)*
LIVER, HEPATITIS, CIRRHOSIS (4040)
LIVER SYNTHESIS, FATTY ACID, ACTINOMYCIN D, PROTEIN (8615)*
LOW DENSITY, INTESTINAL MUCOSA, BIOSYNTHESIS (8685)*
LYMPH, PLASMA, RAT (3991)*
STRUCTURE, CHOLINE-DEFICIENCY. FATTY LIVER(2864)
LITHIASIS
BILE DUCT, POSTOPERATIVE (0672)
BILIARY, ACUTE PANCREATITIS (1334)
BILIARY, BILE DUCT, STENOSIS, DOG (3666)
BILIARY, DIABETES MELLITUS (1474)
BILIARY, GALLSTONES, CHOLECYSTITIS, ADHESIONS, PANCREATITIS (0676)
BILIARY, PANCREATITIS, ABDOMINAL PAIN, AMYLASE, LIPASE, HYPOCALCEMIA (5153)
BILIARY, PANCREATITIS, WIRSUNG'S CANAL, ANASTOMOSIS, CHOLANGIOGRAPHY (5151)
BILIRUBIN, SERUM PROTEIN FRACTION, PHOSPHATIDYLCHOLINE, THIAMINE, RIBOFLAVIN (2823)
CHOLE-, ACUTE ABDOMINAL PAIN, PANCREATITIS, SPASMOLYTIC, PYRAZOLONE DERIVATIVE, ANALGESIC (5369)
CHOLE-, CHOLECYSTECTOMY, VAGOTOMY, LIVER (5304)
CHOLE-, GALLBLADDER CARCINOMA, CHOLECYSTECTOMY (5311)
CHOLE-, GALLBLADDER PERFORATION, SEX FACTOR, AGE FACTOR, NUTRITION (5325)
CHOLE-, LIVER, BILE DUCT, DIGESTIVE TRACT, MIGRAINE, ACHLORHYDRIA, DYSKINESIA (5291)
CHOLE-, PANCREAS, SECRETION, GALLBLADDER (5329)
CHOLE-, POST-VAGOTOMY, CHOLECYSTECTOMY, GASTRECTOMY, ULCER, DIARRHEA (5321)
CHOLE-, RADIOLOGY (5320)
CHOLEDOCHO-, OBSTRUCTIVE JAUNDICE, HEPATORENAL INSUFFICIENCY (7658)
COMMON BILE DUCT, SURGERY (6152)
GALLBLADDER, ASYMPTOMATIC, GALLBLADDE (6139)
GALLBLADDER, CHOLECYSTECTOMY, SUTURE, SURGERY (6137)
GALLBLADDER, CHOLECYSTITIS, MALE (6918)
GALLBLADDER, GERIATRICS, SURGERY (1484)
GALLBLADDER, LESIONS, HISTOLOGY, MOUS (9192)
GALLBLADDER, PANCREATIC FUNCTION (6146)
GALLBLADDER, PHARMACOTHERAPY, PATHOPHYSIOLOGY (6138)
GALLBLADDER, SITUS INVERSUS, NON-ROTATION (6216)
LIVER, GALLBLADDER (4419)
PANCREATIC (3526)
PANCREATIC, DIET, RADIOLOGICAL DIAGNOSIS, GLUCOSE TOLERANCE (5962)
PANCREATIC, PANCREATITIS, SURGERY (3537)
RESIDUAL, RELAPSE, BILE DUCT (4536)

IVER
ABNORMAL BILE, GALLSTONES, GALLBLADDER (7656)*
ABSCESS, AMERIASIS, EPIDEMIOLOGY, LARGE INTESTINE (1549)
ABSCESS, AMEBIASIS, HEPATITIS (2089)
ABSCESS, AMERIASIS, PERICARDITIS (2074)
ABSCESS, AMEBIC, JAUNDICE (4686)
ABSCESS, ANGIOGRAPHY, AMEBA (4034)
ABSCESS, ANGIOGRAPHY, GRANULOMA (3560)
ABSCESS, ASCARIS (5399)
ABSCESS, BILE DUCT OBSTRUCTION, CHOLANGITIS, BACTEREMIA (8419)
ABSCESS, CHOLELITHIC (4437)
ABSCESS, DIAGNOSIS, CHOLANGIOGRAPHY (2530)
ABSCESS, DRUG INFUSION, UMBILICAL VEIN (6039)
ABSCESS, HEPATITIS, AMEBIASIS, METRONIDAZOLE (3703)*
ABSCESS, PERIHEPATIC, INTRAHEPATIC, BACTERIOLOGY (3605)
ABSCESS, PYLEPHLEBITIS, APPENDICITIS (3494)
ABSCESS, PYOGENIC, GAS, KLEBSIELLA (2838)
ABSCESS, SCINTILLATION SCANNING, CHILDREN (8038)
ABSCESS, SCINTILLOGRAPHY, DIAGNOSIS (4081)
ABSCESS, SURGERY (5208)
ABSCESS, SURGERY, RADIOLOGIC DIAGNOSIS AND CONTROL (3614)
ABSORPTION, CALCIUM, OBSTRUCTIVE JAUNDICE, CIRRHOSIS (0035)
ABSORPTION, K+, RB+, DIAPHRAM, TUMOR SLICES (6354)*
ABSORPTION, SMALL INTESTINE, BLOOD SUPPLY, MICELLE (4766)*
ACETYL-COA CARBOXYLASE, TRYPSIN TREATMENT, SENSITIVITY TO EFFECTORS RAT (0823)*
ACETYL COENZYME A, RAT, IN VITRO (0864)
ACID PHOSPHATASE, CHICK EMBRYO (0884)
ACID SOLUBLE MOLECULES, 14C-ADENINE INCORPORATION, IN VIVO, RAT (8534)
ACID SOLUBLE NUCLEOTIDES, 2,4-DINITROPHENOL POISONING, RAT (8340)
ACTINOMYCOSIS, PANCREAS (2842)
ACTIVE ACETYL COA CARBOXYLASE, RATS, HOMOGENATION (0139)
ACUTE DAMAGE, ALCOHOL, HALOTHANE, AUSTRALIA ANTIGEN (8343)
ACUTE, HEPATITIS, CELL REGENERATION, STEATOSIS, BIOPSY, HISTOLOGY, ELECTRON MICROSCOPY (5252)*
ACUTE, HEPATITIS, GLUCOCORTICOID, PROTEIN SYNTHESIS, PREDNISOLON, BIOPSY (5255)
ACUTE, HEPATITIS, PANCYTOPENIA, APLASTIC ANEMIA, BONE MARROW (5266)
ACUTE AND CHRONIC DISEASE, AUSTRALIA ANTIGEN (0536)*
ACUTE ATROPHY, BLOOD AMMONIK, ACID-BASE EQUILIBRIUM (3558)
ACUTE ATROPHY, PREGNANCY, PLASMAPHERESIS, ULTRASTRUCTURE, NECROSIS, BIOPSY (5293)
ACUTE CHOLECYSTITIS, SURGERY, PANCREATIC ENZYME, JAUNDICE, BIOPSY (5324)
ACUTE DAMAGE, ALCOHOLISM (2021)
ACUTE HEPATIC FAILURE, CHILDREN, CAUSE, TREATMENT (2090)
ACUTE HEPATIC NECROSIS, PLASMAPHORESIS, PLASMA EXCHANGE, COMA (2804)*
ACUTE HEPATITIS, COMA, EARLY DIAGNOSIS (5660)*
ACUTE HEPATITIS, GRANULOMATOUS, BIOPSY, PATHOLOGY, HISTOPLASMOSIS (4448)*
ACUTE NON-VIRAL HEPATITIS, AFLATOXIN, NECROSIS, MONKEY (6065)
ACUTE NON-VIRAL HEPATITIS, ERYTHROID APLASIA (6064)
ACUTE NON-VIRAL HEPATITIS, MUSHROOM POISONING, CARBOHYDRATE METABOLISM (6066)
ACUTE NON-VIRAL HEPATITIS, TRAUMA, SEVERANCE (7598)
ACUTE PANCREATITIS, THROMBOSIS, ENZYMATIC TOXEMIA (2789)
ACUTE PHOSPHORUS POISONING, CYTOTOXIC DRUG (3623)
ACUTE STEATOSIS, PREGNANCY (2827)
ACUTE TRAUMA, COPPER, NON-VIRAL HEPATITIS (6067)
ACUTE VIRAL HEPATITIS, AUSTRALIA ANTIGEN (5700), (6867)
ACUTE VIRAL HEPATITIS, AUSTRALIA ANTIGEN, SERUM (5699)
ACUTE VIRAL HEPATITIS, BIOPSY, BOTKIN'S DISEASE, CHILDREN (6084)
ACUTE VIRAL HEPATITIS, BLOOD COAGULATION (6095)
ACUTE VIRAL HEPATITIS, CHRONIC, EPIDEMIOLOGY (6104)
ACUTE VIRAL HEPATITIS, CHRONIC HEPATITIS, CIRRHOSIS, BOTKIN'S DISEASE, CHILDREN (6093)
ACUTE VIRAL HEPATITIS, DIAGNOSIS, RING PRECIPITATION REACTION (5726)
ACUTE VIRAL HEPATITIS, DRUG ABUSE (7604)
ACUTE VIRAL HEPATITIS, ETIOLOGY, EPIDEMIOLOGY (6089)
ACUTE VIRAL HEPATITIS, FAMILY (6092)
ACUTE VIRAL HEPATITIS, FOLLOW-UP (6102), (6103)
ACUTE VIRAL HEPATITIS, JAUNDICE, CHOLESTASIS, DIAGNOSIS (6097)
ACUTE VIRAL HEPATITIS, MITOSIS (6096)
ACUTE VIRAL HEPATITIS, REMOTE SEQUELAE (7603)
ACUTE VIRAL HEPATITIS, SERUM (6091)
ACUTE YELLOW ATROPHY, COMA, ENCEPHALOPATHY, ACUTE HEPATITIS (9102)
ADENOSINE DEAMINASE, MOUSE (3818)*
ADENYL CYCLASE, PLASMA MEMBRANE, CATIONS (6428)*
ADH ACTIVITY, ETHANOL, TOXICITY, PROTEIN, RATS (6062)*
ADHESIVE PERIHEPATITIS, SURGERY (2101)
ADRENAL CORTEX, ETHANOL, GLUCOSE, FATTY ACID (2409)*

AFLATOXIN, CYTOLOGY, CYTOCHEMISTRY, RAT (3622)
AFLATOXIN, NON-VIRAL HEPATITIS, UGANDA (6070)
ALAMINE, GLUTAMATE, OXOGLUTARATE, GUINEA PIG (6475)
ALBUMIN, TRANSFERRIN, FIBRINOGEN, SYNTHESIS (3968)
ALBUMIN SYNTHESIS, CIRRHOSIS (8373)•
ALBUMIN SYNTHESIS, DISTRIBUTION (7890)•
ALCOHOL, ALDEHYDES, OXIDATION, RAT, ENZYMES, MITOCHONDRIA (0932)
ALCOHOL, CONGENERS, TUMORS, STEATOSIS, NECROSIS, PARENCHYMAL DAMAGE, FUSEL OIL (5226)
ALCOHOL, LIPID, BIOCHEMICAL CHANGE, RAT (2835)
ALCOHOL, MORPHOLOGY, HISTOCHEMISTRY (4466)
ALCOHOL, REGENERATION, AGE, NUTRITION, VITAMIN B12, CORTISONE (5279)
ALCOHOL, TOXICITY, CIRRHOSIS, CHRONIC HEPATITIS (6122)
ALCOHOL DAMAGE, ACUTE HEPATITIS, HISTOLOGY, GLUCOCORTICOID (8342)
ALCOHOL DEHYDROGENASE, CHELATION, RATE (7140)•
ALCOHOL DEHYDROGENASE, COENZYME BINDING SITES, CATALYTIC SITES, AROMATIC ALDEHYDE REDUCTION, HORSE (1753)
ALCOHOL DEHYDROGENASE, COMPLEX, KINETICS (6436)•
ALCOHOL DEHYDROGENASE, INACTIVATION, HORSE (5445)
ALCOHOL DEHYDROGENASE, METHANOL ACTIVITY, YEAST (7973)
ALCOHOL DEHYDROGENASE, PYRAZOLE, DIMETHYLSULFOXIDE (7126)•
ALCOHOL DEHYDROGENASE, ZINC-FREE, COENZYME INTERACTION, HORSE (0132)
ALCOHOLIC, CIRRHOSIS, HEMODYNAMICS, STEATOSIS, PORTAL HYPERTENSION, NECROSIS (5295)
ALCOHOLIC, CIRRHOSIS, JAUNDICE, HEMOLYTIC ANEMIA, BURR CELLS, HYPERSPLENISM (5294)
ALCOHOLIC, CIRRHOSIS, RENAL MEDULLAR NECROSIS, PATHOLOGICAL ASSOCIATION (9168)
ALCOHOLIC CIRRHOSIS, ARGININE MALATE, AMMONIEMIA (6804)
ALCOHOLIC CIRRHOSIS, ASCITES, SURGERY (6906)
ALCOHOLIC INJURY, VITAMINS, CYSTEINE (4462)
ALCOHOLISM, ABNORMAL FUNCTION (0584)
ALCOHOLISM, FATTY LIVER, HEPATOMEGALY, JAUNDICE, HEMOLYTIC ANEMIA, POLYNEUROPATHY (5224)
ALDOLASES, HEPATOMA, ANTIBODIES (1703)•
ALKALI, ACID PHOSPHATASE, ULTRASTRUCTURE, HEPATITIS (3084)
ALKALINE PHOSPHATASE, BILE DUCT, OBSTRUCTION, SERUM, RAT (3661)•
ALKALINE PHOSPHATASE, BONE, L-HOMOARGININE, INHIBITOR (7923)
ALKALINE PYROPHOSPHATASES, NUCLEOSIDE DI- AND TRIPHOSPHATE (3200)
ALKOXYLIPIDS, MOLECULAR STRUCTURE (3960)
ALLERGY, CUTANEOUS LESIONS, CUTANEOUS ARTERIES, CAPILLARIES, JUVENILE CIRRHOSIS, PARAKERATOSIS (5285)
ALLOGRAFT, AUXILIARY FUNCTION (3196)
ALLOGRAFT, XENOGRAFT, PRIMATE (1583)•
ALLOTRANSPLANTATION, BILIARY DUCT OBSTRUCTION, ARTERIAL BLOOD RESTRICTION (3182)
ALPHA-AMINOISOBUTYRIC ACID UPTAKE, INJURY STIMULATED, RAT (2330)•
ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE, HEPATOMA, THYROID REGULATION (8270)•
ALPHA 2-(ACUTE PHASE) GLOBULIN, SYNTHESIS, SECRETION (6450)•
ALTERATION, ADENOCARCINOMA OF GALLBLADDER, ANATOMOPATHOLOGY (9048)
ALTERATION, CHRONIC TONSILLITIS (6041)
ALTERATION, NAD, NADP, MITOCHONDRIA (7595)
ALTITUDE, PRESSURE, FAT (7904)•
ALVEOCOCCOSIS, JAUNDICE, RADIOISOTOPE SCAN (3672)
AMEBIASIS, ABSCESS, NEOPLASM (1560)
AMEBIASIS, DIAGNOSIS, THERAPY (3018)
AMEBIASIS, EPIDEMIOLOGY, LAOS (9265)
AMEBIASIS, METRONIDAZOLE (9260)•
AMEBIASIS, PLEURO-PULMONARY COMPLICATIONS (4686)
AMEBIASIS, SURGERY, HEPATITIS (2087)
AMEBIC ABSCESS (7762)
AMEBIC ABSCESS, CLINICAL STUDY (9273)
AMEBIC ABSCESS, DIAGNOSIS (7753)
AMEBIC ABSCESS, HEALING RATE, SCAN (7015)
AMEBIC ABSCESS, HEPATITIS, DIAGNOSIS MANAGEMENT (0712)•
AMEBIC ABSCESS, INFECTIOUS HEPATITIS CIRRHOSIS, CARCINOMA (2058)
AMEBIC ABSCESS, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
AMEBIC ABSCESS, RUPTURE, PREGNANCY (7012)
AMEBIC ABSCESS, SCANNING, TREATMENT (3782)
AMEBIC ABSCESS, SURGERY (7770)
AMEBIC ABSCESS, THERAPY, ANATOMOPATHOLOGY (9266)
AMEBIC CYST, HAMSTER (8490)
AMEBIC HEPATITIS, AMEBIC ABSCESS, CONNECTIVE TISSUE (2099)
AMINO ACID, GLUCONEOGENESIS (0893)
AMINO ACID, LEUCINE, ISOLEUCINE, VALINE, CATABOLIC PATHWAYS, DEHYDROGENASES (4818)•
AMINO ACID, METABOLISM, DISORDERS (8262)•
AMINO ACID, METABOLISM, PROTHROMBIN (2419)•
AMINO ACID, PHOSPHOLIPID, PREGNANT, RAT (0885)
AMINO ACID INCORPORATION, AMINO ACID

ASSAY, POLYRIBOSOMES, GLUTATHIONE, RAT (4712)•
AMINO ACID TRANSPORT, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)•
AMINOACYLATION, T-RNA (3088)
AMINOLEVULINIC ACID SYNTHETASE, INDUCTION, NEONATAL (7897)•
AMINOPYRINE METHYLASE, NICKEL CARBONYL (7922)•
AMINOTRANSFERASE, THEOPHYLLINE, EPINEPHRINE (6435)•
AMMONIA METABOLISM, PORTACAVAL SHUNT CIRRHOSIS (2134)•
AMOEBIASIS, TRYPANOSMIASIS, LEISHMANIASIS (5398)
AMOEBIC ABSCESS, CARDIOMEGALY (1545)
AMP DEAMINASE, THIOACETAMIDE, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE (7150)•
AMYLASE SYNTHESIS, INHIBITION, CYANIDE, PROTECTION, RAT (5567)•
AMYLOPECTINOSIS, ULTRASTRUCTURE (9059)
NATOMY (2057)
NATOMY, SEGMENTS (1585)
NATOMY, SURGERY (7806)
NDROGEN, FETUS, IN VITRO FORMATION (5605)
NESTHESIA, CIRCULATION (6843)
NESTHETICS, ARTERIAL HYPOTENSION, HYPOTHERMIA, HEMODYNAMICS (6840)
NEURYSM, POLYARTERITIS, ARTERIOGRAPHY (4904)
NGIOGRAPHY, CELIAC AXIS, PATHOLOGY (4019)•
NGIOGRAPHY, INTRAHEPATIC PORTAL VASCULATURE, PITRESSIN, HISTAMINE (1768)
NGIOGRAPHY, METASTASES, CONTRAST MEDIA CONCENTRATIONS (8707)•
NGIOGRAPHY, SCINTIGRAPHY, MALIGNANT TUMORS (0959)
NGIOTENSIN DEACTIVATION, SODIUM, RENAL ARTERY COMPRESSION (7143)•
NICTERIC CIRRHOSIS, SULFOBROMOPHTHALEIN AND CHOLINESTERASE TESTS, CORRELATION (9159)
NICTERIC HEPATITIS, DIPHENYLHYDANTOIN (2096)
NOMALY, LEFT LOBE, GASTRIC VOLVULUS (6656)
NTIBIOTIC, ACTINOMYCIN, ENDOPLASMATIC, NETWORK, POLYSOME, RIBOSOME (2819)
NTICYTOLYTIC, HEPATOCYTE (1729)
NTIGENS, SUBCELLULAR FRACTIONS (0751)•
NTITUBERCULOSIS DRUG TOXICITY, TUBERCULOTIC ALCOHOLICS, FUNCTION TESTS (0595)
RGININE INCORPORATION, HEPATOMA, RAT, IN VITRO (7946)
RTERIALIZATION, PORTACAVAL SHUNT, PORTAL HYPERTENSION (6780)•
RTERIOGRAPHY, HEPATOMA, CIRCULATION (7213)•
RTERIOGRAPHY, SCINTILLOGRAPHY, SPACE OCCUPYING LESIONS (1801)•
ARTERIOLES, MICROSCOPY, FUNCTIONAL UNIT (6320)
ARTERY, ANEURYSM, BILIARY TRACT, LIGATION (6822)
ARTERY, LIGATION, RIGHT LOBE METASTASES, COLON, CANCER (8450)
ARTERY, STENOSIS, ARTERIOGRAPHY, SURGERY (8473)
ASCITES HEPATOMA, PLASMA MEMBRANE, LIPID, PHOSPHOLIPID (0092)•
ASCITIC CIRRHOSIS, ELECTROCARDIOGRAPHY (2161)
ASPARTATE, AMINOTRANSFERASE, ISOENZYME, CCI4 POISONING (6850)
ATPASE, SECRETION, CASTRATION (3989)
ATPASE, STEROID, RAT (6339)
ATPASE ACTIVITY, ION DEPENDENCE, HEPATOMA, RATS (0829)•
ATP-D-GYCERALDEHYDE-3-PHOSPHOTRANSFERASE, NORMAL VALUES AT DIFFERENT AGES, RAT (8533)
ATRIOVENTRICULAR BLOCK, BILIRUBIN, ENZYME (2826)
ATROPHY, CELL AUTOPHAGY, GLYCOGEN SEPARATION (6774)•
AUSTRALIA ANTIGEN, ACUTE VIRAL HEPATITIS (6090)
AUSTRALIA ANTIGEN, ANTIBODY, LYMPHOPROLIFERATIVE DISORDER (2947)•
AUSTRALIA ANTIGEN, HEPATITIS, ADAPTATION TO INFECTIOUS DISEASE (3632)
AUSTRALIA ANTIGEN, HISTORY, HEPATITIS (5270)
AUSTRALIA ANTIGEN, VIRAL HEPATITIS, CHRONIC DISEASE, ADDICTION (6860)•
AUTOANTIBODIES, CIRRHOSIS, HEPATITIS, LUPUS ERYTHEMATOSUS DISSEMINATUS (7587)
AUTOIMMUNE HEPATITIS, SEROLOGICAL DIAGNOSIS (5669)
AUTOIMMUNIZATION, FOLLICULAR HEPATITIS, HISTOLOGY (5668)
AUTORADIOGRAPHY, NECROSIS, CCI4-DAMAGE (8325)•
AUTOTRANSPLANTATION, DNA AND PROTEIN METABOLISM, RATS (0817)•
AUTOTRANSPLANTATION, HETEROTROPIC, TECHNIQUES, RESULTS (2449)
AUTOTRANSPLANTATION, ORTHOTOPIC HEPATECTOMY, PATHOLOGY, DNA (5171)•
AUXILIARY HOMOTRANSPLANTATION, DOG (1345)•
AUXILIARY PARTIAL TRANSPLANTATION, MACACA (3198)
BARBITAL ENZYME INDUCTION, ACTION (3049)
BARBITURATE METAROLISM, SLEEPING TIME, MICROSOMAL ENZYME, INDUCTION, REVERSIBILITY, PHENOBARBITAL, RAT (4744)
BENIGN CHOLANGIOMA, HEPATIC METASTASES, DIFFERENTIAL DIAGNOSIS, HISTOLOGICAL EXAMINATION (0952)•
BENZO (ALPHA) PYRENE HYDROXYLASE, INDUCTION (7928)
BETA-GLUCURONIDASE, GROWTH, METAMORPHOSIS, TADPOLE (3067)
BETA-GLUCURONIDASE, PARATHION, RAT (3617)

BILE, BILE ACID, BILIRUBIN, HAMSTER (3936)•
BILE, CHOLANGITIS, SCLEROSIS (5307)
BILE, CIRRHOSIS, LAENNEC'S (2130)•
BILE, ENZYMES, GALLBLADDER (0853)•
BILE, GALLSTONE, CHOLESTEROL (7655)•
BILE, STORAGE, TRANSPORT (4039)
BILE ACIDS, HEPATIC DISEASE, JAUNDICE, HEMOLYTIC TOXINS (5256)
BILE ACID BIOSYNTHESIS, ENTEROHEPATIC CIRCULATION, INTESTINAL ABSORPTION, BILE SALTS (8570)
BILE ACID BIOSYNTHESIS, REGULATION (7133)•
BILE DUCT, ASCARIASIS, SURGERY (7769)
BILE DUCT, BACTERIAL INFECTION, ANTIBIOTICS (7583)
BILE DUCT, CALCULI, CHOLEDOCHOLITHOTOMY, CHOLANGIOGRAPHY (6032)
BILE DUCT, DIGESTIVE TRACT, CHOLELITHIASIS, MIGRAINE, ACHLORHYDRIA, DYSKINESIA (5343)
BILE DUCT, SURGERY, DIETARY INDICATIONS, CHILDREN (9064)
BILE PIGMENT SITE, HEPATITIS (4491)
BILE SECRETION, PITUITRIN (7163)
BILE SALTS, FORMATION, ELECTROLYTES (0861)
BILE SALTS, SECRETION, RABBIT (0845)•
BILHARZIAL FIBROSIS, PARATHYROID (6281)
BILHARZIAN, PARASITE, HEPATIC LESIONS, THERAPEUTIC INDICATIONS (6252)
BILHARZIASIS, BILE PIGMENT, SCHISTOSOMIASIS (2249)
BILIARY ATRESIA, SCINTILLATION CAMERA, CIRRHOSIS, ROSE BENGAL (1810)•
BILIARY CIRRHOSIS, HISTOLOGY, IMMUNOLOGY (8387)
BILIARY TRACT, ISONIAZIDE (1733)
BILIARY TRACT, SURGERY, GALLBLADDER (5308)
BILIFUGE ''PLAN'', BILIARY DISEASES, CLINICAL IMPROVEMENT, HEPATIC DISEASE (6005)
BILIRUBIN, CONJUGATION, ESTROGEN, BREAST MILK JAUNDICE (6772)•
BILIRUBIN, IRON, JAUNDICE (2131)•
BILIRUBIN, MENTHOL, RATS, HUMAN, GLUCURONYL TRANSFERASE (4844)•
BILIRUBIN, UDP-GLUCURONYL TRANSFERASE, BIOPSY (7779)•
BILIRUBIN UPTAKE, HYPERBILIRUBINEMIA, GILBERT'S SYNDROME (5205)
BIOCHEMISTRY, AGE FACTORS, ENZYME, GLUCAGON, FACTOR (1696)•
BIOCHEMISTRY, ENZYMES, HEPATOMA (1728)
BIOCHEMISTRY, ENZYME ACTIVITY, MONOOXYGENASE, CYTOCHROME P-450 (2420)•
BIOCHEMISTRY, LIPID METABOLISM, ALCOHOL EFFECTS, VITAMINS (0831)•
BIOCHEMISTRY, MICROSOME, ANESTHESIA, DRUG EFFECTS (1727)
BIOCHEMISTRY, NUCLEI, CHROMATIN, RNA, DNA (6287)•
BIOCHEMISTRY, NUCLEIC ACID METABOLISM REGENERATION, PATHOLOGY, TRACER STUDIES (1718)•
BIOCHEMISTRY, OXIDATION, RESPIRATION, MITOCHONDRIA, UNCOUPLERS (2410)•
BIOCHEMISTRY, PROTEIN, CARCINOGEN (2397)•
BIOPSY, ACUTE LEUKEMIA, SHOCK, HEMORRHAGE, MENGHINI (5344)
BIOPSY, ACUTE MALARIA, LIGHT AND ELECTRON MICROSCOPE (1400)
BIOPSY, ALCOHOLISM, ACUTE INSUFFICIENCY, HEPATITIS, GASTRITIS, ANOREXIA, JAUNDICE (2824)
BIOPSY, CANCER (3280)
BIOPSY, CIRRHOSIS, DIAGNOSIS (5672)
BIOPSY, COMPLICATIONS (7271)
BIOPSY, CULTURE, HEPATITIS, DIAGNOSIS (2527)
BIOPSY, ENZYMATIC DIAGNOSIS, GLYCOGEN STORAGE DISEASE, GARGOYLISM (6531)
BIOPSY, HEPATITIS, CHOLANGIOGRAPHY (4078)
BIOPSY, HISTOLOGY, ACUTE CYTOLYTIC HEPATITIS (3598)
BIOPSY, LAPAROSCOPY (4063)
BIOPSY, MENGHINI NEEDLE, MODIFIED ANGLE (5657)•
BIOPSY, RENAL CANCER, NEPHRECTOMY, AMYLOIDOSIS, MUCOPROTEINS (5185)
BIOPSY PUNCTURE, HEMATEMESIS, COMMON BILE DUCT, DUODENUM, ATELECTASIS (2518)
BIOTIN DEFICIENCY, GLYCOLYSIS, ENZYME REGULATION (5569)•
BLIND BIOPSY, HEPATIC DISEASE (4068)
BLOOD FLOW, ANESTHESIA (5376)
BLOOD FLOW, BILIGRAFIN, EXCRETION, CHOLANGIOGRAPHY (4873)•
BLOOD FLOW, CHOLERESIS, DRUG EFFECTS (7924)
BLOOD FLOW, DETERMINATION, PORTAL SYSTEM (0173)
BLOOD FLOW, DOG (4079)
BLOOD FLOW, EXSANGUINATION, ARTERIAL PRESSURE, VENOUS PRESSURE, DEXTRAN, RAT (5644)
BLOOD FLOW, GLUCAGON, DOG (1790)•
BLOOD FLOW, INTRAHEPATIC DISTRIBUTION (4001), (4002)
BLOOD FLOW, MEASUREMENT, INDOCYANINE GREEN DYE, DENSITOMETER (4840)•
BLOOD PLATELETS, CIRRHOSIS (4511)
BLOOD VESSEL, CIRCULATION (4626)
BLOOD VESSEL, LYMPH VESSEL, BODY FLUID FLOW (3254)
BONE DISEASE, SERUM ALKALINE PHOSPHATASE, ISOENZYMES, URINARY HYDROXYLASE, PAGET'S DISEASE (3260)•
BOVINE, HETEROLOGOUS PERFUSION, HEPATIC FAILURE (3613)
BOVINE, HUMAN, LEUCOGENENOL ISOLATION (3193)
BRAIN GABA, INTOXICATION (3610)
BROWN-PEARCE CARCINOMA, RAT (1352)•
BRUCELLA, WRIGHT'S SERUDIAGNOSIS, MAN (0592)
BRUCELLA TITER, TUBERCULOSIS (2086)
BSP UPTAKE, KINETICS, DAMAGED HEPATOCYTES (0109)
BUDD-CHIARI SYNDROME, ANOMALOUS VENOUS DRAINAGE (2841)

BUDD-CHIARI SYNDROME, SCLEROSIS, THERAPY-INDUCED, INFANT (0561)
CALCIFIED CAVERNOUS HEMANGIOMA, SURGERY, RADIOLOGY (6015)
CALCIUM, MAGNESIUM, TRANSPORT, RAT (2343)•
CANCER, ALPHA-FETOPROTEIN (3261)•
CANCER, ALPHA-FETOPROTEIN, SEROLOGICAL DIAGNOSIS (5681)•
CANCER, CARCINOGENESIS, OROTIC ACID, ETHIONINE, N-2-FLUORNYLACETAMIDE, 3'-METHYL-DIMETHYLAMINEAZOBENZENE (6060)•
CANCER, CHEMICAL, NUCLEAR I-RNA (3567)
CANCER, CIRRHOSIS, SCANNING (1803)•
CANCER, COPPER, ZINC, POTASSIUM (5698)
CANCER, CORTISONE (1346)•
CANCER, DIAGNOSIS (5183)
CANCER, DIAGNOSIS, ALPHA-FETOPROTEIN TEST, BANTU (0544)
CANCER, DIAGNOSIS, DIFFICULTY (0571)
CANCER, DIETARY CHOLESTEROL, MOUSE (8276)
CANCER, ENZYMES, PATHOLOGY, HISTOCHEMISTRY (0538)•
CANCER, EPIDEMILOGY, ETIOLOGY, CIRRHOSIS, AGE, ENVIRONMENT, ETHANOL, CARCINOGENS (4376)
CANCER, FETOPROTEIN, SERUM (2073)
CANCER, HEPATOMA, ZINC SERUM LEVEL (1347)•
CANCER, INOPERABLE, RADIOISOTOPES, CHEMOTHERAPY, INTRA-AORTA, INTRAHEPATIC ARTERY, MORTALITY RATE (4369)•
CANCER, JAUNDICE, VIRAL HEPATITIS, PREGNANCY, ECLAMPSIA (5192)
CANCER, LACTATE DEHYDROGENASE (4431)
CANCER, MITOCHONDRIA, DNA (3549)•
CANCER, POLYCYTHEMIA (4441)
CANCER, PRIMARY, INCIDENCE, IVORY COAST (4441)
CANCER, SECONDARY, GASTRIC CANCER, ALPHA-FETOPROTEIN (8876)
CANCER, STERIGMATOCYSTIN, RATS, BANTU HEPATOMA (6769)•
CANCER, SURGERY (7542)
CANCER INVOLVEMENT, DIAGNOSIS, GAMMA-GLUTAMYL TRANSPEPTIDASE (3268)•
CAPSULE, HEPARIN PROTEOGLYCAN, ISOLATION, PIG (2303)
CARBON TETRACHLORIDE, PHENOBARBITAL, SKF 525A (8323)•
CARBOHYDRATES AND RIBONUCLEOTIDES, INTESTINAL MALABSORPTION, COCCIDIOSIS, CHICKEN (9283)
CARBOHYDRATE METABOLISM, GLYCOGEN SYNTHESIS, GLUCOSE METABOLISM, INTRACELLULAR PH (0840)•
CARBOHYDRATE METABOLISM, INCUBATION, SERUM, UREMIA (0888)
CARBOHYDRATE METABOLISM, NICOTINAMIDE (6421)•
CARBOHYDRATE METABOLISM, PIG (0899)
CARBOHYDRATE METABOLISM, UREA LEVEL, ACIDOSIS (3976)
CARBOHYDRATE OVERLOAD, GLYCOGENOSIS, GALACTOSEMIA, FRUCTOSEMIA (9070)
CARBON TETRACHLORIDE, DIETARY EFFECT FATTY LIVER, MICE (0126)
CARBON TETRACHLORIDE, ENZYME, KIDNEY (3855)
CARBON TETRACHLORIDE INTOXICATION, THIOCTANIC ACID, MICE, HISTOLOGY, METABOLISM (2860)
CARBON TETRACHLORIDE POISONING, MUCOPOLYSACCHARIDE SYNTHESIS, PASSIVE BINDING (1715)•
CARBON TETRACHLORIDE TOXICITY, MECHANISM (3187)
CARBON TETRACHLORIDE TOXICITY, PHOSPHOLIPID SYNTHESIS, FATTY LIVER (0835)•
CARCINOGEN, RAT (0856)•
CARCINOGEN, 3'-METHYL-4-DIMETHYLAMINOAZOBENZENE, TRNA (7906)•
CARCINOGENESIS, ADRENALECTOMY, MOUSE (8678)
CARCINOGENESIS, ANAEROBIC GLYCOLYSIS (7533)•
CARCINOGENESIS, DIETARY AZO-DYE, RESISTANCE (3615)
CARCINOGENESIS, DNA SYNTHESIS, AZO DYE (7902)•
CARCINOGENESIS, RAT (6827)
CARCINOGENESIS, RNA, RAT (0855)•
CARCINOMA, ARTERIAL INFUSION CHEMOTHERAPY, SURGICAL BASIS (3571)
CARCINOMA, BENIGN DISEASES, ARTERIOGRAPHY, SPLENOPORTOGRAPHY, ANGIOGRAPHY (4952)
CARCINOMA, BLASTOMA (7556)
CARCINOMA, CIRRHOSIS, CARBON TETRACHLORIDE (3543)•
CARCINOMA, CIRRHOSIS, JAPAN (6789)
CARCINOMA, COLORECTUM (2730)
CARCINOMA, ELECTRON SPIN RESONANCE, AMINOACETYL FLUORENE (1759)
CARCINOMA, HEPATOCELLULAR, AUSTRALIA ANTIGEN, VIRAL HEPATITIS, POST-NECROTIC CIRRHOSIS (0547)
CARCINOMA, HISTOLOGIC CLASSIFICATION, INFANCY, CHILDHOOD (3588)
CARCINOMA, METASTASIS, HEMORRHAGE (2041)
CARCINOMA, POLYCYTHEMIA, ERYTHROPOIETIC FACTOR, HEMOCHROMATOSIS, HYPOGLYCEMIA (5193)
CARCINOMA, PRIMARY (4409)
CARDIAC UPPER ABDOMEN SYNDROME, BILIARY TRACT, STOMACH, PANCREAS (6198)
CARNITINE ESTER, METABOLISM (7970)
CARNITINE PALMITOYLTRANSFERASE ACTIVITY, FATTY ACID OXIDATION, FETAL AND NEONATAL RAT (3206)
CASEIN, DIET, SELENIUM (3216)
CATABOLISM, HYDROCORTISONE (6432)•
CATALASE INDUCTION, HEMATIN, CX-REACTIVE PROTEIN RESPONSE (7957)
CATALASE, RHEUMATOLOGY, GOUT (1731)
CCL4, HEPATOTOXICITY, COLD ENVIRONMENT (8331)
CCL4, NICOTINAMIDE, CHOLINESTERASE (7917)•
CCL4, VITAMIN-PROTEIN PROFILE, NUCLEIC ACIDS (7112)•

CCL4-DAMAGED, FRUCTOSE PHOSPHATE ALDOLASE (3608)
CELL, AMYLOID, DUCK (5184)
CELL, CARCINOGEN, TUMOR (4367)•
CELL, CARCINOGENESIS, SPECIFIC GRAVITY (2093)
CELL, CHROMATIN, ETHIONINE (6345)
CELL, CHROMOTROPIC LIPIDIC GRANULATION (3858)
CELL, DNA, EMBRYO, CYTOPLASM, MOUSE (6312)
CELL, DUBIN-JOHNSON SYNDROME, PIGMENT (4646)
CELL, FINE STRUCTURE, KANECHLOR POISONING (4454)
CELL, GENES, RIBONUCLEIC ACID, RAT (1602)
CELL, GLYCOGEN, ELECTRON MICROSCOPY (3047)
CELL, LACTIC DEHYDROGENASE ISOENZYME (0728)•
CELL, LOW PRESSURE, FATTY ACID, METABOLISM (3045)
CELL, MITOCHONDRIA, INNER MATRIX, MONKEY (4705)•
CELL, MORPHOLOGY, ROTOR'S SYNDROME (2940)
CELL, NUCLEUS, MEMBRANE (4731)
CELL, PHOSPHOLIPID SYNTHESIS, RAT (4820)•
CELL, POISON, METABOLISM, MITOCHONDRIA (4154)
CELL, PORPHYRIA, ALLYLISOPROPYLACETAMIDE, RAT (6059)•
CELL, STRUCTURE, HYALOPLASM, PARACRYSTALLINE, MITOCHONDRIA, ULCER, GASTRIC (2815)
CELL, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE, NICOTINE (4782)
CELL, ULTRASTRUCTURE, MITOMYCIN C, RABBIT (4709)•
CELL, ULTRASTRUCTURE, ORAL CONTRACEPTIVES (8515)•
CELL, ULTRASTRUCTURE, STEROIDS, PREGNANCY, TROPHOBLASTIC GROWTHS (8514)•
CELL ALTERATIONS, LEAD POISONING, MAN (9103)
CELL CULTURES, AMINO ACID TRANSPORT, TYROSINE AMINOTRANSFERASE (7114)•
CELL DAMAGE, AUTO-ANTIBODY GEL PRECIPITATION TEST (4069)
CELL DAMAGE, HEPATIC STASIS, METHIONINE (4388)
CELL EXTRUSION, LYSOSOMES, ELECTRON MICROSCOPY (6834)•
CELL FRAGMENTS, E, HISTOLYTICA, MONOBACTERIAL CULTURES (0718)
CELL INFLAMATION, KUPFFER CELL HYPERPLASIA, JUVENILE RHEUMATOID ARTHRITIS (8267)•
CELL NUCLEI, RUBIDIUM METABOLISM, RAT (1761)
CELL NUCLEUS, ALANINE, PROTEIN, VITAMIN A, NACL (3178)
CELL POLYPLOIDY, SERUM FACTORS, INFLAMMATORY FACTORS, RAT (8520)
CELL PREPARATIONS, COMPARISON, METABOLIC ACTIVITIES, RAT (0041)•
CELL-FREE AMINOACYTLATION, NUCLEIC ACID SYNTHESIS (0135)
CELLULAR CARCINOMA, DNA-LIKE RNA, TEMPLATE (8265)•
CEREBRO-HEPATO-RENAL SYNDROME, ZELLWEGER'S SYNDROME (7566)
CERULOPLASMIN, COPPER, ACUTE CHOLECYSTITIS (2912)
CERULOPLASMIN, COPPER, METABOLISM (0156)
CHANG'S CELL, GLUTAMATE DEHYDROGENASE (2308)
CHANG'S LIVER CELL, METHIONINE, ORNITHINE ALPHA-AMINOTRANSFERASE (6431)•
CHEMICAL CARCINOGENESIS, PRECANCEROUS STAGE, MORPHOLOGY (8683)
CHLORINATED HYDROCARBON TOXICITY, TOTAL LIPID, TRIGLYCERIDES, ATP, MICE (0828)•
CHLOROQUINE, LYSOSOMES, CAT (0844)•
CHOLANGITIS, ICTERUS, ANEMIA (4919)
CHOLANGITIS, JAUNDICE (2048)
CHOLANGITIS, OBSTRUCTION, BILE DUCT (2924)
CHOLECYSTO-CHOLANGIOGRAPHY, SERUM TRANSAMINASE, CHRONIC HEPATITIS (6869)
CHOLEDOCHODUODENOSTOMY, CHOLECYSTODUODENOSTOMY, CHOLECYSTECTOMY, BILE DUCT (7670)
CHOLEDOCHUS, TUMOR, OBSTRUCTION (4421)
CHOLEPHILIC DYES, CLINICAL CHEMISTRY (1747)
CHOLERETIC, CIRRHOSIS, ALCOHOL (2139)
CHOLESTASIS, BILE DUCT, GALLBLADDER (4420)
CHOLESTASIS, CHLOROQUIN, HEPATITIS, PORPHYRINURIA (6841)
CHOLESTASIS, CYTOMEGALIC INCLUSIONS, JAUNDICE, HYPERLIPEMIA, NEONATE (5190)
CHOLESTASIS, HEPATITIS, CHOLESTEROL METABOLISM, RAT (8318)•
CHOLESTASIS, INTRAHEPATIC OBSTRUCTION (0555)
CHOLESTASIS, PROTEIN, PREGNANCY, ICTERUS (4426)
CHOLESTASIS, RECURRENT, PREGNANCY(4439)
CHOLESTASIS, 6-MERCAPTOPURINE (2186)
CHOLESTASIS, THERAPY (8289)
CHOLESTASIS, THIABENDAZOLE, GALLBLADDER (4428)
CHOLESTEROL, METABOLISM, ASCORBIC ACID (2439)
CHOLESTEROL, METABOLISM, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
CHOLESTEROL, METABOLISM, RAT (4856)
CHOLESTEROL BIOSYNTHESIS, 4,4-DIMETHYL STEROL OXIDATION, MICROSOMES (8649)
CHOLESTEROL BIOSYNTHESIS, IRRADIATION ADRENALECTOMY, HYPOPHYSECTOMY, PUROMYCIN (0827)•
CHOLESTEROL BIOSYNTHESIS, NEOMYCIN, MAN (7887)•
CHOLESTEROL ESTERIFICATION, ENZYMES, NUTRITIONAL STATE (0112)
CHOLESTEROL METABOLISM, HEPATECTOMY, RAT (7948)

CHOLESTEROL METABOLISM, PHENOBARBITAL (7932)
CHOLESTEROL SYNTHESIS, CARBOCHOLINE, ADRENALINE, RAT (5595)
CHOLESTEROL SYNTHESIS, DRUGS, RAT (6478)
CHOLESTEROL SYNTHESIS, FAMILIAL HYPERCHOLESTEROLEMIA, DIETARY EFFECT (0541)
CHOLESTEROL SYNTHESIS, SITES, MOUSE (5579)•
CHOLESTEROL SYNTHESIS, THIOLS (7141)•
CHOLESTEROLGENESIS, UBIQUINONE (3205)
CHOLINESTERASE, LIVER, CIRRHOSIS, CHOLELITHIASIS (6565)
CHROMATIN TEMPLATE, METHYLCHOLANTHRENE PHENOBARBITAL (8612)•
CHROMOSOMAL ABERRATIONS, FREE RADICAL REACTION INHIBITORS, MICE (3071)
CHRONIC, ACTIVE HEPATITIS, CIRRHOSIS, CORONOVIRUS, AUSTRALIAN-SH ANTIGEN (3642)•
CHRONIC ALCOHOL DISEASE, FATTY ACIDS (7634)•
CHRONIC ALTERATION, ETIOPATHOGENESIS (0596)
CHRONIC AMEBIC COLITIS, SYSTEMIC EFFECTS (7017)
CHRONIC DAMAGE, CIRRHOSIS, PATHOGENESIS (9149)
CHRONIC DISEASE, ARGININE AND ORNITHINE AMMONIA (7565)
CHRONIC DISEASE, BONE MARROW FUNCTION LEUCOCYTIC RESISTANCE (9156)
CHRONIC DISEASE, CANCER, HEPATITIS (6778)•
CHRONIC DISEASE, CIRRHOSIS, CHRONIC HEPATITIS, DIAGNOSIS, ALKALINE PHOSPHATASE (9045)
CHRONIC DISEASE, IMMUNOSUPPRESSIVE DRUG, ANTIVIRAL (2828)
CHRONIC DISEASE, IMMUNOTHERAPY (2854)
CHRONIC DISEASE, VITAMIN B12, E.K. TOTAL LIVER EXTRACT, TUBERCULOSIS (9066)
CHRONIC ENCEPHALOPATHY, LACTULOSE (6026)
CHRONIC ETHANOL, PYRIDINE NUCLEOTIDES (7971)
CHRONIC FAMILIAL JAUNDICE, DIAGNOSIS, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (6810)
CHRONIC HEPATIC ENCEPHALOMYELOPATHY, FOREARM METABOLISM (1451)
CHRONIC HEPATITIS, ACUTE HEPATITIS, ANTIGEN (2133)•
CHRONIC HEPATITIS, BETA-LA-GLOBULIN-(C'3), RHEUMATIC DISEASE, SCLERODERMA, DERMATOMYOSITIS (6105)
CHRONIC HEPATITIS, CIRRHOSIS, HEMODYNAMIC PARAMETERS (6108)
CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOSUPPRESSIVES, ACUTE INTOXICATION, VIRUS SPECIFIC ANTIBODY (5274)
CHRONIC HEPATITIS, CIRRHOSIS, PANCREATIC FUNCTION, PROSERINE TEST, DIASTATIC CURVE (6111)
CHRONIC HEPATITIS, FATTY LIVER, CIRRHOSIS, SERUM ALBUMIN, SERUM GLOBULIN, ELECTROPHORESIS (5212)
CHRONIC HEPATITIS, IMMUNOGLOBULINS, MITOCHONDRIA, CIRRHOSIS (5276)
CHRONIC HEPATITIS, IMMUNOLOGY, GAMMA GLOBULIN (6107)
CHRONIC INFLAMMATORY DISEASE, FATTY DEGENERATION, DRUG TREATMENT (0566)
CHRONIC PERSISTENT HEPATITIS, PROGNOSIS (2127)
CHRONIC VIRAL HEPATITIS, AUSTRALIAN (I) ANTIGEN (3641)•
CIRCULATION, DYE, CLEARANCE, BILIRUBIN RIFAMYCIN SV (6454)•
CIRCULATION, GLYCOGEN, BIOCHEMISTRY, HISTOCHEMISTRY, LOBE LIGATION, RAT (1600)
CIRCULATION, ISCHEMIA, CROSS TRANSFUSION, PORTAL VEIN OCCLUSION, HEPATIC ARTERY OCCLUSION, SMALL INTESTINE ISCHEMIA (5988)•
CIRCULATION, MEMBRANE TRANSPORT (6377)
CIRCULATION, NEWBORN, SURGERY, TRAUMA (2956)
CIRCULATION, OXYGEN SATURATION, SERUM ORNITHINE CARBOMYL TRANSFERASE (3695)•
CIRCULATION, PHOSPHORYLASE, LOBE LIGATION, RAT (1599)
CIRCULATION, PORTACAVAL SHUNT, PORTAL HYPERTENSION (1450)
CIRCULATION, PORTAL HYPERTENSION, ARTERIOGRAPHY (6544)
CIRCULATION, PORTAL-SYSTEMIC SHUNT (6788)
CIRCULATION, SURGERY (1792)
CIRCULATION, SURGERY, PORTAL HYPERTENSION, CIRRHOSIS (1449)
CIRCULATION, VASOCONSTRICTORS (6804)
CIRCULATION, XENON 133 CLEARANCE (8745)
CIRRHOSIS, ACID-BASE BALANCE, PERFUSION (2136)
CIRRHOSIS, ACUTE VIRAL HEPATITIS, CARCINOMA, AFRICA (6027)
CIRRHOSIS, ADRENAL GLANDS, HISTOCHEMISTRY (7647)
CIRRHOSIS, ALBUMIN, BILIRUBIN, ASCITES PROGNOSIS (6899)
CIRRHOSIS, ALBUMIN METABOLISM (6902)
CIRRHOSIS, ALCOHOL DEHYDROGENASE, ZINC, COPPER, MANGANESE, SELENIUM, CADMIUM, WILSON'S DISEASE (6002)
CIRRHOSIS, ALCOHOLISM, PROTEIN MALNUTRITION (7637)
CIRRHOSIS, ANASTOMOSIS, VENOUS AND LYMPH CIRCULATION (1445)
CIRRHOSIS, ANATOMY, DIAGNOSIS (2140)
CIRRHOSIS, ANTIBIOTIC TREATMENT, AMMONIEMIA (9165)
CIRRHOSIS, ARTERIAL DESATURATION (2146)
CIRRHOSIS, ASCITES, CORTICOIDS, ALCOHOLIC ABSTINENCE (6885)
CIRRHOSIS, ASCITES, EDEMA, COMPARTMENTALIZATION (6123)
CIRRHOSIS, ASCITES, MANAGEMENT (8647)
CIRRHOSIS, ASCITES, PEPTIC ULCER, PREDNISONE (6900)

CIRRHOSIS, ASCITES, SURGERY (2896)
CIRRHOSIS, ASCITIC, EDEMA, CONTROL, ALCOHOLIC (4524)
CIRRHOSIS, AZATHIOPRINE, THERAPY (6881)*
CIRRHOSIS, BLOOD CLOTTING FACTORS, PARENCHYMAL DAMAGE (8389)
CIRRHOSIS, BLOOD COAGULATION, TEST (2895)
CIRRHOSIS, BLOOD GROUP, ALCOHOL (6890)
CIRRHOSIS, BLOOD PROTEINS, BONE MARROW (7641)
CIRRHOSIS, BLOOD VOLUME, PORTAL PRESSURE, VENOUS PRESSURE (5632)*
CIRRHOSIS, BREATH, VOLATILE, FATTY ACID (5280)*
CIRRHOSIS, CANCER, JAUNDICE (0197)*
CIRRHOSIS, CARBON TETRACHLORIDE, AGE FACTOR, 3-METHYLCHOLANTHRENE, RATS (5277)*
CIRRHOSIS, CHRONIC, TREATMENT, HEPATITIS (2124)*
CIRRHOSIS, CHRONIC HEPATIC ENCEPHALOMYELOPATHY, FOREARM METABOLISM (1451)
CIRRHOSIS, CHRONIC HEPATITIS, ACUTE HEPATITIS, BILIRUBIN FRACTIONS (7627)
CIRRHOSIS, CHRONIC HEPATITIS, ADRENAL CORTEX FUNCTION (7625)
CIRRHOSIS, CHRONIC HEPATITIS, DUODENAL MUCOSA (7628)
CIRRHOSIS, CHRONIC HEPATITIS, LYMPHOCYTES, BLASTOID CELL TRANSFORMATION (7624)*
CIRRHOSIS, CHRONIC HEPATITIS, MECHANISMS, PORTAL HYPERTENSION (2242)
CIRRHOSIS, CHRONIC HEPATITIS, SERUM COMPLEMENT (9044)
CIRRHOSIS, CHRONIC HEPATITIS, SULFOBROMOPHTHALEIN TEST (7260)
CIRRHOSIS, CHRONIC HEPATITIS, VEGETATIVE NERVOUS SYSTEM SURGERY, CHILDREN (8365)
CIRRHOSIS, CHRONIC HEPATOPORTAL ENCEPHALOPATHY, LACTULOSE (7631)*
CIRRHOSIS, CIRCULATION, PORTACAVAL SHUNT, PORTAL HYPERTENSION (1450)
CIRRHOSIS, CIRCULATION, SURGERY, PORTAL HYPERTENSION (1449)
CIRRHOSIS, COMA, ASCITES, DIURETICS (6901)
CIRRHOSIS, COMA, INSULIN RESPONSE, GLUCOSE TOLERANCE (6882)*
CIRRHOSIS, (COMPENSATED), INDOCYANINE-GREEN TEST (8016)
CIRRHOSIS, CORTICOSTEROIDS, METABOLISM (2148)
CIRRHOSIS, CYTOCHEMISTRY, CHILDREN (8388)
CIRRHOSIS, DECOMPENSATION, LIFE EXPECTANCY (7633)*
CIRRHOSIS, DIABETES MELLITUS, ALCOHOL, CC14 (8316)*
CIRRHOSIS, DIAGNOSIS, SELENIUM 75-METHIONINE (8706)*
CIRRHOSIS, DIAGNOSTIC ERRORS (0201)
CIRRHOSIS, DIMETHYLSULFIDE, MERCAPTONS, METHIONINE (5281)*
CIRRHOSIS, DOPAMINE, RENAL FUNCTION (3651)*
CIRRHOSIS, ELECTROLYTE, ALTERATION (2147)
CIRRHOSIS, ENCEPHALOPATHY, LACTULOSE THERAPY (9166)
CIRRHOSIS, ENTEROHEPATIC CIRCULATION, ERYTHROCYTES (8394)
CIRRHOSIS, ENZYME, PROTEIN (4519)
CIRRHOSIS, EPIDEMIOLOGY, ETIOLOGY (8377)
CIRRHOSIS, ERYTHROCYTE, LYMPHATICS (2143)
CIRRHOSIS, ESOPHAGEAL VARICES, SELECTIVE DECOMPRESSION, LEFT GASTRIC VENOCAVAL SHUNT (2132)*
CIRRHOSIS, ESOPHAGUS, VARICES (4518)
CIRRHOSIS, ESTROGEN METABOLISM, CHROMATOGRAPHY, MAN (2160)
CIRRHOSIS, ETHANOL (2365)
CIRRHOSIS, ETIOLOGY (2157)
CIRRHOSIS, ETIOLOGY, CHOLECYSTOLITHIASIS, ALCOHOLISM (0334)
CIRRHOSIS, ETIOLOGY, HISTOLOGY (8384)
CIRRHOSIS, EXERCISE, FIBRINOLYSIS (0638)*
CIRRHOSIS, FAMILIAL, IMMUNOGLOBULIN, AUTOIMMUNE FEATURES (9150)*
CIRRHOSIS, FATTY ACID, ALCOHOLISM (3650)*
CIRRHOSIS, FREE PORTAL VENOUS PRESSURE WEDGED HEPATIC (8371)*
CIRRHOSIS, GERIATRICS (6905)
CIRRHOSIS, GLYCOGENOSIS, DIFFERENTIAL DIAGNOSIS (8753)
CIRRHOSIS, HEART DISEASE (7649)
CIRRHOSIS, HEMOCHROMATOSIS, WILSON'S DISEASE, BSP RETENTION (3545)*
CIRRHOSIS, HEMODYNAMICS, MAN (0643)
CIRRHOSIS, HEMODYNAMICS, SPLENECTOMY, POSTCAVAL ANASTOMOSIS (1448)
CIRRHOSIS, HEMORRHAGE, GASTRIC, DUODENAL (6889)
CIRRHOSIS, HEMORRHAGE, SURGERY (6909)
CIRRHOSIS, HEMORRHAGE, TREATMENT (8379)
CIRRHOSIS, HEPATIC MYELOPATHY, ANATOMOPATHOLOGY (8380)
CIRRHOSIS, HEPATITIS (0184)*
CIRRHOSIS, HEPATITIS, ALBUMIN, GASTROENTERIC CLEARANCE (6112)*
CIRRHOSIS, HEPATITIS, CHRONIC, ACUTE VIRAL (7630)
CIRRHOSIS, HEPATITIS, CHRONIC, PROTEIN-FREE LIVER EXTRACT, TREATMENT (2126)
CIRRHOSIS, HEPATITIS, CHRONIC, ULCERATION, GASTRIC, DUODENAL (0351)
CIRRHOSIS, HEPATITIS, ENZYMES (0574)
CIRRHOSIS, HEPATITIS, HEMATOGENIC ETIOLOGY (6886)
CIRRHOSIS, HEPATITIS, MUCOPOLYSACCHARIDES, CATABOLISM (0562)
CIRRHOSIS, HEPATITIS, SCINTIGRAPHY VS RADIOACTIVE IODINE TEST (2515)
CIRRHOSIS, HEPATITIS, SGOT, SGPT (0663)
CIRRHOSIS, HEPATOTOXIN, METABOLISM, ALCOHOL (0869)

CIRRHOSIS, HISTOLOGY, AUTORADIOGRAPHY, RAT (8376)*
CIRRHOSIS, HISTOLOGY, PATHOLOGY, CHILD (0635)*
CIRRHOSIS, HISTOPATHOLOGY, CLASSIFICATION, LEBANON (0647)
CIRRHOSIS, HYPERSPLENOMEGALY, DIFFUSE HEMORRHAGE (2142)
CIRRHOSIS, IMMUNOLOGY (6877)*
CIRRHOSIS, INDIAN CHILDHOOD, DERMATOGLYPHICS (2154)
CIRRHOSIS, INDIAN CHILDHOOD, HEPATITIS ANTIGEN, SERUM IMMUNOGLOBULINS (3648)*
CIRRHOSIS, INDIAN CHILDREN, DISACCHARIDE INTOLERANCE, MALTOSURIA (1442)*
CIRRHOSIS, INFANTILE, SERUM TRANSAMINASE (2901)
CIRRHOSIS, INFANTILE, TUBULAR STRUCTURES (0650)
CIRRHOSIS, INTESTINAL ABSORPTION, AMMONIUM CHLORIDE (9162)
CIRRHOSIS, KALA-AZAR INFECTION (8492)
CIRRHOSIS, LAENNEC'S, HYPERPROTEINEMIA, MICROGLOBULINEMIA, IMMUNOELECTROPHORESIS, PARAPROTEINS (5287)
CIRRHOSIS, LAENNEC'S, PORTAL HYPERTENSION, PORTAL VEIN THROMBOSIS (2137)
CIRRHOSIS, LATENT, DIAGNOSIS, SYMPTOMOLOGY (2144)
CIRRHOSIS, LIFE-THREATENING (3655)
CIRRHOSIS, LIPIDS, FATTY ACIDS, COAGULATION (5291)
CIRRHOSIS, MALNUTRITION, SURGERY, MALARIA (6887)
CIRRHOSIS, METABOLISM, HIGH SUGAR DIET (2149)
CIRRHOSIS, METABOLISM, JAUNDICE, HEPATOMEGALY (6880)*
CIRRHOSIS, METABOLISM, WATER, ELECTROLYTE (7646)
CIRRHOSIS, METHOTREXATE, PSORIASIS (0639)
CIRRHOSIS, MICROSOMAL DETOXICATION, CYTOCHROME (2135)
CIRRHOSIS, MUCOVISCIDOSIS (0523)
CIRRHOSIS, NEEDLE BIOPSY, DIAGNOSIS (0967)
CIRRHOSIS, OBESITY, ALCOHOLISM, ALKALINE PHOSPHATASE, PROGNOSIS (6888)
CIRRHOSIS, ORNITHINE-ASPARTATE TREATMENT, BLOOD AMMONIA LEVEL (8390)
CIRRHOSIS, OXYHEMOGLOBIN, DISSOCIATION CURVE, CIRCULATION (6903)
CIRRHOSIS, PARENCHYMA CELLS, INTRANODULAR STRUCTURES, HISTOMETRICAL ANALYSIS (6116)*
CIRRHOSIS, PARTIAL HEPATECTOMY, HUMAN (9161)
CIRRHOSIS, PATHOLOGY, ANATOMY, MAN (0649)
CIRRHOSIS, PATHOLOGY, BIOCHEMISTRY, HEPATIC INSUFFICIENCY (8393)
CIRRHOSIS, PATHOLOGY, IMMUNOLOGY (8386)
CIRRHOSIS, PITUITARY AND ADRENAL FUNCTION, PLASMA, CORTISOL BREAKDOWN (9160)
CIRRHOSIS, PLASMA ANTI-ANGIOTENSIN ACTIVITY, PROTEIN DEFICIENCY (6896)
CIRRHOSIS, PLASMA ESTROGENS, ESTROGEN METABOLISM (8383)
CIRRHOSIS, PLATELETS, INFANT (6908)
CIRRHOSIS, PORTACAVAL SHUNT (5282)*, (5297)
CIRRHOSIS, PORTACAVAL SHUNT, CEREBRAL BLOOD FLOW, METABOLISM (1665)
CIRRHOSIS, PORTACAVAL SHUNT, CIRCULATORY COMPLICATIONS (9085)
CIRRHOSIS, PORTACAVAL SHUNT, ESOPHAGUS, BLEEDING VARICES (6113)*
CIRRHOSIS, PORTACAVAL SHUNT VS. MEDICAL TREATMENT, BLEEDING, ENCEPHALOPATHY (1441)*
CIRRHOSIS, PORTAL (2159)
CIRRHOSIS, PORTAL CIRCULATION, HEMORRHAGE, PROGNOSIS, PORTACAVAL ANASTOMOSIS (4940)
CIRRHOSIS, PORTAL CIRCULATION TIME, XENON-133 (0191)*
CIRRHOSIS, PORTAL HYPERTENSION, COAGULATION, FIBRINOLYSIS (0641)
CIRRHOSIS, PORTAL HYPERTENSION, ILEAL VARICES, HEMORRHAGE (9155)
CIRRHOSIS, PORTAL HYPERTENSION, PORTOSYSTEMIC SHUNT (6128)
CIRRHOSIS, PORTAL HYPERTENSION, PULMONARY CIRCULATION (6875)*
CIRRHOSIS, PORTAL HYPERTENSION, RENAL FAILURE (6898)
CIRRHOSIS, PORTAL HYPERTENSION, TREATMENT (2803)*
CIRRHOSIS, POSTNECROTIC, VIRAL HEPATITIS (1429)
CIRRHOSIS, PRIMARY BILIARY (0654)
CIRRHOSIS, PRIMARY BILIARY, INTRAHEPATIC BILE DUCTS (0652)
CIRRHOSIS, PRIMARY CARCINOMA, LAPAROSCOPY, AUTOPSY (7538)*
CIRRHOSIS, PRIMARY CARCINOMA, SURGERY (9151)*
CIRRHOSIS, PRIMARY HEPATIC CARCINOMA, HISTOPATHOLOGY (7524)*
CIRRHOSIS, PROGNOSIS, THERAPY (9163)
CIRRHOSIS, PROTEIN DEFICIENCY, ALBUMIN THERAPY (7650)
CIRRHOSIS, PROTEIN-DROPLET, VACUOLES, ULTRASTRUCTURE (2893)*
CIRRHOSIS, RADIOISOTOPIC DIAGNOSIS, BLOOD FLOW, FUNCTION TESTS (0211)
CIRRHOSIS, RENAL FAILURE, HEPATIC COMA (6891)
CIRRHOSIS, RENAL DISEASE, HYPERAMMONIEMIA, HYPONATREMIA, RESPIRATORY ALKALOSIS (5292)
CIRRHOSIS, RENAL FAILURE (2150)
CIRRHOSIS, RENAL LESIONS, ADOLESCENTS (4516)
CIRRHOSIS, RETICULAR TISSUE (7640)
CIRRHOSIS, RIGHT-SIDED HYDROTHORAX, PATHOGENESIS (9167)
CIRRHOSIS, SERUM PROTEINS, BIDIMENSIONAL ELECTROPHORESIS (9169)

CIRRHOSIS, SIDEROSIS, COLLATERAL CIRCULATION, AFRICANS (0636)*
CIRRHOSIS, SMOOTH SURFACE (7642)
CIRRHOSIS, SPENOMEGALY, THROMBOCYTOPENIA (6883)
CIRRHOSIS, SPLEEN, BLOCKAGE, RABBIT (0645)
CIRRHOSIS, SPLENOMEGALY, BLEEDING ESOPHAGEAL VARICES (3656)
CIRRHOSIS, SURGERY, PATHOLOGY, CIRCULATION, SPLENORENAL SHUNT (1443)*
CIRRHOSIS, SURGERY, SODIUM, POTASSIUM (7645)
CIRRHOSIS, SYMPTOMATOLOGY, THERAPY (8392)
CIRRHOSIS, SYPHILIS (2155)
CIRRHOSIS, SYPHILIS, ASSOCIATION (0642)
CIRRHOSIS, THYROXINE, ALPHA-GLOBULINE (3658)
CIRRHOSIS, TRANSFUSIONAL SIDEROSIS, PANCREATIC FIBROSIS (0634)*
CIRRHOSIS, TREATMENT, TOLBUTAMIDE (1438)*
CIRRHOSIS, UMBILICAL VEIN CATHETERIZATION, HEPATOPORTOGRAPHY, EARLY (1589)
CIRRHOSIS, UMBILICAL VEIN CATHETERIZATION, PERITONEOTOMY (8385)
CIRRHOSIS, VIRAL HEPATITIS, SERUM LIPOPROTEINS (8266)*
CIRRHOSIS, ZIEVE'S SYNDROME (0644), (2902)
CIRRHOSIS, ZINC, COLLAGEN (8369)*
CITRATE TRANSPORT, FATTY ACID SYNTHESIS, ADIPOSE TISSUE (7106)*
CLEARANCE, MILK, BILE FORMATION, MAN, NORMAL, CIRRHOSIS (3875)
CLEARANCE, MILK, RADIOACTIVE GOLD-FIXATION, ABSORPTION (6371)
COENZYME, DIPHOSPHOPYRIDINE NUCLEOTIDE (1726)
COENZYME, FOLATE, SYNTHESIS, THYROXINE, RAT (2426)
COLLAGEN, CARBON TETRACHLORIDE, POISONING (6448)*
COLLAGEN ACTIVITY (3829)
COLLAGENOLYTIC ACTIVITY, CARBON TETRACHLORIDE POISONING, RATS (1750)
COLLAGENOLYTIC ACTIVITY, RAT (5597)
COMA, ACUTE VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (7613)
COMA, AMMONEMIA, HEMODYNAMICS, HETEROLOGOUS PERFUSION, BLOOD PLATELETS (5215)
COMA, CIRRHOSIS, HEPATITIS, DIABETES MELLITUS (6886)
COMA, EDEMA, UREMIA, ELECTROLYTE DISTURBANCE (6799)
COMA, ETIOLOGY, VIRAL HEPATITIS (9053)
COMA, EXCHANGE TRANSFUSION, CHILD (0548)
COMA, HEPATITIS (4417)
COMA, INSULIN, GLUCOSE TOLERANCE (6882)*
COMA, PERFUSION (2503)*
COMA, PREGNANCY, EXCHANGE TRANSFUSION (0542)
COMA, THERAPY (0564)
COMA, TREATMENT, ETIOLOGY (1384)
COMA, TREATMENT, EXCHANGE TRANSFUSION, METABOLIC DISTRUBANCES (6799)
COMA, URETEROSIGMOIDOSTOMY, CIRRHOSIS (6954)
COMA, VIRAL HEPATITIS, NEUROLOGICAL SEQUELAE (8340)*
COMMERCIAL PREPARATIONS, BIOLOGICAL EVALUATIONS (0559)
COMMON ARTERY, STENOSIS, MUSCULAR HYPERPLASIA (9223)
COMPUTER PROGRAM, DIFFERENTIAL DIAGNOSIS (2039)*
CONCREMENT, BILE DUCT, RUTIN, INFLAMMATION, SIDE EFFECT (5228)
CONGENITAL FIBROSIS, POLYCYSTIC DISEASE, ESOPHAGEAL HEMORRHAGE (0266)
CONGENITAL FIBROSIS, TUBULAR ECTASIA, RENAL LESION, PYELITIS, UROGRAPHY, BIOPSY (5187)
CONGENITAL HEART DISEASE, INFANTILE COARCTATION (4363)*
CONGENITAL NONOBSTRUCTIVE NONHEMOLYTIC JAUNDICE, PHOTOTHERAPY, INFANT (2038)*
CONSTITUENT FORMATION, CELLULAR DIFFERENTIATION (0094)*
CONTRAST MEDIUM, STORAGE, LYMPHOGRAPHY, LYMPH CIRCULATION, HEPATOGRAPHY (2818)
COPPER, RESPIRATION, RABBIT (0900)
COPROPORPHYRIA, ENZYMES, MAN (1351)*
CORTICOSTERONE, BINDING (6298)*
CRIGLER-NAJJAR DISEASE, CLINICAL PICTURE (3574)
CROSS CIRCULATION, HEPATIC ASSISTANCE (0622)
CRYOSURGERY, PARENCHYMAL BLEEDING, ELECTROCOAGULATION (0529)*
CYCLOPHOSPHAMIDE ACTIVATION, EHRLICH CARCINOMA, YOSHIDA SARCOMA (7177)
CYST, ASCITES, DIAGNOSIS, ULTRASOUND (1811)*
CYST, ECCHINOCOCCUS, DIAGNOSIS, LIVER SCAN (4887)*
CYSTATHIONINE SYNTHASE, PYRIDOXINE EFFECT, RAT (6484)
CYSTIC CHOLANGIOMA, ANGIOGRAPHY, SCINTOGRAPHY (6798)
CYTIDINE TRIPHOSPHATE SYNTHETASE, PURIFICATION, PROPERTIES (5464)
CYTOCHROME P-450, DRUGS, TESTOSTERONE, FATTY ACIDS (5566)*
CYTOLYSIS SYNDROME, CIRRHOSIS, CHILDREN, CHRONIC HEPATITIS (6001)
CYTOPHOTOMETRY, NUCLEAR DNA, ACRIDINORANGE, PROTEIN BIOSYNTHESIS, GUINEA PIG, AGE DIFFERENCE, FLUORESCENT EMISSION, DNA-PO4-GROUP (4715)
CYTOPLASM, METABOLISM (3048)
CYTOPLASM, NADP-DEPENDENT ISOCITRATE DEHYDROGENASE, PIG (6335)
CYTOPLASM, NUCLEOTIDE, REDOX STATE (1879)
CYTOPLASM, PROTEIN, HEMOGLOBIN SYNTHESIS, RABBIT (7800)

CYTOPLASM, RAT, ENZYME ISOLATION (2301)
CYTOPLASM, REDOX STATE, NUCLEOTIDE DIAGNOSIS (2158)
CYTOPLASM, 17-HYROXYSTEROID, NAD (P) OXIDOREDUCTASE (7820)
CYTOPLASMIC ADENINE NUCLEOTIDE SYSTEM, NICOTINAMIDE-ADENINE NUCLEOTIDE SYSTEM, EQUILIBRIUM, ATP, ADP, RAT (4733)
CYTOSOL, DIMETHYLAMINOAZOBENZENE BINDING PROTEIN, CORTISOL METABOLITE BINDER I (3070)
DAMAGE, ALCOHOL, GASTRECTOMY (4459)
DAMAGE, BILIRUBIN GLUCURONIDE (1744)
DAMAGE, CARBON TETRACHLORIDE, PATHOOLOGY, CIRCULATION, DRUG EFFECTS (0100)*
DAMAGE, CARBON TETRACHLORIDE, TRIGLYCERIDE, FAT MOBILIZATION, RAT (0123)
DAMAGE, CARBON TETRACHLORIDE POISONING, MAN (8335)
DAMAGE, CIRRHOSIS, METHOTREXATE, PSORIASIS (0640)
DAMAGE, DRUG INDUCED, CHLOROFORM, MERCURY, GOLD (9100)
DAMAGE, ENDOCRINE CONTRACEPTIVES, THERAPY (9109)
DAMAGE, ENZYME, HEART SURGERY (4070)
DAMAGE, EPIDERMOLYSIS ACUTA TOXICA, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (9098)
DAMAGE, HALOTHANE, SURGERY (3593)*
DAMAGE, TRICHLOROETHYLENE, LOBULE HISTOLOGY (8334)
DAMAGE, VITAMIN, CARBON TETRACHLORIDE, PROTECTION, RAT, ENZYME, MITOCHONDRIA (2822)
DARK CELL, MICROSCOPY (8522)
DEHYDROGENASE, ASSAY (4737)
DEHYDROGENASE, METABOLISM, HUMAN (4857)
DELTA-AMINOLEVULINIC ACID SYNTHETASE ACTIVITY, SEMIMICROASSAY METHOD (1601)
DELTA-AMINOLEVULINIC ACID SYNTHETASE, GLUCAGON, CHICK EMBRYO (2287)*
DERMOID CYST, RADIOGRAPHY (6030)
DETOXIFICATION, AMINO ACID (3609)
DETOXICATION, IRRADIATION, GLUCURONIC ACID, RABBIT, GLUCURONIDE CLEARANCE, N-ACETYL-PARAAMINOPHENOL (6053)
DETOXIFICATION, ULCERATIVE COLITIS, OIA TEST, GLUCURONYLTRANSFERASE, TRANSAMINASE (5122)
DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, CIRRHOSIS (9040)*
DETOXIFICATION FUNCTION, GLUCURONIDE FORMATION, RADIOISOTOPIC MEASUREMENT (8784)
DEVELOPMENT, ENZYME, DEGRADATION, SYNTHESIS (0892)
DIABETES, ULTRASTRUCTURE, RETICULOENDOTHELIAL CELL (1574)*
DIABETIC CHINESE HAMSTER, GLUCONEOGENIC ENZYMES (8279)
DIACETAMIDOFLUORENE, CARCINOGENESIS, RESERPINE INHIBITION, MOUSE (8305)
DIAGNOSIS, ENZYMOLOGY, BILIARY TRACT (7247)
DIAGNOSIS, PATHOLOGY, BLOOD AMMONIA LEVELS (8724)
DIAGNOSIS, RADIOLOGY, CANCER, METASTESES, VENOGRAPHY, CIRCULATION (2509)*
DIAGNOSIS, SCANS, PROGNOSIS, THERAPY EVALUATION (1805)*
DIAGNOSIS, SPLEEN, RUPTURE (2088)
DIAGNOSTIC PROCEDURE, LIVER ENZYME, D-GALACTOSAMINE (2859)*
DIAGNOSTIC PROCEDURE, LIVER SCAN, LIVER, DISEASE, HEPATOMA, CIRRHOSIS, ENLARGED SPLEEN (2806)*
DIAGNOSTIC PROCEDURE, ROSE BENGAL EXCRETION (8049)
DIETARY TRIGLYCERIDE, CPIB, DIETARY CHOLESTEROL, SERUM LIPIDS (2407)*
DIFFERENTIAL DIAGNOSIS, COMPUTER PROGRAM (2039)*
DIFFERENTIAL DIAGNOSIS, LIVER SCAN, PERITONEOSCOPY, SPACE-OCCUPYING LESION, HEPATIC TUMOR (5659)*
DIFFERENTIATION, FUNCTIONAL DEVELOPMENT, HISTOCHEMISTRY (0021)
DIHYDROURACIL DEHYDROGENASE (7812)
DIMETHYLATION, HYDROXYLATION, N-OXIDATION, IMIPRAMINE (7118)*
DISEASE, ACUTE, CHRONIC, AUSTRALIA ANTIGEN, CIRRHOSIS, HEPATITIS (6050)
DISEASE, ACUTE VENOUS OCCLUSION, BIOPSY, ULTRASTRUCTURE, PATHOLOGY (5168)*
DISEASE, ACUTE VIRAL HEPATITIS, SERUM GUANASE, SGPT, DIAGNOSIS (5686)
DISEASE, ARGININE, MALIC ACID, ACUTE VIRAL HEPATITIS, CIRRHOSIS (6044)
DISEASE, AUSTRALIA SH ANTIGEN (2882)
DISEASE, BILIRUBIN GLUCURONIDE, BILE FRACTION (2184)
DISEASE, BSP, COLLOIDAL GOLD (7218)*
DISEASE, CARCINOMA, ALPHA 1 - FETOPROTEIN (1350)*
DISEASE, CELLULAR IMMUNITY, ANTIGEN STIMULATION OF LYMPHOCYTES, IN VITRO (9065)
DISEASE, CHRONIC, ACUTE VIRAL HEPATITIS (6098)
DISEASE, CHRONIC, AUSTRALIA ANTIGEN, DRUG ADDICTS, DENMARK (6101)
DISEASE, CHRONIC, DIAGNOSIS, CAUSES (0557)
DISEASE, CHRONIC, MALABSORPTION SYNDROME, ALBUMIN METABOLISM, ACUTE HEPATITIS (6199)
DISEASE, CHRONIC CYBERNETICS, BIOCHEMISTRY (1370)
DISEASE, CIRRHOSIS, HEPATITIS, IMPAIRMENT, DIABETES MELLITUS (2042)
DISEASE, CIRRHOSIS, VIRAL HEPATITIS, LITHIASIS, BILE SECRETIN, VEDRENAN (5172)
DISEASE, CLINICAL, CHEMICAL DATA, DIFFERENTIAL DIAGNOSIS (8780)
DISEASE, COMPUTER DIAGNOSIS (2855)
DISEASE, DIETARY DEFICIENCY, THERAPY (2840)
DISEASE, DISTURBED HAIR GROWTH (0531)*

DISEASE, ENZYME, DIAGNOSIS, PROGNOSIS (2138)
DISEASE, ENZYME, SERUM (1434)
DISEASE, ENZYME DIAGNOSIS (2080)
DISEASE, ENZYME RELEASE, DIAGNOSIS (7550)
DISEASE, GEOGRAPHY (0549)
DISEASE, HEPATITIS-INFECTIOUS MONONUCLEOSIS TEST, AUSTRALIA ANTIGEN TEST (8767)
DISEASE, IMMUNOGLOBULINS, DIFFERENTIAL DIAGNOSIS (8779)
DISEASE, NUTRITION, NEONATE, CHILDREN (5996)
DISEASE, SOCIAL IMPACT (1420)
DISEASE, SOCIO-ECONOMIC PROBLEM, TRAINED PERSONNEL LACK (1420)
DISEASE, SURFACE CELLS, ENDOSCOPY (0190)*
DISEASE, THERAPY DRUG COMBINATION (5984)*
DISEASE, TRANSAMINASE, EXERCISE, LIVER CELL PERMEABILITY, CHRONIC HEPATITIS, SUBSIDING HEPATITIS, FATTY LIVER (4937)
DISEASE, TYPE III GLYCOGENOSIS, ULTRASTRUCTURE, GLYCOGEN DEPOSITS, SKELETAL MUSCLE (5986)*
DISEASE, ULCERATIVE COLITIS (6736)
DISEASE, VASCULAR RADIOLOGY (7272)
DISEASE PLASMINOGEN (1392)*
DISORDER, IRON METABOLISM (3587)
DISTOMATOSIS, CAPSULITIS, BIOPSY, LAPAROSCOPY (4908)
DISTOMATOSIS, IMMUNOFLUORESCENCE, FASCIOLA HEPATICA, COMPLEMENT FIXATION, LAPAROSCOPY (4907)
DISULFIRAM, METABOLISM, RAT (0860)
DNA, CARCINOGEN, BINDING, GLUCURONIDE CONJUGATE, RAT (0107)
DNA, RAT HEPATECTOMY, REGENERATION (2468)
DNA, RNA, PROTEIN, METABOLISM (3948)*
DNA, RNA, 7,12-DMBA, BENZOPYRENE (7563)
DNA, SYNTHESIS, RAT (7145)*
DNA SYNTHESIS, TRITIATED THYMIDINE INCORPORATION, STARVATION (3946)*
DNA TRANSCRIPTION, RNA SYNTHESIS, TEMPLATE, RIBONUCLEASE INHIBITOR, LIVER SUPERNATANT (4697)*
DOLICHOL SYNTHESIS, STEREOCHEMISTRY (6476)
DOPA, HOMOGENATE, DECARBOXYLASE (7115)*
DPN-LINKED GLYCEROL 3-PHOSPHATE DEHYDROGENASE, PURIFICATION, PROPERTIES, CHICKEN (0131)
DRUG METABOLISM, ADJUVANT-INDUCED ARTHRITIS, RAT (3210)
DRUG METABOLISM, ADRENALECTOMY, ENZYME ACTIVITY (1773)
DRUG METABOLISM, ADVERSE REACTIONS (3966)
DRUG METABOLISM, ALPHA-IRRADIATION, MOUSE (7003)
DRUG METABOLISM, BILIARY EXCRETION, HYPOTHERMIA, RAT (0110)
DRUG METABOLISM, DIETARY THIAMINE, LINOLEATE (0895)
DRUG METABOLISM, DRUG EFFECT, FETUS, NEWBORN, RAT (3208)
DRUG METABOLISM, HORMONE CONTROL (2402)*
DRUG METABOLISM, IN VITRO, ZINC DEFICIENCY (5583)*
DRUG METABOLISM, METHYLCHOLANTHRENE DERIVATIVES, RAT (7943)
DRUG METABOLISM, MICROSOMAL ENZYMES, DMSO EFFECT (5581)*
DRUG METABOLISM, PHENOBARBITAL, MALARIA (6270)
DRUG METABOLISM, RAT (2540)
DRUG METABOLISM, REDUCTASE, METYRAPONE, MICROSOME (4839)*
DRUG METABOLIZING, ENZYME, EMETINE, 2, 3-DEHYDROEMETINE (4708)*
DUBIN JOHNSON, INDOCYANINE GREEN, BSP RETENTION (2082)
DUBIN JOHNSON SYNDROME, SULFOBROMOPHTHALEIN EXCRETION PATTERN (2061)
DYSFUNCTION, ACUTE ENCEPHALOPATHY, VARICELLA, CHILDREN (2066)
DYSFUNCTION, ANTIBIOTICS, ABSORPTION METABOLISM, (0582)*
LIVER - CONTINUED
ECHINOCOCCOSIS, DIAGNOSIS, CALCIFICATION (6271)
ECHINOCOCCOSIS, ENLARGEMENT, SURGERY (4666)
ECHINOCOCCOSIS, RADIOISOTOPE SCANNING (7235)
ECHINOCOCCOSIS, RADIOLOGY, RADIOISOTOPE (8013)
ECHINOCOCCOSIS, TUMORS, BILE DUCT STASIS, METASTASES, SURGERY (5407)
ECHINOCOCCUS, SURGERY (4679)
EDTA-MED, PANCREAS, BLOOD SUGAR, BIOMETALS (5641)
ELECTRICAL POTENTIAL CHANGES, ACUTE SURGICAL CONDITIONS, RABBITS (0816)*
ELECTROLYTES, POTASSIUM CONCENTRATION, METABOLISM (1740)
ELECTRON MICROSCOPY, LYNESTRENOL (4468)
ELECTRON TRANSPORT SYSTEM, CYTOCHROME B5, MICROSOMES, GOLGI MEMBRANE (6300)*
ELECTROPHORESIS, IRON, FERRITINS (3222)
EMBRYO, TYROSINE AMINOTRANSFERASE, ALPHA-KETO ACID (5800)
EMBRYONIC, CHOLINESTERASE, ENDOTHELIAL CELLS, LIVER MESODERM, CHICK (4736)
ENCEPHALOPATHY, AMMONIA (6029)
ENCEPHALOPATHY, EEG, CIRRHOSIS (6803)
ENCEPHALOPATHY, OXYGEN UPTAKE, POTASSIUM, RAT BRAIN, ALKALOSIS (0858)
ENCEPHALOPATHY, PORTACAVAL SHUNT, PROPHYLAXIS, ALCOHOLISM (6233)
ENCEPHALOPATHY, SURGERY (6897)
ENDOPLASMIC RETICULUM, ELECTRON MICROSCOPY, PATHOLOGY (3596)
ENDOGENOUS ETHANOL, ALCOHOL DEHYDROGENASE (7903)*
ENDOTOXIN SHOCK, E. COLI, CIRCULATION, LDH ISOENZYMES, SGOT, SGPT, ALKALINE

PHOSPHATASE, DETOXIFICATION (3551)•
ENTEROHEPATIC CIRCULATION, SALMONELLOSIS, TYPHOID FEVER, ANTIBIOTIC (1972)•
ENTEROHEPATIC CIRCULATION, UREA NITROGEN, BACTERIAL FLORA (1694)•
ENTEROHEPATIC RECIRCULATION, TAUROCHOLATE, SMALL INTESTINAL DISEASES (8896)•
ENZYMATIC ACTIVITY, PHOSPHORYLASE, ALDOLASE (0747)•
ENZYMATIC ACTIVITY, THREONINE-DEVOID DIET, RAT (5990)•
ENZYME, ABNORMALITIES, DIABETES (7919)•
ENZYME, ACTIVATION (3218)
ENZYME, ACTIVATION, FRUCTOSE-1-PHOSPHATE (1705)•
ENZYME, ACYL-COA, PHOSPHATIDATE SYNTHESIS (2275)•
ENZYME, ADENOSINE, NUCLEOTIDE (4850)
ENZYME, ADRENAL CORTEX, DIURNAL RHYTHM (2403)•
ENZYME, ALCOHOL, METABOLISM (5444)
ENZYME, ALCOHOL, RAT (8666)
ENZYME, ALKALINE PHOSPHATASE, AMPHOLINE, ISOELECTRIC FOCUSING COLUMN (6309)•
ENZYME, ALTERATION, IRRADIATION (2415)•
ENZYME, ASSAY (4735)
ENZYME, BILE CANALICULAR, PHOSPHATASE (7029)•
ENZYME, BIOCHEMISTRY (1725)
ENZYME, BIOCHEMISTRY, AGE FACTOR (1695)•
ENZYME, BIOCHEMISTRY, AGE FACTOR, SEX FACTOR, HORMONAL CONTROL, EPINEPHRINE, GLUCAGON (1696)•
ENZYME, BIOCHEMISTRY, HISTOLOGY (0849)•
ENZYME, COENZYME, ALDEHYDE (4724)
ENZYME, CORTISOL, THYROID, ADRENAL (3856)
ENZYME, CRYSTALLIZATION, PROPERTIES, HUMAN (5451)
ENZYME, CYSTATHIONASE, CYSTEINE SULPHINIC ACID DECARBOXYLASE, SERINE DEHYDRASE, RAT (0158)
ENZYME, DEVELOPMENT, RAT (0894)
ENZYME, DIET, FAT (3214)
ENZYME, DISULFIDE REDUCTASE, TRANSHYDROGENASE ACTIVITY, MICROSOMES, NADH, PYRIDINE NUCLEOTIDES (4688)•
ENZYME, DRUG EFFECTS, RAT (5564)•
ENZYME, DRUG METABOLISM, PHENOBARBITAL, HEPATECTOMY, STRYCHNINE, HEXOBARBITAL (3813)•
ENZYME, FATTY ACIDS, DIET, RAT (0887)
ENZYME, FATTY ACID SYNTHESIS, PIGEON (5442)•
ENZYME, FATTY ACID SYNTHESIS, RADIATION, RAT (0890)
ENZYME, FOLATE, T4 INFLUENCE, RAT (4827)•
ENZYME, FORMAMIDASE, PURIFICATION, PROPERTY, RAT (2292)
ENZYME, FRACTIONATION (1577)•
ENZYME, GLUCOAMYLASE, MORPHOLOGY, MONKEY (5410)•
ENZYME, GLUTAMATE DEHYDROGENASE, SEDIMENTATION, BEEF (6337)
ENZYME, GLYCEROL, TROUT (4846)
ENZYME, GLYCOLYTIC, GLUCONEOGENIC, ALLOXAN DIABETES, FASTING (2282)•
ENZYME, GLYCOPROTEIN, N-ACETYLGLUCOSAMINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)•
ENZYME, HEPATITIS, CIRRHOSIS (4014)•
ENZYME, HEPATOCEREBRAL SYNDROME (4423)
ENZYME, HIGH PROTEIN DIET, VITAMIN B6 DEFICIENCY (7189)
ENZYME, HISTOCHEMISTRY, MORPHOLOGY, MOUSE, RAT (3039)•
ENZYME, HOMOGENATE, GEL ELECTROPHORESIS, PHYLOGENY, SPECIES VARIABILITY (2288)•
ENZYME, HYPERTENSION, CIRRHOSIS (6124)
ENZYME, IMMUNOFLUORESCENCE, RAT (4700)•
ENZYME, INACTIVATION, DEGRADATION, GLUCAGON, RAT (0876)
ENZYME, INDUCTION, PHENTOLAMINE (7157)•
ENZYME, INTERACTION, NUCLEOSIDE (4862)
ENZYME, IRON-DEFICIENCY, RAT (0834)•
ENZYME, ISOZYME (4728)
ENZYME, KIDNEY, AMPHIBIAN (4845)
ENZYME, KINETICS, AMINO ACID SUBSTRATE (1610)
ENZYME, KWASHIORKOR, CHILDREN (5394)
ENZYME, LOBE LIGATION, RAT (1598)
ENZYME, LYSOSOMES, GLUCAGON, KETOGENESIS (8509)•
ENZYME, LYSOSOMES, LIPASE (1697)•
ENZYME, MECHANISMS, RAT (1736)
ENZYME, METABOLISM (0825)•, (2293)
ENZYME, METABOLISM, ASCITES TUMORS (7158)•
ENZYME, METABOLISM, DDT (3580)
ENZYME, METABOLISM, NADH OXIDATION (4689)•
ENZYME, METABOLISM, NUCLEOTIDE (2284)•
ENZYME, METABOLISM, PATHOLOGY (3220)
ENZYME, METHODOLOGY, ASSAY, RAT (0865)
ENZYME, MITOCHONDRIA (4725)
ENZYME, MITOCHONDRIA, INHIBITION, INTERCOLATING DYES, RAT (3933)•
ENZYME, MITOCHONDRIA, LYSOSOME (0725)•
ENZYME, MITOCHONDRIA, PHOSPHOLIPID (2286)•
ENZYME, NERVOUS CONTROL (2401)•
ENZYME, NOREPINEPHRINE, PYRIDOXAL PHOSPHATE (7121)•
ENZYME, NUCLEIC ACID, METABOLISM, RATS (1710)•
ENZYME, PHENOL, METABOLISM (2445)
ENZYME, PHOSPHATE, METABOLISM (2294)
ENZYME, PURIFICATION, RAT (2309)
ENZYME, PYRIDINE, NUCLEOTIDE (1769)
ENZYME, PYRIMIDINE NUCLEOTIDE METABOLISM, DELTA-NAPHTHYLISOTHIOCYANATE, RAT (3621)
ENZYME, RATS (0833)•
ENZYME, RAT, MITOCHONDRIA, E.COLI, AEROBIC OXIDATION (5452)

ENZYME, REGENERATION, NUCLEIC ACIDS (0096)*
ENZYME, RHODAMINE SARCOMA (7042)
ENZYME, RNA POLYMERASE, ACTIVITY, AFLATOXIN B1, ULTRASTRUCTURE (3789)*
ENZYME, RNA POLYMERASE, L-TRYPTOPHAN, TRACER STUDIES (3800)*
ENZYME, SALT, ATP (3061)
ENZYME, SERUM, PATHOLOGY (4085)
ENZYME, TOXICITY, CARBON TETRACHLORIDE, COUMARIN, 4-METHYLCOUMARIN, DRUG (5425)*
ENZYME ACTIVITY, BIPHENYL HYDROXLASE, MITOCHONDRIAL EFFECTS (3952)*
ENZYME ACTIVITY, DEOXYCHOLATE, ETHANOL, RAT (3956)
ENZYME ACTIVITY, DNA POLYMERASE, HEPATOMA, RIBOSOMES (5429)*
ENZYME ACTIVITY, LOW TEMPERATURE, STORAGE TIME, RAT (1406)
ENZYME ACTIVITY, LYMPHOSARCOMA, HEPATIC ENZYMES (3953)*
ENZYME ACTIVITY, NADPH CYTOCHROME C REDUCTASE, HUMAN, RAT (5418)*
ENZYME ACTIVITY, Q FEVER, GUINEA PIG (4372)*
ENZYME ACTIVITY, THREONINE DEFICIENCY, RAT (4694)*
ENZYME ACTIVITY, TRYPTOPHAN, OXYGENASE, FLAVIN, RAT (5596)
ENZYME ACTIVITY, UDP GLUCURONYLTRANSFERASE, ULTRASOUND (5415)*
ENZYME ACTIVITY, XANTHINE OXIDASE, NAD, XANTHINE DEHYDROGENASE (3819)*
ENZYME ALKAPTONURIA, GILBERT'S SYNDROME (7562)
ENZYME BIOSYNTHESIS, SOMAN, DFP (4452)
ENZYME BIOSYNTHESIS, SOMAN, ETHIONINE (4450)
ENZYME EXCRETION, DIAGNOSIS (7246)
ENZYME INACTIVATION, SULFUR, RAT (5585)*
ENZYME INHIBITION, ISATIN, RAT (1732)
ENZYME METABOLISM, DIETARY DEFICIENCY (7110)*
ENZYME REGULATION (3839)
ENZYME REGULATION, GLYCOLYSIS, CARCINOGENIC COMPOUNDS, RAT (6079)
ENZYME REGULATION, HORMONAL, CYCLIC AMP (0114)
ENZYME RELEASE, MAMMARY GLAND, MUSCLE (3844)
ENZYME STUDIES, EQUILIBRIUM CONSTANT BINDING SITES (1775)
ENZYME SYSTEMS, ALKALINE INORGANIC PYROPHOSPHATASE, HEPATIC ISOENZYME, CYTOSOL (3030)*
EPIMERISATION, RAT (1739)
EPINEPHRINE, HEPATIC ARTERY, OXYGEN CONSUMPTION (1799)
EPITHELIAL HEPATOBLASTOMA, HEMIHYPERTROPHY (7561)
EPITHELIUM, REGENERATION, VIRAL HEPATITIS (5264)
ERYTHROCYTE LOCALIZATION, AUTORADIOGRAPHY (7049)
ERYTHROPOIESIS, GROWTH, PROLIFERATION KINETICS (7958)
ERYTHOPOIETIC PROTOPORPHYRIA, LIPOFUSCIN GRANULES, LYSOSOME-LIKE CORPUSCLES, MITOCHONDRIA, ENZYME (0553)
ERYTHROPOIETIN, METABOLISM (2862)
ESTERASE, ACYL TRANSFER, KINETICS (7175)
ESTERASE, ISOZYME, MOUSE (5447)
ESTROGENS, BILE DUCT, FUNCTION (6490)
ESTROGEN ANABOLIC EFFECTS, CLOMIPHENE INHIBITION (3616)
ETHANOL, CIRRHOSIS, LIPID (5246)
ETHANOL, METABOLISM, RAT (6439)*
ETHANOL, MICROSOMAL ENZYMES (7127)*
ETHANOL, RNA, URIDINE, ADRENALECTOMY, RAT (5574)*
ETHANOL, TRIGLYCERIDE (6071)
ETHANOL-INDUCED FATTY, PHENOBARBITAL (7578)*
ETHANOL-INDUCED INJURY, GLUTATHIONE, LIPID PEROXIDATION (8638)*
ETHANOL METABOLISM (2417)*
ETHANOL METABOLISM, FATTY ACID, RAT (3166)*
ETHANOL METABOLISM, FATTY ACIDS, HEPATIC TRIGLYCERIDES, ENZYMES, MICROSOMES (0836)*
ETHANOL METABOLISM, FRUCTOSE METABOLISM, ALCOHOL DEHYDROGENASE, PYRAZOL, CARBOHYDRATE METABOLISM, ENZYMATIC INHIBITION (3160)*
ETHANOL METABOLISM, OXYGEN CONSUMPTION, BLOOD (8660)
ETHANOL METABOLISM, THYROID FUNCTION, ACETALDEHYDE LEVELS (0838)*
ETHANOL OXIDATION, MICROSOMES, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)*
ETHANOL OXIDIZING SYSTEM, MICROSOME, DRUG EFFECTS, CATALASE ACTIVITY, ALCOHOL DEHYDROGENASE (3929)*
ETHANOL TOXICITY, AMITRYPTALINE POTENTIATION (0848)*
ETHIONINE INDUCED INJURY, TRYPTOPHAN PYRROLASE, CORTISONE, ENZYME ACTIVITY, RAT (1406)
ETHYL CHLOROPHENOXY-ISOBUTARATE, MITOCHONDRIA (0729)*
EXCLUSION, SUPERIOR MESENTERIC ARTERY, CIRCULATION, GLUCAGON (2483)*
EXCRETION, BILE ACID, BILE SALT (6362)
EXCRETION, ENDRIN, DIELDRIN, RAT (3202)
EXCRETION, STEROIDS, PERFUSION, RAT (4762)*
EXCRETORY FUNCTION, BILE FLOW, HEPATOBILIARY TRACT DISEASES (8277)
EXPERIMENTAL ACUTE INSUFFICIENCY, MORPHOLOGY, DOG (8286)
EXPERIMENTAL CIRRHOSIS, ENZYME ACTIVITY, RENIN, ANGIOTENSIN, ANGIOTENSINASE (1706)*
EXPERIMENTAL ENCEPHALOPATHY, ELECTROENCEPHALOGRAPHIC STUDIES, CLINICAL STUDIES, RAT (7156)
EXPERIMENTAL HEPATORENAL SYNDROME (7573)
EXPERIMENTAL STEATOSIS, CHOLINE, OROTATE, RAT (8682)

LIBRARY U. OF I. URBANA-CHAMPAIGN

XPLANT CULTURE, MORPHOLOGY, CYTOGENESIS (1562)•
XTRACORPOREAL CIRCULATION, HEART-LUNG PREPARATION, LIVER PHOSPHORYLASE, SUCCINIC DEHYDROGENASE, GLYCOGEN (1709)•
XTRACORPOREAL PERFUSION, ANIMAL (1364)
XTRACT, GLUCOSE-6-PHOSPHATE-DEHYDROGENASE, ISOENZYME, ERYTHROCYTE, RAT (4740)
XTRACT INHIBITOR, NUCLEIC ACID SYNTHESIS, MAN (7955)
XTRACT WITH B12, E,K, PROTECTIVE EFFECT, LIVER DISEASES, TUBERCULOSIS (9066)
AILURE, ACUTE, ALLOGENIC EXTRACORPOREAL ASSIST (3765)
AILURE, DIABETES, EXCHANGE TRANSFUSION, COMA (5240)
AILURE, HALOTHANE, HEPATITIS, SURGERY (3612)
AILURE, MYOCARDIAL INFARCTION (6809)
AILURE, PERITONEAL DIALYSIS, DRUG INTOXICATION (6964)
AILURE, SEVERE, ALA-DEHYDRASE ACTIVITY, ALA-OXIDASE ACTIVITY (3577)
AILURE, SURGICAL TREATMENT (6023)
ALCIFORM LIGAMENT, CYST, CONGENITAL (4405)
AMILIAL, FIBRO-ANGIO-ADENOMATOSIS, CHRONIC ICTERUS (2183)
ASTED, ACID-STABLE RIBONUCLEASE (8657)
ASTING, LYSOSOMES, REGRESSION (8620)•
AT, ALCOHOL, CIRRHOSIS (5235)
AT, ALCOHOL, DIET (5236)
AT, AZASERINE, RAT (2856)•
ATTY, ALCOHOL, TRANSAMINASE, SILYMARIN (6910)
ATTY, ATP RELATIONSHIP (2392)•
ATTY, BENZOBROMARONIUM TREATMENT (3660)
ATTY, BIOPSY, CLINICAL STUDY, HEPATITIS (4433)
ATTY, BIOPSY, PERITONEOSCOPY, FROHLICH SYNDROME (2078)
ATTY, CAUSAL MECHANISM, CHRONIC HYPOXIC SUCKLING RATS (2045)
ATTY, CHOLINE-DEFICIENCY, LIPOPROTEIN STRUCTURE (2864)
ATTY, CIRRHOSIS, CHRONIC HEPATITIS, HYPERSPLENISM, THOMBOCYTOPENIA (5173)
ATTY, CIRRHOSIS, PLASMA PHOSPHOLIPID (2129)•
ATTY, ETHANOL, ANTIOXIDANT, MECHANISM (3595)•
ATTY, ETHANOL, PYRAZOLE (7577)•
ATTY, ETHANOL-INDUCED, PYRAZOLE (7579)•
ATTY, FATTY KIDNEY, NEPHROTIC SYNDROME (6892)
ATTY, HISTOCHEMISTRY, ENZYME, ALCOHOL (7576)•
ATTY, LIPOPROTEIN METABOLISM, MYOINOSITOL (7580)•
ATTY, MICROSOME, PROTEIN SYNTHESIS (6898)
FATTY, NECROSIS, ALCOHOL-INDUCED, CHOLINE DEFICIENCY, RAT (0101)•
FATTY, NEPTUNIUM, MORPHOLOGY, FUNCTION, RAT (3619)
FATTY, PREVENTION, VITAMIN (6777)•
FATTY, REGENERATION, ALCOHOL ABSTINENCE, ALCOHOL (2152)
FATTY, REVERSIBLE, FIBROSIS, JEJUNOCOLIC SHUNT (4521)
FATTY, SILYMARIN, ALCOHOL, ADIPOSITY, DIABETES MELLITUS (6910)
FATTY, TETRACYCLINE (8333)
FATTY ACID, BIOCHEMISTRY, RAT (0843)•
FATTY ACID, BLOOD SUGAR, INSULIN, CIRRHOSIS (4522)
FATTY ACID, CIRRHOSIS (5280)•
FATTY ACID, EMBRYO, METABOLISM (3938)•
FATTY ACID, MICROSOME, RAT (3930)•
FATTY ACID, NEONATE, OBSTRUCTIVE JAUNDICE (9770)•
FATTY ACID, PERFUSION, NADH, NADPH, MITOCHONDRIA, MICROSOME, RAT (5575)•
FATTY ACID, STEROLS, FECES, CIRRHOSIS (4509)
FATTY ACID, SYNTHESIS, ADIPOSE TISSUE, LIPOGENESIS, SUBSTRATE, PIG (0128)
FATTY ACID, SYNTHESIS, HEPATIC LIPOGENESIS, ENZYMES (1716)•
FATTY ACID, SYNTHESIS, MITOCHONDRIA-MICROSOME SYSTEM (2821)
FATTY ACID, THYROXINE, COLD (3947)•
FATTY ACID DEFICIENCY, TRIGLYCERIDE RELEASE, PERFUSED (8618)•
FATTY ACID METABOLISM, ALCOHOL, RAT (8633)•
FATTY ACID METABOLISM, COENZYMES, GUINEA PIG (8608)•
FATTY ACID METABOLISM, DIABETES (3172)•
FATTY ACID SYNTHESIS, ENZYME ACTIVITY, ACETYLTRANSACYLASE, MALONYLTRANSACYLASE, FATTY ACID SYNTHETASE (5441)•
FATTY ACID SYNTHESIS, FATTY ACID SYNTHETASE, BINDING SITES (5423)•
FATTY ACID SYNTHETASE, BINDING SITES, PIGEON (5460)
FATTY INFILTRATION, RESISTANCE, ETHANOL (4463)
FATTY LIVER, LIPID METABOLISM, ETHIONINE, HEPATIC ENZYMES, CYTOCHROMES (6056)•
FATTY METAMORPHOSIS, ''KAMAGASAKI'S LIVER'', MEDICO-LEGAL (0585)
FERRITIN, TUMOR (7166)
FERRITIN, TUMOR, RAT (6990)
FETAL, COBALT RADIATION, LIVER, PLACENTA, GROWTH INHIBITION, RAT (5166)
FETAL, DRUG METABOLISM, PREGNANCY, WEANING (2437)
FETAL, HYDROCORTISONE, GLYCOGEN, HEPATOCYTES (6483)
FETAL, RNA SYNTHESIS, METABOLISM (0824)•
FETAL, STEROID, FETAL ADRENAL (5448)
FETAL, STEROID METABOLISM, TESTOSTERONE (7132)•
FETUS, RAT, RIBOSOME (2314)

FETUS, TRANSSULFURATION, CYSTATHIONINE, CYSTATHIONASE, ENZYME ACTIVITY, METHIONINE, CYSTINE (5420)•
FIBRINOGEN, SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
FIBRINOGEN, SYNTHESIS, RELEASE (6455)
FIBRINOLYTIC ACTIVITY, CIRRHOSIS, CLOTTING DISORDERS (9152)•
FIBROGENESIS, CIRCULATION, CIRRHOSIS (6895)
FIBROSIS, ALCOHOLIC HEAPTITIS, MESENCHYMAL CELL (9057)
FIBROSIS, CONGENITAL, INCIDENCE, TREATMENT (2052)
FIBROSIS, CONGENITAL, KIDNEY (4408), (4435)
FIBROSIS, EXPERIMENTAL SCHISTOSOMIASIS, MONKEY (0537)•
FIBROSIS, REVERSIBLITY, COLLAGEN, RAT (5222)•
FISTULA, ARTERIOVENOUS (1791)
FIXATION, ELECTRON MICROSCOPY, GLUTARALDEHYDE (6319)
FLUORIDE, GLYCOLYSIS, CITRIC ACID CYCLE (7914)•
FOLIC ACID, CIRRHOSIS, MALABSORPTION, CHRONIC ALCOHOLISM, PTEROYLGLUTAMIC ACID (5074)
FOLIC ACID, HEPATITIS, CIRRHOSIS, CANCER (6773)•
FOREIGN BODIES, EXTRAPLEURAL TRANSDIAPHRAGMATIC SURGERY (7589)
4-DIMETHYLAMINOAZOBENZENE (DAB), BASIC CUPRIC ACETATE, CANCER (2422)
FRAGMENTS, ECTOPIC SITES (3184)
FREE AND MEMBRANE BOUND RIBOSOMES, ABSOLUTE STARVATION, RAT (7816)
FREEZING DAMAGE, ENZYME, MITOCHONDRIA, MOUSE (2312)
FRUCTOSE DIPHOSPHATASE, KIDNEY, COA, ACYL CARRIER PROTEIN (6290)•
FRUCTOSE INTOLERANCE, FIBROSIS, STEATOSIS, BIOPSY, LIVER (9038)•
FRUCTOSE-1, 6-DIPHOSPHATASE DEFICIENCY HYPOGLYCEMIA, METABOLIC ACIDOSIS (7527)•
FULMINANT NECROSIS, HALOTHANE, ANESTHESIA (6847)
FUNCTION, ACUTE CHOLECYSTOPANCREATITIS (5973)
FUNCTION, ALCOHOLISM, GASTRITIS, PHOSPHATASE, ENLARGEMENT (2831)
FUNCTION, ALCOHOLISM, MORPHOLOGICAL ALTERATIONS (8653)
FUNCTION, ALKYLPHOSPHATE INTOXICATION, ANTIDOTE THERAPY, RAT, RABBIT (9108)
FUNCTION, BENZYDAMINE HCL (9058)
FUNCTION, BLOOD FLOW, HIGH ALTITUDE (6471)
FUNCTION, CONTRACEPTIVE PILLS, BILHARZIASIS (0534)•
FUNCTION, CONTRAST MEDIA, BILIRUBIN, CHOLESTEROL, ALKALINE PHOSPHATASE (2465)
FUNCTION, CORTISOL HYPERSECRETION, LIVER GLUCONEOGENESIS, TRANSAMINASES (9046)
FUNCTION, CYCLOPHOSPHAN TREATMENT, LUNG CANCER (8042)
FUNCTION, DEHYDROCHOLYL-METHIONE, ETHYL ESTERS (3974)
FUNCTION, DIABETES MELLITUS, ANTIDIABETIC (1404)
FUNCTION, DIAGNOSIS, SCANNER, GAMMA CAMERA, SCINTOGRAPHY (3299)
FUNCTION, DISEASE, ACETYLATION RATE, SULFATHIAZOLE, ENZYME (6043)
FUNCTION, DRUG METABOLISM, ALCOHOL INTERFERENCE (8667)
FUNCTION, ETHANOL, ANESTHESIA (7183)
FUNCTION, HALOTHANE ANESTHESIA, SURGERY (9113)
FUNCTION, HALOTHANE NARCOSIS, SURGERY (9112)
FUNCTION, HALOTHANE HYPOTENSION (1403)
FUNCTION, IMPLANTATION, TISSUE ADHESIVE, DOG (2454)
FUNCTION, KIDNEY DISEASES, AMINE NITROGEN (7549)
FUNCTION, MESENCHYMAL CLEARANCE, COLLOIDAL IRON (8786)
FUNCTION, METAL WORKERS, CHLORO-ETHYLENE EXPOSURE (2805)•
FUNCTION, NUTRITION, HEPATO-INTESTINAL CIRCULATION (7694)
FUNCTION, NUTRITIONAL EDEMA (7000)
FUNCTION, OBSTRUCTIVE JAUNDICE, VIRAL HEPATITIS (7252)
FUNCTION, PEPTIC ULCER, BSP RETENTION (6657)•
FUNCTION, PERFUSION TECHNIQUE, RAT (7934)
FUNCTION, PORTACAVAL SHUNT, CIRRHOSIS (9157)
FUNCTION, PREOPERATIVE EVALUATION, CHOLELITHIASIS (0686)
FUNCTION, PULMONARY CANCER (7594)
FUNCTION, RIFAMPICIN, BILIRUBIN (9089)
FUNCTION, SCINTILLATION CAMERA ANALYZER (3297)
FUNCTION, SERUM ENZYMES (1763)
FUNCTION, SERUM PROTEIN FRACTIONS, ABDOMINAL SURGERY (0579)
FUNCTION, SMALL INTESTINE, RESECTION (7543)
FUNCTION, STEATOSIS, PREGNANCY (9082)
FUNCTION, STRUCTURE, PYRAZOLE (7125)•
FUNCTION, STRUCTURE, SEVINE, RAT, RABBIT (8339)
FUNCTION, SUGAR METABOLISM, PROGESTERONE DERIVATIVE EFFECT, UTERINE ADENOCARCINOMA (3578)
FUNCTION, SULFOBROMOPHTHALEIN CLEARANCE, PREGNANT WOMEN, VIRAL HEPATITIS HISTORY (9142)
FUNCTION, SULFOBROMOPHTHALEIN INTOLERANCE (8788)
FUNCTION, SYRINGOMYELIA, GASTRIC ULCER (7548)
FUNCTION, TETRACYCLINE INFUSION, KIDNEY (4644)
FUNCTION, THYROID, BILE, HEPATIC BLOOD FLOW (6040)
FUNCTION, TICK-BORNE ENCEPHALITIS (7574)
FUNCTION, TRANSAMINASES, RIFAMPICIN (9090)
FUNCTION, TRANSPLANT, SECRETION (3990)

FUNCTION, VIRAL HEPATITIS, BONE MARROW DAMAGE (8358)
FUNCTION, VIRAL HEPATITIS, OVARIES ENDOCRINOLOGY (8352)
FUNCTION, WILSON'S DISEASE, NEUROLOGICAL LESIONS (9045)
FUNCTION TEST (0223)
FUNCTION TEST, ANEMIA, IRON DEFICIENCY, NECATOROSIS (2265)
FUNCTION TEST, HUMAN SERUM ALBUMIN (0580)
FUNCTION TEST, JAUNDICE, CHOLESTATIC, IDOXURIDINE (0550)
FUNCTION TEST, PULMONARY TUBERCULOSIS (0575)
FUNCTION TEST, SERUM PROTEIN FRACTIONS, FALCIPARUM MALARIA (0223)
FUNCTION TEST, VIRAL HEPATITIS, COMPUTER ANALYSIS (6858)•
FUNCTIONAL ADAPTATION, THYROIDAL DISTURBANCE (2843)
FUNCTIONAL CHANGE, MORPHOLOGICAL CHANGE, COMA DEPASSE (3565)
FUNCTIONAL TEST, SCINTOGRAPHY, GOLD, LABELED, COLLOIDAL (2535)
GALACTOSAMINE HEPATITIS, OROTATE (6845)
GALACTOSAMINE-INDUCED HEPATITIS, ULTRASTRUCTURE, HISTOCHEMISTRY, SPECIES DIFFERENCES (4443)•
GALLBLADDER, ICTERUS, DIAGNOSIS (4035)
GALLBLADDER EMPTYING, CHOLECYSTOKININ, FAT DIET, SIMPSON' METHOD (2359)•
GIANT HEMANGIOMA, SURGERY (7569)
GILBERT'S SYNDROME, PIGMENT OVERLOAD BSF RETENTION (2053)
GLUCAGON, ETHANOL METABOLISM (7972)
GLUCOCORTICOID, ENZYME, REGULATION (1591)
GLUCOCORTICOID, HEPATITIS, CIRRHOSIS, INCONSTANT ACTION (0615)
GLUCOKINASE, GLYCOLYSIS REGULATION, SYNTHESIS, ATP INHIBITION, AMP, RAT (5428)•
GLUCOKINASE, HYDROCORTISONE, ACETATE, GLUCOSE, ESTRADIOL (5578)•
GLUCOKINASE, MICROSOME (3845)
GLUCONEOGENESIS, FATTY ACID, OXIDATION, PENT-4-ENOIC ACID INHIBITION (6425)•
GLUCONEOGENESIS AND GLYCOLYSIS IN GLYCOGENESES, FACTORS (3199)
GLUCONEOGENESIS, HORMONAL CONTROL (7951)
GLUCONEOGENESIS, INHIBITION, 4-PENTENOIC ACID, MECHANISM, RAT (5557)•
GLUCONEOGENESIS, PYRUVATE, RAT (7966)
GLUCONEOGENESIS, STIMULATION, HYPOPHYSECTOMY (8672)
GLUCONEOGENESIS, SUBSTRATE ROLE, FASTING MAN (1719)•
GLUCONEOGENESIS, TRANSAMINASES, AGE, CHICKEN, GUINEA PIG (6462)
GLUCONEOGENESIS STIMULATION, INSULIN, FREE FATTY ACIDS, FASTING, IN VITRO, RAT (6486)
GLUCOSE, ETHIONINE, ULTRASTRUCTURE (8330)
GLUCOSE-A-PHOSPHATASE, GLYCOGEN, TRYPANOSOMA GAMBIENSE, GUINEA PIG (7018)
GLUCOSE-6-PHOSPHATASE, HEPATOCYTES, BLOOD CELLS, RAT, NEONATE (0120)
GLUCOSE OXIDATION, METABOLISM, CIRRHOSIS (4508)
GLUCOSE REPRESSION, HORMONE, RAT (1735)
GLUCOSYLATION, ACCEPTOR-LIPID, DOLICHOL (6307)•
GLUCURONYLTRANSFERASE, ETHANOL, SMOOTH, ENDOPLASMIC RETICULUM, PARTIAL HEPATECTOMY, RAT (8650)
GLUCURONYLTRANSFERASE, URANYL NITRATE, RENAL ACTIVITY, ENZYMOLOGY, RAT (5225)
GLUTAMATE DEHYDROGENASE BIOSYNTHESIS, AMPHIBIANS (1764)
GLUTATHIONE, DEPLETION, BSP, METABOLISM (7119)•
GLYCERALDEHYDEPHOSPHATE DEHYDROGENASE BOVINE (6327)
GLYCINE-SERINE CONVERSION, NONKETOTIC HYPERGLYCINEMIA (7529)•
GLYCOGEN, ACUTE HEPATITIS, PYRIDOXINE (7585)
GLYCOGEN, CORTICOSTEROID, FETUS, NEWBORN (2429)
GLYCOGEN, DAB CARCINOGENESIS, HISTOCHEMISTRY (6316)
GLYCOGEN, DIURNAL VARIATION, AD LIBITUM FOOD, SINGLE DAILY MEAL, RAT (3207)
GLYCOGEN, ISOLATION, SODIUM IOTHALAMATE (6331)
GLYCOGEN, PESTICIDES, RAT (7979)
GLYCOGEN, PROPYLENE GLYCOL, METABOLISM (2452)
GLYCOGEN CONTENT, FAST NEUTRONS, X-RAY (7959)
GLYCOGEN DISEASE, HEPATIC GLYCOGENOLYSIS, GLUCAGON, HYPERGLYCEMIA, GLUCOSE TRANSFUSION (4370)•
GLYCOGEN METABOLISM, RADIOACTIVITY, PRECURSOR, GLUCOSE INCORPORATION, GLUTAMIC ACID, MICE, GLYCERYLTRIPALMITATE (4861)
GLYCOGEN PHOSPHORYLASE, GLUCOSE, GLUCOCORTICOID (7142)•
GLYCOGEN SYNTHESIS, INHIBITION (6470)
GLYCOGEN SYNTHETASE, GLUCOSE, GLUCOCORTICOIDS (7146)•
GLYCOGENOLYSIS, AEROBIC, ANEROBIC, PREPARATION (1722)•
GLYCOGENOLYSIS, MUSCLE, PHOSPHORYLASE KINASE (7572)
GLYCOLIPID, CHOLESTEROL, GLYCERIDES, CONTENT, STORAGE DISEASES (5411)•
GLYCOLYSIS, GLUCONEOGENESIS, CARBOHYDRATE-FREE DIET (5598)
GLYCOLYSIS, GLUCONEOGENESIS, DIABETES (7964)
GLYCOLYSIS, GLUCONEOGENESIS, DIABETES, MAN, RAT (6794)
GLYCONEOGENESIS, ALPHA-METHYLTRYPTOPHAN, AMINO ACID SPARING (8645)
GLYCOPROTEIN, CHRONIC HEPATITIS, 10-

SCOPY, BIOPSY, DIABETICS, PROTEIN-BOUND POLYSACCHARIDES (5647)•
GOLGI APPARATUS, ISOLATION, LIPID, PROTEIN (2297)
GOLGI APPARATUS, PHOSPHOLIPID, FATTY ACIDS (1615)
GOLGI APPARATUS, ULTRASTRUCTURE CHANGE, TOCOPHEROL DEFICIENCY (5149)•
GONOCOCCAL PERIHEPATITIS, CHOLECYSTITIS, MAN (1410)
GRAFT, HEPATITIS, ENZYMES, HISTOLOGICAL CHANGES, GLUCURONIDASE, PROTEIN METABOLISM, CELLULAR RESPIRATION, HUMAN, BABOON (6069)
GRAFT, TRANSPLANT (3219)
GRANULOMATOSIS, HISTOPATHOLOGY, CLINICAL FEATURES (9105)
GRANULOMATOUS DISEASE, ACUTE (7901)•
GRISEOFULVIN, HISTOLOGY (4469)
GROSS ANATOMY, BLOOD SUPPLY, BILIARY DRAINAGE, DOG (3075)
GROWTH, GENETICS, CASTRATION, HEPATOMA (7908)•
GROWTH, HEPATECTOMY, ORNITHINE DECARBOXYLASE, STRESS (3940)•
GROWTH, MITOSES (0154)
GROWTH HORMONE, INSULIN, GLUCOSE TOLERANCE, HEPATITIS (0535)•
GUANINE DEAMINASE, INDUCTION, STRESS (7969)
HALOGEN SENSITIZATION, CLINICAL SYNDROME (3602)
HALOTHANE, METHOXYFLURANE, DOG (5603)
HALOTHANE, MITOCHONDRIA, ELECTRON TRANSPORT, OXIDATIVE PHOSPHORYLATION, RAT (1707)•
HALOTHANE EFFECT, HISTOCHEMISTRY, ELECTRON MICROSCOPY (3603)
HALOTHANE EXPOSURE, SULFOBROMOPHTHALEIN CLEARANCE, RAT (5223)•
HEMANGIOENDOTHELIOMA, HEMOLYTIC ANEMIA (6819)
HEMANGIOENDOTHELIOMA, POST-HEPATECTOMY (4412)
HEMANGIOMA, CAVERNOUS, DIAGNOSIS (0573)
HEMANGIOMA, RADIATION THERAPY (6017)
HEMANGIOMATOSIS, HEPATIC ARTERY LIGATION (7570)
HEMANGIOMATOSIS, THROMBOSIS, ORAL CONTRACEPTIVE (8433)
HEMANGIOPERICYTOMA, HYPOGLYCEMIA (8302)
HEMATOCHROMATOSIS, IRON DEPOTS HEMOSIDERIN, ENDOCRINE FAC[illegible], DIABETES (6045)
HEMATOMA, SURGERY (3582)
HEMATOPOIESIS, MORPHOLOGY, FETAL MOUSE (7815)
HEME, INCORPORATION, MICROSOMES, PROTEIN SYNTHESIS, RAT (0140)
HEMIHEPATECTOMY, TECHNIQUE (6793)
HEMOBILIA, NECROSIS, HALOTHANE, MAN (1399)
HEMOCHROMATOSIS, IRON ABSORPTION ([illegible])•
HEMOCHROMATOSIS, MALABSORPTION, IRON, PHLEBOTOMY THERAPY (5982)•
HEMODYNAMICS, DRUG, ALCOHOL (6768)•
HEMODYNAMICS, NERVOUS SYSTEM, VASOMOTOR ACTION, PERIARTERIAL NEURECTOM (4874)
HEMODYNAMICS, OCCLUSION OF HEPATIC AND SUPERIOR MESENTERIC ARTERIES, HEPATIC OUTFLOW BLOCK, DOG (9255)
HEMOGLOBIN H, DISEASE, HEMOSIDEROSIS (8311)
HEMORRHAGE, THOROTRAST, ANGIOPLASTIC SARCOMA, DELAYED DAMAGE (5214)
HEMORRHAGE, TOXEMIA, PREGNANCY (6935)•
HEMORRHAGE, VENOUS, CONTROL (8428)
HEMORRHAGE DIATHESIS, CONTROL (4412)
HEPAMERZ, ORNITHINE, ASPARAGINE, RADIATION, METASTASES, HEPATITIS, CIRRHOSIS (5197)
HEPARIN, INFECTIOUS HEPATITIS, BLOOD (2874)
HEPATECTOMY, BIOLOGICAL CONSEQUENCES (2849)
HEPATECTOMY, CELL REGENERATION, MORPHOLOGY (0003)•
HEPATECTOMY, ENZYME ACTIVITY, PHENOBARBITAL (3813)•
HEPATECTOMY, 5-FLUOROURACIL, ULTRASTRUCTURE, RNA (8621)•
HEPATECTOMY, REGENERATION, SPLEEN, HEMATOPOIESIS, HUMORAL FACTORS, PORTAL HYPERTENSION, RAT (4852)
HEPATECTOMY, SEGMENT VARIATION, RADIOLOGY (5473)
HEPATECTOMY, SUBTOTAL, VASCULAR STRUCTURE CHANGE, REGENERATION, RAT (2304)
HEPATECTOMY, SURGERY (2044)
HEPATECTOMY, TECHNIQUE (0100)•
HEPATECTOMY, THROMBIN, KUPFFER CELLS (1386)
HEPATECTOMY, TRIGLYCERIDE, ACCUMULATION (8606)•
HEPATIC ABSCESS, AMEBIASIS CUTIS, CORTICOSTEROIDS (0583)
HEPATIC ARTERY, ANEURYSM, HEMORRHAGE (5395)
HEPATIC ARTERY, COLLATERAL CIRCULATION, ANGIOGRAPHY, HEPATIC TUMOR (5981)•
HEPATIC ARTERY, PORTAL VEIN, AMINO ACID (7994)•
HEPATIC ARTERY, PORTAL VEIN, BLOOD FLOW (5630)•
HEPATIC ARTERY DENERVATION, CIRRHOSIS (3654)
HEPATIC BILE DUCT, OCCLUSION, OBSTRUCTIVE JAUNDICE, OLD AGE (2172)
HEPATIC CELL, LABELED GOLD COLLOID DISTRIBUTION (1596)
HEPATIC CELL, NUCLEAR CLASSES RELATIONSHIP, MICROCELL STUDY (3057)
HEPATIC CELL CARCINOMA, ENZYME SYNTHESIS, AMINO ACID (3941)•
HEPATIC CIRRHOSIS, RESPIRATION, WORK CAPACITY, BLOOD (2889)
HEPATIC COMA, DELIRIUM TREMENS, EXTRACORPOREAL PERFUSION, CORTICOSTEROID, COFACTOR (6008)
HEPATIC COMA, ESOPHAGEAL VARICES, HEMORRHAGE, CARCINOMA, BILIRUBIN (5342)

EPATIC COMA, FLAPPING TREMOR, PYRAMIDAL SIGNS, HEMORRHAGE, AMMONIEMIA, ELECTROLYTES, CORTICAL LESIONS (5217)
EPATIC COMA, HETEROGRAFT, BABOON, IMMUNODEPRESSIVES, CORTICOIDS, CROSS CIRCULATION, MAN (5213)
EPATIC COMA, MASSIVE EXCHANGE TRANSFUSIONS, RECOVERY (3589)
EPATIC COMA, PROGNOSIS (0568)
EPATIC COMA, PROPHYLAXIS, TREATMENT (2852)
EPATIC COMA, THERAPY (2850)
EPATIC COMA, URETEROSIGMOIDOSTOMY (7644)
EPATIC COMA, VIRAL HEPATITIS, MANAGEMENT (2117)
EPATIC DISEASE, CORRELATION WITH FETAL, PROTEINS ALPHA1 AND BETA (2060)
EPATIC DISEASE, DIAGNOSIS, ANGIOGRAPHY (0958)
EPATIC DYSFUNCTION, HEPATOSPLENOMEGALY, CHRONIC HYPERVITAMINOSIS A (2858)*
EPATIC ENCEPHALOPATHY, INDUCED METABOLIC, ALKALOSIS, CLINICAL STUDIES, IN VITRO STUDIES (0858)
EPATIC ENCEPHALOPATHY, SODIUM BICARBONATE TREATMENT, CEREBRAL BLOOD FLOW (0534)*
EPATIC ENZYMES, DRUG METABOLISM, DAILY RHYTHMS (0842)*
EPATIC FAILURE, ACUTE HEPATITIS, ULTRASTRUCTURE, MITOCHONDRIA, ENDOPLASMIC RETICULUM (5258)
EPATIC INJURY, AMEBIC ABSCESSES, DIAGNOSIS, LIVER SCAN, EMETINE, CHLOROQUINE (2100)
EPATIC INJURY, HELIOTRINE, MORPHOLOGIC CHANGES (1397)*
EPATIC INSUFFICIENCY, ANOXEMIA, PROTHROMBIN, COAGULATION, SHOCK, NEWBORN INFANTS (5288)
EPATIC INSUFFICIENCY, PANMEDIA, STEATOSIS, ANOREXIA, HEPATITIS (5199)
EPATIC INSUFFICIENCY, WILSON'S DISEASE, SURGERY, LEUDOPENIA, THROMBOPENIA, GASTRODUODENAL, HEMORRHAGE (5200)
EPATIC LESION, ISONIAZID, LUNG TUMOR, ANTITUBERCULAR ACTIVITY, RIFAMPICINE (5230)
HEPATIC OVARIAN SYNDROME, ETIOLOGY, PATHOGENESIS, CLINICAL PICTURE, THERAPEUTICS (3575)
HEPATIC PORPHYRIA, KIDNEY BIOPSY, FLUORESCENCE MICROSCOPY, RENAL TUBULI (5216)
HEPATIC PORTAL SYSTEM, VISUALIZATION PORTOHEPATOGRAPHY, CANCER (0195)*
HEPATIC PORTAL VENOUS GAS, NONFATAL, INFANTS (2055)
HEPATIC REGENERATION, EXPERIMENTAL (2785)*
HEPATIC VEIN THROMBOSIS, CIRRHOSIS, CARBON TETRACHLORIDE, METHYLCHOLANTHRENE, RAT (3606)
HEPATITIS (4486)
HEPATITIS, ACUTE, HISTOLOGY, IMMUNOLOGY (0620)
HEPATITIS, ACUTE, RADIOISOTOPIC DIAGNOSIS, LIVER FUNCTION TESTS, JAUNDICE DIFFERENTIATION (0210)
HEPATITIS, ACUTE ALCOHOLIC, DIAGNOSIS (2102)
HEPATITIS, ACUTE VIRAL, AUSTRALIA ANTIGEN (8353)
HEPATITIS, ACUTE VIRAL, PRESYMPTOMATIC DIAGNOSIS, AUSTRALIA ANTIGEN (1418)
HEPATITIS, ACUTE VIRAL, REST, EXERCISE (1419)
HEPATITIS, ADOLESCENT, EPIDEMIOLOGY (5262)
HEPATITIS, ALCOHOL, FATTY LIVER (6846)
HEPATITIS, ANTIGEN, BLOOD DONOR, POST-TRANSFUSION (9115)*
HEPATITIS, ANTIGEN, IMMUNOELECTROPHORESIS, OUCHTERLONY TECHNIQUE, BLOOD TRANSFUSION (4945)
HEPATITIS, ANTIGEN, LEPROSY (2879)
HEPATITIS, AZATHIOPRINE, IMMUNOSUPPRESSIVE THERAPY (6874)
HEPATITIS, BLOOD, RED CROSS (1398)*
HEPATITIS, CELLULAR IMMUNITY, HYPERGAMMAGLOBULINEMIA (6971)
HEPATITIS, CHRONIC, AUSTRALIA ANTIGEN, AUTOANTIBODIES (8364)*
HEPATITIS, CHRONIC, CHILDREN, ULTRASTRUCTURE (0602)
HEPATITIS, CHRONIC, CHOLECYSTOANGIOCHOLITIS, OXYGEN (1371)
HEPATITIS, CHRONIC, CIRRHOSIS, LYMPHOCYTE TRANSFORMATION, PHYTOHEMAGGLUTININ (2887)
HEPATITIS, CHRONIC, CIRRHOSIS, TREATMENT, TOLBUTAMIDE (1438)*
HEPATITIS, CHRONIC, ETIOPATHOGENESIS (0628)
HEPATITIS, CHRONIC, EVOLUTION, PROGNOSIS (0604)*
HEPATITIS, CHRONIC, PATHOGENESIS (2128)
HEPATITIS, CHRONIC, PROGNOSIS, CIRRHOSIS (0191)*
HEPATITIS, CHRONIC, TREATMENT (0590)
HEPATITIS, CHRONIC ACTIVE, CIRRHOSIS, GAMMA GLOBULIN, METABOLISM (3643)*
HEPATITIS, CHRONIC REACTIVE, RHEUMATOID FACTOR (2111)
HEPATITIS, CIRRHOSIS, AUTOALLERGIC PHENOMENON (2091)
HEPATITIS, CIRRHOSIS, BILIRUBIN, TRANSAMINASE, ALBUMIN, GAMMA GLOBULIN, PROTEIN FRACTIONS (4932)
HEPATITIS, CIRRHOSIS, ENZYMES, CHILDREN, DIAGNOSIS (0194)*
HEPATITIS, CIRRHOSIS, ENZYME ACTIVITY, METHODS, SGOT, SGPT, SERUM, LDH, PLASMA (4933)
HEPATITIS, CIRRHOSIS, FULMINANT HEPATIC FAILURE (7526)*
HEPATITIS, CIRRHOSIS, PORTAL HYPERTENSION, AMMONIA TOLERANCE TEST (0186)*
HEPATITIS, CIRRHOSIS, SERUM ANTIBODIES (0103)*

HEPATITIS, EPIDEMIC, SHORT INCUBATION (8346)*
HEPATITIS, EXERCISE, REST (0882)
HEPATITIS, GAMMA-GLOBULIN, PROPHYLAXIS (4487)
HEPATITIS, GENESIS, AUTOAGGRESSIVE THEORY (2812)
HEPATITIS, GILBERT'S DISEASE, HYPERBILIRUBINEMIA, DIFFERENTIATION (0530)*
HEPATITIS, HALOTHANE (7590)
HEPATITIS, HEMODIALYSIS, SH-ANTIGEN (0609)*
HEPATITIS, HEPATIC COMA, CHOLINESTERASE (3633)
HEPATITIS, HETEROANTIBODY, BILE CANALICULI (2125)*
HEPATITIS, HYDATITOSIS (1541)
HEPATITIS, ICTERIC, INTRAHEPATIC, BILE DUCTS (0601)
HEPATITIS, ICTERUS, CIRRHOSIS (5263)
HEPATITIS, IMMUNOGLOBULIN, TRANSAMINASE (5271)
HEPATITIS, IMMUNOLOGY, ANTIGEN (0611)*
HEPATITIS, INFECTIOUS, BLOOD DONORS, SERUM TRANSAMINASES (0166)
HEPATITIS, INFECTIOUS, BLOOD GROUPS, AGE PATTERN (0626)
HEPATITIS, INFECTIOUS, CHILD (1436)
HEPATITIS, INFECTIOUS, EARLY RECONVALESCENCE (0627)
HEPATITIS, INFECTIOUS, EXERCISE (1419)
HEPATITIS, INFECTIOUS, PANCYTOPENIA (0629)
HEPATITIS, INFECTIOUS, PANCYTOPENIA, IMMUNOLOGIC PATHOGENESIS (0623)
HEPATITIS, INFECTIOUS, PREGNANCY, PUERPERIUM (1428)
HEPATITIS, INFECTIOUS, PROPHYLAXIS (2119)
HEPATITIS, INFECTIOUS, RECOVERY, REST VIGOROUS EXERCISE, SERVICEMEN (1414)*
HEPATITIS, INFECTIOUS, SERUM, ANTIGEN, IMMUNOLOGIC DISTINCTION (5253)*
HEPATITIS, ISONIAZID (2861)
HEPATITIS, JAUNDICE, CIRRHOSIS, NEOPLASM (6859)*
HEPATITIS, JAUNDICE, HEMOLYSIS (2120)
HEPATITIS, JAUNDICE, PARENCHYMAL VOLUME, STEATOSIS (5259)
HEPATITIS, KININASE ACTIVITY, PLASMA (2118)
HEPATITIS, LUPOID (2094)
HEPATITIS, MARMOSET (3640)
HEPATITIS, NEONATAL, GIGANTIC CELLS, MORPHOLOGY, HISTOLOGY (0625)
HEPATITIS, NONVIRAL, ABSCESSES (1375)
HEPATITIS, NONVIRAL, SCINTOGRAPHY (0392)
HEPATITIS, OPEN HEART SURGERY, CARDIOPULMONARY BYPASS, BLOOD SOURCES (2104)*
HEPATITIS, PANMYELOPHTHISIS, MAN (0588)
HEPATITIS, PELIOSIS, RADIOTHERAPY (5243)
HEPATITIS, RHEUMATOID, POLYARTHRITIS, BIOPSY (2083)*
HEPATITIS, SERUM, AUSTRALIA ANTIGEN (0608)*
HEPATITIS, SERUM, INFECTIOUS, HYPERLIPIDEMIA (0619)
HEPATITIS, SUBACUTE, MALIGNANT, ALCOHOLIC (0599)
HEPATITIS, TOXIC, HALOGENS (1409)
HEPATITIS, TOXIC, ISONIAZID, ENCEPHALOPATHY (0600)
HEPATITIS, TRANSAMINASE (4478)*
HEPATITIS, TREATMENT (2865)
HEPATITIS, TYPHOID (2113)
HEPATITIS, VIRAL, ACUTE, ANTIGEN, AUTOANTIBODIES (8349)*
HEPATITIS, VIRAL, ANTILIVER ANTIBODIES (0632)
HEPATITIS, VIRAL, APLASTIC ANEMIA (2867)
HEPATITIS, VIRAL, AUSTRALIA ANTIGEN (0617), (0621)
HEPATITIS, VIRAL, AUSTRALIA ANTIGEN, CHIMPANZEE (0606)*
HEPATITIS, VIRAL, AUSTRALIA ANTIGEN, DIAGNOSIS (2501)*
HEPATITIS, VIRAL, AUSTRALIA ANTIGEN, SH ANTIGEN (0619)
HEPATITIS, VIRAL, AUSTRALIA-SH ANTIGEN (0607)*
HEPATITIS, VIRAL, DIABETES MELLITUS, CHILD (0631)
HEPATITIS, VIRAL, DIAGNOSIS, PRESYMPTOMATIC, ANTIGEN (1418)
HEPATITIS, VIRAL, DRUG, INDIGENOUS (9128)
HEPATITIS, VIRAL, EPIDEMIOLOGY, INDIAN ARMY (1421)
HEPATITIS, VIRAL, ETIOLOGY, AUSTRALIA ANTIGEN (0624)
HEPATITIS, VIRAL, FECAL ANTIGEN (8347)*
HEPATITIS, VIRAL, HEPATITIS ANTIGEN, INDIAN CHILDHOOD, CIRRHOSIS, IMMUNOELECTROPHORESIS (3648)*
HEPATITIS, VIRAL, ISOLATION, STRAINS 483 AND ERIKA (0090)*
HEPATITIS, VIRAL, ISOLATION, STRAINS SEROLOGY (0605)*
HEPATITIS, VIRAL, LABORATORY DATA, CLINICAL PATTERNS (2115)
HEPATITIS, VIRAL, LEUCOCYTES, MICROSCOPY (0015)*
HEPATITIS, VIRAL, MORPHOLOGY (0753)*
HEPATITIS, VIRAL, POSTNECROTIC CIRRHOSIS, HEPATOCELLULAR CARCINOMA (1429)
HEPATITIS, VIRAL, PROPHYLAXIS, CONTROL (0630)
HEPATITIS, VIRAL, SERUM BILIRUBIN, TRANSAMINASES (1431)
HEPATITIS, VIRAL, TREATMENT (1432)
HEPATITIS, VIRUS (4488)
HEPATITIS VIRUS, PROTEIN SYNTHESIS, CELL CULTURES, ANTINUCLEAR ANTIBODY, DNA VIRUS, RNA VIRUS (5257)
HEPATITIS, VITAMIN-B12-FOLIC ACID, BILIRUBIN, TRANSAMINASES, ELECTROPHORESIS (6078)
HEPATITIS VIRUS, RENAL DIALYSIS (2116)
HEPATOBILIARY DISEASE, SERUM PROTEO-

LYTIC ACTIVITY, ALPHA2-MACROGLOBULIN (7551)
EPATOBILIARY INSUFFICIENCY, CHOLERETIC AGENT, TREATMENT (0663)
EPATOBILIARY PATHOLOGY, DIGESTIVE PATHOLOGY, STEA 16 (2847)
EPATOBILIARY TRACT, BILIARY TRACT OBSTRUCTIONS, THORACIC DUCT LYMPH, INTESTINAL ABSORBTION (1460)•
EPATOBILIARY TRACT, OBSTRUCTIVE JAUNDICE, VIRAL INFECTIONS (1453)•
EPATOBLASTOMA, ALPHA-FETOPROTEIN, DIAGNOSIS, INFANTS (0543)
EPATOBLASTOMA, ANTICARCINOGEN THERAPY, INFANT (2047)
EPATOCARCINOGENESIS, CHEMICAL, EPIPHYSECTOMY, RAT (0152)
EPATOCARCINOMA, DIETHYLNITROSAMINE, MOTOL VIRUS, LIVER PATHOLOGY (2036)•
EPATOCELLULAR CARCINOMA, DELTA1-FETOPROTEIN TEST (2528)
EPATOCELLULAR DISEASE, COAGULATION, FIBRINOGEN (5203)
EPATOCELLULAR FAILURE, DIAGNOSIS, CLINICAL FEATURES (6022)
EPATOCYTE, CORTICOSTEROID, BILE (3221)
EPATOCYTE, FAT STORAGE CELLS, SINUSOIDAL CELLS, PROTEIN DEFICIENCY (0754)•
EPATOCYTE, GOLGI APPARATUS, CHOLINE DEFICIENCY, MORPHOLOGY (0008)•
EPATOCYTE, ULTRASTRUCTURE, METAMORPHOSIS (6318), (6323)
EPATOCYTE, ULTRASTRUCTURE, OXYGEN DEFICIENCY HYPEROXIA (6849)
EPATOCYTE PEROXISOMES, ULTRASTRUCTURAL ALTERATION, CHRONIC DIETARY CLOFIBRATE, RAT (2315)
EPATOCYTE ULTRASTRUCTURE, CASTRATION, METHYLTESTOSTERONE, RATS (0022)
EPATOCYTE ULTRASTRUCTURE, 2-ACETYLAMINOFLUORENE (8639)•
EPATOCYTE WALL, CCL4 DAMAGE, TAURINE N-CARBODITHIOATE (6080)
EPATOGENIC MYOCARDOSIS, FATTY, CIRRHOSIS, PORTAL HYPERTENSION (6893)
EPATOMA, AFLATOXIN DIET (0146)
EPATOMA, ALDOLASES (6818)
EPATOMA, ALDOLASES, YOSHIDA ASCITES (5175)•
EPATOMA, AMINO ACID TRANSPORT, HORMONES, DIET, RADIOISOTOPE UPTAKE (0764)•
EPATOMA, ASCITES, MITOCHONDRIA, GLUTAMATE OXIDATION (2079)
EPATOMA, CARBOHYDRATE METABOLISM, ENZYMES (8295)
HEPATOMA, CARCINOGENESIS (4396)
HEPATOMA, CHEMOTHERAPY, RADIOTHERAPY, METHOTREXATE, ALPHA-FETOPROTEIN (7531)•
HEPATOMA, CHOLANGIOMA, PRIMARY CANCER (8310)
HEPATOMA, CIRRHOSIS (4361)•, (6829)
HEPATOMA, EMBRYO, THIOACETALMIDE (3808)•
HEPATOMA, ENZYME, INDUCTION, TYROSINE AMINOTRANSFERASE, GLUCOCORTICOID BINDING, CORTISOL, DEXAMETHASONE (5170)•
HEPATOMA, ENZYME, METABOLISM, RAT (2043)
HEPATOMA, ENZYME ACTIVITY, ADENYLATE KINASE, DIETARY FACTORS, ISOZYMES (3810)•
HEPATOMA, ENZYME ACTIVITY, HOST, ADULT RAT, BENZPYRENE HYDROXYLASE, METHYLCHOLANTHRENE (3935)•
HEPATOMA, FERRITIN (6813)
HEPATOMA, HIPPURIC ACID SYNTHESIS, AZO-DYE FEEDING, RAT (6004)
HEPATOMA, IMMUNOGLOBULIN, RAT METABOLISM, PROTEIN (1711)•
HEPATOMA, LIPID METABOLISM, MICE (3042)
HEPATOMA, LIPOGENESIS, LACK OF ADAPTATION (1766)
HEPATOMA, MICROSOMAL HYDROXYLATION, 2-ACETAMIDOFLUORENE, 3-METHYLCHOLANTHRENE (7525)•
HEPATOMA, MORRIS 5123, LIPID COMPOSITION, CYTOPLASMIC FRACTION (2077)
HEPATOMA, OLIGONUCLEOTIDES, 28S RIBOSOMAL RNA (6817)
HEPATOMA, PEROXISOMAL ENZYME (7033)•
HEPATOMA, PROTEIN, RIBOSOMES (1623)
HEPATOMA, PYRUVATE KINASE, DIET (6821)
HEPATOMA, RECURRENCE, ADOLESCENT (0554)
HEPATOMA, RIBOFLAVIN, RAT (6072)
HEPATOMA, SERUM ALBUMIN PRODUCTION (0137)
HEPATOMA, SYMPOSIUM (1378)
HEPATOMA, TRANSPLANTABLE, CROCKER SARCOMA, MICE (0558)
HEPATOMA, ULTRASTRUCTURE, AZO DYES (0159)
HEPATOMA ASCITES CELL, ULTRASTRUCTURE, NUCLEASE, PROTEASE (6765)•
HEPATOMEGALY, AMEBIASIS, ORNITHINE-CARBAMYL TRANSFERASE, RADIOGRAPHY, DIURESIS (5397)•
HEPATOMEGALY, BIOPSY, DIAGNOSIS (8050)
HEPATOMEGALY, DIABETIC ACIDOSIS (2833)
HEPATOMEGALY, EPIDEMIOLOGY, CLINICAL PATTERN, INDIAN CHILDREN (1349)•
HEPATOMEGALY, PATHOLOGY (1356)
HEPATOMEGALY, REYE'S SYNDROME, PERITONEAL DIALYSIS (6018)
HEPATOPROTECTIVE EFFECTS, AMINO ACIDS, KREBS-HENSELEIT CYCLE (0570)
HEPATOPROTECTOR, POLYVALENT, HEPATITIS, CHRONIC IMMUNOGLOBULINS, CIRRHOSIS (0577)
HEPATO-RENAL INSUFFICIENCY, CHOLEDOCHOLITHIASIS, OBSTRUCTIVE JAUNDICE (7658)
HEPATO-RENAL POLYCYSTIC DISEASE (2848)
HEPATO-RENAL SYNDROME, ETIOLOGY (4399)
HEPATO-RENAL SYNDROME, KIDNEY TRANSPLANT (6035)
HEPATOSCLEROSIS, CIRRHOSIS, HEPATECTOMY, RAT (0157)
HEPATOSIS, CHOLESTASIS (8290)

LIBRARY U. OF I. URBANA-CHAMPAIGN

HEPATOSIS, ALCOHOLISM, FATTY, SILYMARIN, PARENCHYMAL DAMAGE, BLOOD CHEMISTRY, ELECTRON MICROSCOPY (5165)
HEPATOSPLENIC RHEOGRAPHY, INFINITE TIME CONSTANT (0024)
HEPATOSPLENIC SCHISTOSOMIASIS, NICARBAZIN, MOUSE (6269)
HEPATOSPLENOMEGALY, MUCOPOLYSACCHARIDOSIS, HURLER'S DISEASE, HUNTER'S DISEASE, BUHOT CELLS, CORNEAL OPACITY, ELECTRON MICROSCOPY (5676)
HEPATOTOXICITY, CARBON TETRACHLORIDE (1417)*
HEPATOTOXICITY, INHALATION ANESTHESIA, ETHER, METHOXYFLURANE, THIOPENTONE, HYDROXYDIONE (3544)*
HEREDITARY FRUCTOSE INTOLERANCE (4259)
HERNIA, DIAPHRAGM (4418)
HERNIA, SCAN, DIAGNOSIS (4031)
HERPES SIMPLEX HEPATITIS, JAUNDICE, EROSIVE GASTRITIS, GASTROINTESTINAL BLEEDING, ADULT (0612)
HETEROTOPIC TRANSPLANT, ANATOMICAL AND PHYSIOLOGICAL REQUIREMENTS, PIG (9071)
HETEROTOPIC TRANSPLANT INDICATIONS, CHRONIC HEPATIC INSUFFICIENCY, MAN (9072)
HILUM, CARCINOMA, ANATOMY, HISTOLOGY (6825)
HILUS, COLLATERAL ARTERIES (2497)
HISTOCHEMICAL ALTERATIONS, ENDOCRINE DISORDERS, RAT (8536)
HISTOCHEMICAL ALTERATIONS, THYRO METIZOLE, ATPASE ACTIVATION, RAT (0023)
HISTOCHEMICAL INVESTIGATION, PARENCHYMAL ORGANIZATION, ENZYMES (0738)*
HISTOCHEMISTRY, ASPERGILLUS PARASITICUS, BILE CANALICULI, HEPATOCYTES, PATHOLOGY (4444)*
HISTOCHEMISTRY, CHOLECYSTOPANCREATITIS (8254)
HISTOLOGY, CHRONIC HEPATITIS, ACTIVE AND PERSISTENT, PATHOGENESIS (9148)
HISTOCHEMISTRY, ENZYMES, MORPHOLOGY, FETUS (0001)*
HISTOCHEMISTRY, ENZYME ACTIVITY, MITOCHONDRIA, GLYCEROPHOSPHATE ACYLTRANSFERASE (5421)*
HISTOCHEMISTRY, ENZYME ACTIVITY, MITOCHONDRIA, PHOSPHOENOLPYRUVATE CARBOXYKINASE, HYDROCORTISONE (3805)*
HISTOCHEMISTRY, HORMONE TRANSPORT, CORTISOL, CYTOPLASM, NUCLEUS, CHROMATIN (3814)*
HISTOCHEMISTRY, IRON METABOLISM, CELL MEMBRANES, FERRITIN STORAGE, CYTOCAVITY NETWORK, PARENCHYMA (3797)*
HISTOCHEMISTRY, MICROSOMES, HYDROXYLATION, TESTOSTERONE, THYROIDECTOMY, THYROXINE (3954)*
HISTOCHEMISTRY, MITOCHONDRIA, MEMBRANE, MONOAMINE OXIDASE, ENZYME MARKER (5440)*
HISTOCHEMISTRY, MITOCHONDRIA, MICROSOME, CHOLESTEROL ACYLTRANSFERASE (5422)*
HISTOCHEMISTRY, NUCLEOPLASM, DNA, RNA (3804)*
HISTOCHEMISTRY, NUCLEUS, ENZYME, LYSOSOMES, HYDROLASES, DISTRIBUTION (3799)*
HISTOCHEMISTRY, NUCLEUS, ENZYME ACTIVITY, PALMITOYL-COA SYNTHETASE (3803)*
HISTOCHEMISTRY, RNA, ANESTHESIA (1584)
HISTOCHEMISTRY, THIOPENTAL, RAT (7980)
HISTOCYTES, HEPATITIS, VIRUS GRANULES (0633)
HISTOLOGY, EXPERIMENTAL HEPATITIS, ANTILYMPHOCYTE GLOBULIN TREATMENT, MOUSE (9097)
HISTOLOGY, FETAL AND ADULT STAGE, MAN (8535)
HISTOLOGY, FUNCTION, PULMONARY TUBERCULOSIS (6988)
HISTOLOGY, HEPATITIS, SERUM IMMUNOGLOBULINS (9101)
HISTOLOGY, LUPOID HEPATITIS, LUPUS ERYTHEMATODES VISCERALIS (8332)
HISTONE, METHYLASE ACTIVITY, EMBRYONIC ADULT, NEOPLASTIC TISSUE (7952)
HISTONE KINASES, ADENOSINE 3'-5'CYCLIC PHOSPHATE (7022)*
HISTONE PHOSPHORYLATION, HEPATOMA ASCITES CELLS (0153)
HISTONE UPTAKE, PERFUSED, INTESTINE, KIDNEY (6457)
HISTOPATHOLOGY, BILE DUCT ATRESIA, INFANT (9195)
HISTOPATHOLOGY, INFECTIOUS MONONUCLEOSIS, HEPATITIS (9123)
HISTOPATHOLOGY, PARENCHYMA, GALLBLADDER DISEASE (2917)
HOMOGENATES, CHOLESTEROL BIOSYNTHESIS (6426)*
HOMOGENATE, OXIDATION, GLUTATHIONE, RAT (5586)*
HOMOGENATE, PATHOLOGY, BIOCHEMISTRY, IMMUNOLOGY (4434)
HOMOTRANSPLANT, BILE, HOST (6826)
HOMOTRANSPLANT, COAGULATION, FIBRINOLYSIS (2453)
HOMOTRANSPLANT, REJECTION, BILIRUBIN, ENZYME ACTIVITIES (6767)*
HOMOTRANSPLANTATION, ENTERIC VASCULAR NETWORK (0115)
HORMONES, MITOCHONDRIA, CO2 FIXATION, RAT (0862)
HYDATID CYST, ARTERIOGRAPHY (4681)
HYDATID CYST, ARTERIOGRAPHY, CELIAC TRUNK, CYSTECTOMY (4934)
HYDATID CYST, BILIARY TRACT, CHOLANGIOGRAPHY, ODDI'S SPHINCTER (5401)
HYDATID CYST, DIAGNOSIS (3007)
HYDATID CYST, LAPAROSCOPY, ARTERIOGRAPHY, IMMUNOELECTROPHORESIS, CYSTECTOMY (5402)
HYDATID CYST, RUPTURE, BILIARY DUCTS (1535)
HYDATID CYST, RUPTURE, SMALL INTESTINE (1561)

HYDATID CYST, SCINTOGRAPHY, ECHINOCOCCOSIS, TUMOR (4946)
HYDATID CYST, SURGERY, DELAYED RESULTS (9132)
HYDATID CYST SCINTOGRAPHY, AU 198 (6578)
HYDATIDOSIS, GAMMAGRAPHY, SPLENOPORTOGRAPHY (4086)
HYDATIDOSIS, INDIA (7020)
HYDATIDOSIS, LIVER GRANULOMA, INTESTINAL PARASITE (1541)
HYDATIDOSIS, SURGERY, BILIARY TRACT (5400)
HYDATIDOSIS, THERAPY (0598)
HYDROGEN ION, INTRACELLULAR ACTIVITY, RAT (1611)
HYDROGENATES, DIETHYLSTIBESTEROL MONOGLUCURONIDE FORMATION, HAMSTER (1748)
HYDROLYSATE, ANTITOXIC FACTOR, SURGERY, HEPATIC CIRRHOSIS, ESOPHAGEAL VARICES, SERUM PROTEIN FRACTION (2905)
HYDROXYLAMINE DERIVATIVE EFFECT, CHOLESTEROL, RAT (5565)*
HYDROXYUREA, UREA (7945)
HYPERBILIRUBINEMIA, FUNCTIONAL, CHILDREN (1369)
HYPERBILIRUBINEMIA, FUNCTIONAL ASPECT, ULTRASTRUCTURE (3670)
HYPERLIPEMIC SERUM, TRIGLYCERIDES, FATTY ACIDS (7164)
HYPERPLASIA, PONCEAU-MX, RAT (1504)*
HYPERPLASTIC NODULES, CARCINOGEN INDUCTION, IN VITRO GROWTH, RAT (1754)
HYPERTENSION, HEMORRHAGE, SURGERY (4618)
HYPERTENSION, SPLEEN, CIRRHOSIS (7546)
HYPERTENSIVE, STEROID REDUCTION, 4-3-KETOSTEROID (8430)*
HYPERTHYROID, GLUCOKINASE, GLUCOSE-6-PHOSPHATASE (7135)*
HYPERTROPHIC OSTEOARTHROPATHY, CIRRHOSIS (4520)
HYPERTROPHY, STEATOSIS, HYPERPHAGIA, HYPOTHALAMIC LESION, GOOSE (5188)
HYPOBARIC CONDITIONS, MITOCHONDRIAL SUCCINATE DEHYDROGENASE, ACTIVATION, RATS (0369)
ICTERUS, GRAVIDARUM, DIAGNOSIS (3681)
IDIOPATHIC JAUNDICE, LATE PREGNANCY, ELECTRON MICROSCOPY (6771)*
IMIPRAMINE METABOLISM, STRAIN DIFFERENCES (7190)
IMMUNOGLOBULIN, IG-CELL (0733)*
IMMUNOGLOBULIN, SERUM BILIRUBIN, TRANSAMINASE (7904)*
IMMUNOLOGY, ADRENAL CORTEX (4432)
IMMUNOLOGY, CHRONIC HEPATITIS, PATHOLOGY (0637)*
INBORN ERRORS OF METABOLISM, GALACTOSEMIA, INFANTS (9047)
INBORN FRUCTOSE INTOLERANCE, LACK OF FRUCTOSE-1-P, SPECIFIC ALDOLASE, TYROSINE METABOLISM (8313)
INFECTIOUS HEPATITIS, BILE ACID, STEROID SULPHATE, CONCENTRATION, SERUM (5254)*
INFECTIOUS HEPATITIS, CHRONIC HEPATIC DISORDER (2880)
INFECTIOUS HEPATITIS, DOWN'S SYNDROME (3634)
INFECTIOUS HEPATITIS, EPIDEMIC, CHILDREN, IMMUNOGLOBULIN (9140)
INFECTIOUS HEPATITIS, EPIDEMIC, SCHOOL (3638)
INFECTIOUS HEPATITIS, LYMPHOBLASTOID CULTURE (2106)*
INFECTIOUS HEPATITIS, PROPERDIN, CIRRHOSIS, CHOLECYSTOPATHY, UNSPECIFIC IMMUNITY, NEWCASTLE DISEASE (5202)
INFECTIOUS MONONUCLEOSIS, RENAL INVOLVEMENT (6999)
INFILTRATION, GRAFT VS HOST REACTION, DONOR PRESENSITIZATION (3190)
INFLAMMATORY, CONTROL (4467)
INFUSION, 5-FLUORO-2'-DEOXYURIDINE (7728)
INJURY, ALCOHOL, HISTAMINE (7575)*
INJURY, AMINO ACID (4461)
INJURY, CARBON TETRACHLORIDE, ASCORBIC ACID, RAT (0141)
INJURY, CARDIOPATHOGENIC DIET, ATP-SPOFA, HISTOLOGY (5993)*
INJURY, CATABOLISM, HYDROCORTISONE (6432)*
INJURY, CIRCULATION, LYMPHATICS, CIRRHOSIS (6904)
INJURY, COMMON BILE DUCT DRAINAGE, CAT (0685)
INJURY, DIABETES MELLITUS, CIRRHOSIS (7597)
INJURY, ETHIONINE, POLYRIBOSOMES, NUCLEOLUS (8317)*
INJURY, HEART SURGERY (4470)
INJURY, INFLAMMATION, SERUM GLYCOPROTEIN (4465)
INJURY, INHALATION ANESTHETICS, HISTOPATHOLOGY, CYCLOPROPANE, CHLOROFORM, DIETHYL ETHER, HALOTHANE, METHOXYFLURANE (3592)*
INJURY, INTRAHEPATIC SHUNT (8321)*
INJURY, LIPID METABOLISM, CHOLESTASIS, BILIRUBIN, ENZYME (4472)
INJURY, MEGALOCYTOSIS, PYRROLIZIDINE INDUCED (8322)*
INJURY, PROTECTIVE AGENTS, ALLYL ALCOHOL, BSP TEST, STATISTICAL EVALUATION, RAT (4895)
INJURY, PROTEIN, DIET (5250)
INJURY, RADIATION, RNA, ATP (8338)
INJURY, STOMACH SECRETION, HISTAMINE (1026)*
INJURY, SURGERY (6786)
INJURY, THYROID, BSP (8319)*
INJURY, UMBILICAL VEIN HEPATOGRAPHY (4058)
INNERVATION, MONAMINERGIC, ANIMAL (2464)
INOSITOL COMPOUNDS, RAT (5430)*
INSUFFICIENCY, BILIARY HYPERTENSION, CIRRHOSIS, TUMOR, TREATMENT (6011)
INSUFFICIENCY, ENCEPHALOPATHY (6024)
INSUFFICIENCY, CHOLEMIA, GLYCOGENOSIS, GALACTOSE, FRUCTOSE, HYPERBILIRUBINEMIA, DETOXIFICATION, ENZYMATIC DEFICIT (5191)

INSUFFICIENCY, CIRRHOSIS (4517)
INSULIN, GLUCAGON, HISTONE, PHOSPHORYLATION (2421)•
INSULIN, POTASSIUM, SH-COMPOUNDS (1743)
INSULIN, TRANSKETOLASE, CARBOHYDRATE METABOLISM, RABBIT (0898)
INTERMEDIARY METABOLISM, GLUCOCORTICOID, COW (3204)
INTESTINE, ROUNDWORM, PARASITOLOGY (3012)
INTRAHEPATIC BILE DUCT, ANEURYSMAL DILATION, SURGERY, CHILDREN (6808)
INTRAHEPATIC BILE DUCTS, HYPOPLASIA, PARENCHYMAL GIANT-CELL TRANSFORMTION, FAMILIAL INCIDENCE (0576)
INTRAHEPATIC PRESSURE, FATTY INFILTRATION (6563)
INTRAHEPATIC SHUNT, DIAGNOSIS BY RADIOISOTOPE (3300)
INTRAPORTAL INFUSION, ACUTE HEPATIC INSUFFICIENCY, HEPATIC REGIONAL HYPOXEMIA, COMPENSATORY MECHANISMS (3546)•
INVOLVEMENT, GOUT (4442)
IODINE COMPOUNDS, TOXICITY, UROGRAPHY (8748)
IODOTYROSINE DEIODASE, THYROID (3850)
IOGLYCAMIDE, BILIRUBIN, CHOLESTEROL (6797)
IRON ACCUMULATION, HUMAN-PHANTOM-REMCAL, RADIOIRON KINETICS, HEMATOLOGICAL DISEASE (5251)
IRRADIATION, CHILDREN, SURGERY (2836)
IRRADIATION, METABOLISM, RAT (0870)
ISCHEMIA, METABOLITE CONCENTRATIONS, NAD, ATP (3942)•
ISCHEMIA, PORTACAVAL SHUNT, COAGULATION (6763)•
ISCHEMIA, PROPHYLACTIC, METHYLPREDNISOLONE, PHENOXYBENZAMINE (2271)•
ISOANTIGENS, IMMUNOFLUORESCENCE REACTION, HUMORAL ANTIBODY RESPONSE HEPATOMA CELLS (1581)•
ISOENZYME, DIAGNOSIS (4037)
ISOENZYME, PROTEIN, RAT, GUANINE DEAMINASE (5453)
ISOENZYME, PURIFICATION, HUMAN, CHICKEN (4717)
ISOENZYME CLINICAL SIGNIFICANCE (6166)
ISOLATED CELL, SODIUM TETRAPHENYLBORON MORPHOLOGY (7795)•
ISOLATED CELLS, FACTORS VII-X SYNTHESIS, VITAMIN K, RAT (0822)•
ISOLATED MITOCHONDRIA, THYMIDINE INCORPORATION, DNA, RAT (3069)
ISOLATED NUCLEI, LYSOSOMAL HYDROLASES, RAT (8518)
ISOTOPE CLEARANCE, PORTAL FLOW MEASUREMENT (8733)
JAUNDICE, CHRONIC, DUBIN-JOHNSON'S SYNDROME, ROTOR'S SYNDROME (5219)
JAUNDICE, CONGENITAL NONOBSTRUCTIVE NONHEMOLYTIC, PHOTOTHERAPY, INFANT (2037)•
JAUNDICE, DIAGNOSTIC PROCEDURE, BILE SALT (8312)
JAUNDICE, DUBIN-JOHNSON SYNDROME, HYPERBILIRUBINEMIA (3646)
JAUNDICE, EXPLORATION, SURGERY (1412)
JAUNDICE, HEPATITIS, CIRRHOSIS, ABSCESS, AFRICA (2167)
JAUNDICE, HEPATITIS, DIAGNOSIS, INFANTS, ONE-STAGE PROTHROMBIN, TAME ESTERASE PROTHROMBIN (5661)•
JAUNDICE, HEPATITIS, PORPHYRURIA, GASTRIC MUCOSA (6841)
JAUNDICE, HEPATITIS, SURGERY, OPEN-HEART (2885)
JAUNDICE, ISONIAZID, FATAL (2098)
JAUNDICE, PERCUTANEOUS CHOLANGIOGRAPHY, DECOMPRESSION (0957)
JAUNDICE, PREGNANCY (4422)
KAMAGASAKI'S, FATTY METAMORPHOSIS (0585)
KERATAN SULFATES, GMI-GANGLIOSIDOSIS TYPE I, LYSOSOMAL HYDROLASES (9043)•
KETONE BODIES, TYROSINE ALPHA-KETOGLUTARATE TRANSAMINASE (8664)
KIDNEY, DISEASE, FIBRIN-STABILIZATION FACTOR, METHODOLOGY (2054)
KIDNEY, INFECTIOUS MONONUCLEOSIS (7545)
KIDNEY, MAN (0648)
KIDNEY, MOUSE, ESTERASE (7037)•
KIDNEY, XANTHINE DEHYDROGENASE, STARVATION (8625)•
KUPFFER CELL, METABOLISM, PHAGOCYTOSIS (6427)•
KWASHIORKOR, RAT, ULTRASTRUCTURE (7681)•
LABELED COPPER, WILSON'S DISEASE, PRESYMPTOMATIC, PENECILLAMINE (0546)
LABELED NICOTINE, METABOLISM, IN VITRO (0891)
LACTATE DEHYDROGENASE, ISOENZYME CARANOGEN, COPPER, MORPHOLOGY (5994)•
LACTIC DEHYDROGENASE ISOENZYMES, CHRONIC HEPATITIS, CHOLELITHIASIS (8296)
LAENNEC'S CIRRHOSIS, ASCITES (1447)
LAENNEC'S CIRRHOSIS, GROWTH HORMONE, DIABETES (9153)•
LAENNEC'S CIRRHOSIS, HEMOCHROMATOSIS, ENDOCRINE ABNORMALITIES (2151)
LAENNEC'S CIRRHOSIS, SEROTONIN, METABOLISM, DISTURBANCE (2900)
LAPAROSCOPY, CRUVEILHIER-V. BAUMGARTEN SYNDROME, PORTOUMBILICAL ANASTOMOSIS CIRRHOSIS (6573)
LECITHIN-CHOLESTEROL ACYLTRANSFERASE, CHOLESTEROL (5167)•
LEFT LOBECTOMY, METASTATIC COLONIC CARCINOMA, LONG-TERM SURVIVAL (0433)
LEISHMANIASIS, KALA-AZAR, VISCERAL, IMMUNOFLUORESCENCE (5675)
LESION, ALCOHOL, ENZYME (3611)
LESION, ARTERIO-PORTAL FISTULA, SULFOBROMOPHTHALEIN CLEARANCE (9084)
LESION, CARCINOGEN, SEX, AGE, RAT (6057)•
LESION, 5-HYDROXYTRYPTAMINE-INDUCED (8327)•
LESION, GASTRECTOMY, ENCEPHOPATHY, HYPERAMMONEMIA, HEPATIC CIRRHOSIS (4950)
LESION, LANTANA CAMARA, SHEEP (1595)

LESION, LUNGS, PYRROLE DERIVATIVES, PYRROLIZIDINE ALKALOIDS (6844)
LESION, PB POISONING, CALCIULATA PROTECTION (4453)
LESION, SCHISTOSOMA JAPONICUM, EGGS (9271)
LESION, SHOCK, HEART DISEASE (4598)
LESION, ULTRASOUND (1407)
LESION, VASCULAR, AVASCULAR, DIFFERENTIATION, LIVER SCAN (4891)•
L-GLUTAMINE, CHOLESTEROL, D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE (7181)
LIPID, CARBON TETRACHLORIDE, METABOLISM (3167)•
LIPID, CARBON TETRACHLORIDE, ORGANELLE (3937)•
LIPID, FATTY ACID COMPOSITION, ETHIONINE, RAT (2433)
LIPID, GLUCAGON, PLASMA, FATTY ACID, TRIGLYCERIDE (3967)
LIPID, HEPATECTOMY, METABOLISM (3949)•
LIPID, JAUNDICE, EXTRAHEPATIC CHOLESTASIS (9081)
LIPID, LOBE LIGATION, RAT (1597)
LIPID, METABOLISM, BIOPSY, UNSATURATED FATTY ACIDS, ALCOHOLISM, MITOCHONDRIA (5234)
LIPID, METABOLISM, PROTEIN DEFICIENCY (4569)•
LIPID, PEROXIDATION, STEATOSIS, CCL4 (5991)•
LIPID, PREGNANCY (5245)
LIPID, SPECTROPHOTOMETRIC METHOD, FATSPECIFIC DYE, FATTY DEGENERATION, HISTOCHEMICAL METHOD (5164)
LIPID, TAY-SACHS' DISEASE, BIOCHEMISTRY (2059)
LIPID, UPTAKE, CIS-FATTY ACIDS, TRANS-FATTY ACIDS (7160)•
LIPID ANALYSIS, SUBCELLULAR FRACTION, CHOLESTEROL, RAT (3815)•
LIPID BIOSYNTHESIS, GLYCEROL INCORPORATION, ATP (6442)•
LIPID METABOLISM, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)•
LIPID METABOLISM, LINOLEATE DEFICIENCY MOUSE (6489)
LIPID METABOLISM, LIPOGENESIS (7139)•
LIPIDOSIS, WOLMAN'S DISEASE, NECROSIS AND FIBROSIS, INTESTINAL MALABSORPTION (9074)
LIPOGENESIS, DIETARY FAT, LACTATING AND VIRGIN MICE (1751)
LIPOGENESIS, FATTY ACID SYNTHESIS, GLYCOGEN (6434)•
LIPOGENESIS, GROWTH, HORMONES, ENZYMES (6423)•
LIPOMA, CASE REPORT (9077)
LIPOPROTEINEMIA, HEPATITIS, CIRRHOSIS (4040)
LITHIASIS, GALLBLADDER (4419)
LOBECTOMY, ANESTHESIA (4480)
LOBECTOMY, HEPATOBLASTOMA, CHEMOTHERAPY, RADIOTHERAPY, INFANT (8308)
L-SERINE DEHYDRATASE, CASEIN HYDROLYSATE, STARVATION (7120)•
LUPOID HEPATITIS, AUTOIMMUNITY (2085)
LUPOID HEPATITIS, JAUNDICE (6109)
LYMPHANGIOGRAPHY; ANATOMOPATHOLOGY, SEMINOMAL METASTASIS (3552)
LYMPHOCYTE SYSTEM, HEPATITIS (3604)
LYMPHOCYTIC INFILTRATION, SINUSOIDS, PORTAL TRACT, FELTY'S SYNDROME (3649)•
LYSINE COMPARTMENT, METABOLISM (7771)•
LYSOSOMAL ENZYMES, STILBAMIDINES (7104)•
LYSOSOMAL FRACTION, ACID PHOSPHATASE, RAT (2278)•
LYSOSOME, ADRENALECTOMY, RAT (7818)
LYSOSOME, LIPOPROTEIN, KIDNEY, ISOLATION (6338)
LYSOSOME, NUCLEIC ACID, TUMOR (1712)•
LYSOSOME, NUCLEOSIDE DIPHOSPHATASE, RAT (1603)
LYSOSOME, PERMEABILITY, CARBOHYDRATE (1622)
MAC DONALD DIET, CHOLINE, IRON, STEATOSIS, GROWTH, LIPIDS (5608)
MAGNESIUM DEFICIENCY, POLYSOME STRUCTURE, RIBONUCLEASE, ENZYMES AND INHIBITORS (1708)•
MALARIA, LYMPHOCYTOSIS (4660)•
MALIGNANT HEPATOMA, BIOLOGIC TEST (4073)
MALIGNANT HEPATOMA, CIRRHOSIS, NEEDLE BIOPSY (2814)
MALIGNANT SECONDARY DEPOSITS, EXCISION (2050)
MALIGNANT TUMOR, IDENTIFICATION (0563)
MALIGNANT TUMOR, SERUM ENZYME (2035)•
MALLORY BODIES, FATTY INFILTRATION, CIRRHOSIS (9042)•
MALNUTRITION, CHILDREN (1391)
MANAGEMENT, CRITICAL CONSIDERATIONS (4397)
MECHANICAL JAUNDICE, CHOLEDOCHOLITHIASIS, PERFORATION (0682)
MEMBRANE, ELECTRON MICROSCOPY (7797)•
MEMBRANE, MICROSOMAL, CYTOCHROME, INDUCTION, MECHANISM (4832)•
MEMBRANE, PERMEABILITY, CIRCADIAN (7975)
METABOLIC CHANGES, ETHANOL, DINITROPHENOL (3962)
METABOLIC DISTURBANCE, CITRATE ADMINISTRATION, RAT (1757)
METABOLISM, AFLATOXIN, RNA (7171)
METABOLISM, AMINO ACID, GLUCOSE, BLOOD IN-FLOW AND OUT-FLOW, NEONATE (2458)
METABOLISM, AMINO ACIDS, HYPERGLYCEMIA, GLUCONEOGENESIS (8627)•
METABOLISM, AMINO ACID, SPLEEN (4847)
METABOLISM, AMINOACYL-TRNA SYNTHESIS, CHOLESTERYL ESTERS (7154)•
METABOLISM, ANILINE, HEXOBARBITAL, SATURATED FAT DIET (3189)
METABOLISM, AROMATIC HYDROCARBONS, ANTHRACENE, DIHYDRODIOL, CARCINOGEN, RATS (5571)•
METABOLISM, BARBITURATES, ENZYME INDUCTION (8673)
METABOLISM, BILE ACID KINETICS, MAN (7184)
METABOLISM, CARBOHYDRATE, LIPID, NAD+ (7144)•

METABOLISM, CARBON TETRACHLORIDE (3217)
METABOLISM, CARBON TETRACHLORIDE, ESTRADIOL (6449)*
METABOLISM, CHOLESTEROL, SQUALENE (3223)
METABOLISM, CHROMATOGRAPHY (2441)
METABOLISM, DAMAGE, HALOTHANE EFFECT (8344)
METABOLISM, D-FRUCTOSE (5211)
METABOLISM, ENZYME, CHICK (6228)
METABOLISM, ENZYME, CORTISOL (3857)
METABOLISM, ETHANOL, GLUCONEOGENESIS (6075)
METABOLISM, FATTY ACID SYNTHETASE, BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
METABOLISM, GLUTAMINE, PH EFFECT, ACIDOSIS (8616)*
METABOLISM, GLUTATHIONE CONJUGATE OF 2-HYDROXYOESTRADIOL (3209)
METABOLISM, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)*
METABOLISM, GLYCOGEN, SYNTHESIS, BIOTIN DEFICIENCY (4836)*
METABOLISM, HEPATECTOMY, URETHAN (7885)*
METABOLISM, HEPATIC GLYCEROLIPIDS, ETHANOL, GLYCEROLIPIDS (0837)*
METABOLISM, HEXOBARBITAL, HEPTACHLOR, ANILINE, CORN OIL DIET (3192)
METABOLISM, IMMUNOGLOBULIN TURNOVER, HEPATITIS (6855)*
METABOLISM, INDOSPICINE, AMINO ACID, PROTEIN, NUCLEIC ACID (5568)*
METABOLISM, INSTANT DIABETES, MANNO-HEPTULOSE, HYPERGLYCEMIA (5609)
METABOLISM, IN VITRO, ENATIOMERS, AMPHETAMINE, BENZPHETAMINE (5577)*
METABOLISM, LOBECTOMY, FUNCTION TESTS, PRE- AND POSTOPERATIVE MANAGEMENT (4362)*
METABOLISM, LYNESTRENOL (6460)
METABOLISM, LYSOLEATHIN, DUODENUM (5621)*
METABOLISM, MICROSOME, NADPH, CYTOCHROME C REDUCTASE (6420)*
METABOLISM, MORPHOLOGY, ENZYME (3579)
METABOLISM, N-HYDROXY-N-2-FLURENYL-ACETAMIDE, MICROBIAL FLORA OF GUT, N-DEHYDROXYLASE, GLUCURONIDE (3230)
METABOLISM, NICOTINATE, HEXESTROL (2399)*
METABOLISM, N-METHYLCARBAMATES, MAN, RAT (7942)
METABOLISM, OROTIC ACID SYNTHESIS, BARBITURATES (5593)
METABOLISM, OXIDATION, GLUTATHIONE, THIOL (5576)*
METABOLISM, PHOSPHATIDYLINOSITOL, RAT (6464)
METABOLISM, RESPIRATION, MBBA, CYTENBENA, 4-METHOXYBENZOIC ACID, OXIDATIVE PHOSPHORYLATION (2427)
METABOLISM, RESPONSE, PORTACAVAL SHUNT (7905)*
METABOLISM, RIBOSOME (2438)
METABOLISM, SEPTIC SHOCK, SURGERY (7415)
METABOLISM, 17-KETOSTEROIDS, ANDROSTENEDIOL, 17-B-HYDROXYSTEROID, ETHANOL (3173)*
METABOLISM, STARVATION, CARBOHYDRATE (5635)
METABOLISM, SUBSTRATE, BETA-GLUCURONIDASE (7032)*
METABOLISM, SULFUR, WILSON'S DISEASE (2040)
METABOLISM, SYNTHESIS OF NON-HISTONE PROTEINS, HEPATOMA 223, OSMOTIC SHOCK, ELECTROPHORESIS (2033)*
METABOLISM, TRIGLYCERIDES, CHYLOMICRON, LIPOPROTEIN (3161)*
METABOLISM, VITAMIN B12 ABSORPTION, INTESTINAL ABSORPTION, PROFILE SCANNING (5075)*
METABOLISM, WILSON'S DISEASE, GENETICS (6811)
METABOLISM, XANTINOL NICOTINATE (7961)
METALLOTHIONEIN, CADMIUM, SELECTIVE BINDING (8648)
METAL-PROTEIDIC COMPLEXES, COBALT, GASTROINTESTINAL TRACT (3116)
METASTASES, ALKALINE PHOSPHATASE, LAPAROSCOPY, HYPOCHONDRIUM, DYSPEPSIA, EPIGASTRIUM (5204)
METASTASES, BENIGN, CHOLANGIOMA, DIAGNOSIS (0952)*
METASTASES, CANCER, COLON, RECTUM, CHEMOTHERAPY, ARTERIAL INFUSION, SURGERY (5198)
METASTASES, CARCINOID TUMOR, RADIOTHERAPY (9069)
METASTASES, CARCINOMA, PITUITARY GLAND (2051)
METASTASES, CIRRHOSIS, SCANNING, COLLOIDAL RADIOGOLD, RADIOIODINE, SCINTIGRAM, TECHNETIUM (4922)
METASTASES, DIAGNOSIS, NAI131 TEST (4027)
METASTASES, GAMMA-GLUTAMYL-TRANSPEPTIDASE, ALKALINE PHOSPHATASE, OBSTRUCTIVE JAUNDICE (4936)
METASTASES, HEPATOGRAPHY WITH LIPIODOL ABDOMINAL TUMORS (8718)
METASTASIS, HEPATOMA, ULTRASTRUCTURE, CHICK EMBRYO (8050)
METASTASES, METABOLISM, 5-FLUOROURACIL PANCREATIC CARCINOMA (6014)
METASTASES, SCREENING, ENDOSCOPY (3284)
METASTASES, TREATMENT (3563)
METASTASIS, LUNG CARCINOMA (7558)
METASTATIC CANCER, PRIMARY, SECONDARY (4378)
METHIONINE, ADENOSINE TRIPHOSPHATE, ADENINE, GUINEA PIG (4446)*
MICROBODY, CATALASE (3576)
MICROCIRCULATION, PORTAL HYPERTENSION (6805)
MICROLIPIDS, BIOPSY, TRIGLYCERIDES, STEATOSIS (4896)
MICROSOMAL BIOTRANSFORMATION, CHOLESTASIS (2908)*
MICROSOMAL ENZYME, BENZO(A)PYREN BREAKDOWN, AIRBORNE DUST EXTRACTS POLYAROMATIC HYDROCARBONS, RAT (3183)

ICROSOMAL ENZYME, SLEEPING TIME, PENTOBARBITAL, PHENOBARBITAL, INDUCTION, REVERSIBILITY, MICE (4743)
ICROSOMAL ENZYME, SPIRONOLACTONE, INDUCTION, MOUSE (7941)
ICROSOMAL ENZYME FUNCTION, METHYLENEDIOXYPHENYL COMPOUNDS, MICE (3059)
ICROSOMAL FACTOR, PROTEIN SYNTHESIS (2064)
ICROSOMAL INDUCTION, DDT, PHENOBARBITONE, POISON (8341)
ICROSOMAL MEMBRANES, VITAMIN E, PEROXIDATION INHIBITION (6305)•
ICROSOMAL MIXED FUNCTION, OXIDASE, D20 INHIBITION (8623)•
ICROSOMAL NADPH-CYTOCHROME C REDUCTASE, DIAPHORASE, TRANSHYDROGENASE (0125)
ICROSOME, ALIPHATIC HYDROXYLATION (7897)•
ICROSOME, ENZYME, AMINO ACID, NI 2+-IONS, ATP (3087)
ICROSOME, APO-CYTOCHROME 65 (6315)
ICROSOME, CYTOCHROME, AMINO ACID (1741)
ICROSOME, CYTOCHROME, HEME, PORPHYROGENIC AGENT (3041)
ICROSOME, CYTOCHROME B5, PEPTIDE FINGERPRINT (1616)
ICROSOME, CYTOCHROME P-450, EPR (7801)
ICROSOME, DI- AND TRI-GLYCERIDE SYNTHESIS (2428)
ICROSOME, DRUG METABOLISM, MAGNESIUM, DIVALENT CATIONS, RAT (3072)
ICROSOME, DRUG METABOLISM, NICOTINAMIDE (7918)•
ICROSOME, DRUG METABOLISM, POSTMORTEM (8624)•
ICROSOME, DRUG OXIDATION (7925)
ICROSOME, DRUG OXIDATION, REGULATION (7967)
ICROSOME, 18-HYDROXYLASE, C19 STEROID (6445)•
ICROSOME, ENDOPLASMIC RETICULUM, HEMOPROTEIN, CO-BINDING PIGMENT (6452)•
ICROSOME, ENZYME, BARBITURATE, RAT (5601)
ICROSOME, ENZYME, DRUG METABOLISM, INHIBITION, HYDRAZINES (2298)
ICROSOME, ENZYME, INTESTINAL OBSTRUCTION, DRUGS (1950)
ICROSOME, ENZYME, PHENOBARBITONE (3046)
ICROSOME, ENZYME, RAT (4716)
ICROSOME, ENZYME, STEROID GLUCOSIDE, SYNTHESIS, RABBIT (2447)
ICROSOME, ENZYME, WAX (4720)
ICROSOME, ENZYME STIMULATION, ANTIOXIDANT (1614)
CROSOME, ETHANOL, ENZYME, UDPGT ACTIVITY (5604)
CROSOME, ETHANOL METABOLISM, RAT (7888)•
CROSOME, ETHANOL-OXIDATION, HUMAN, RAT (5590)•
CROSOME, GLUCOSE, ENZYME (3837)
MICROSOME; GLUCOSE, XYLOSE, DEHYDROGENASE (6465)
MICROSOME, GUANETHIDINE METABOLISM, DRUG INHIBITION (3056)
MICROSOME, HEME TURNOVER, CYTOCHROME B5 (8661)
MICROSOME, HYDROGEN ION, MIXED FUNCTION OXIDASES, N-OXYGENATION (7113)•
MICROSOME, LIPID, FATTY ACID, CCL4 TOXICITY (4471)
MICROSOME, LIVER CHROMATIN, RNA SYNTHESIS, ACTINOMYCIN, CORTISOL (4710)•
MICROSOME, MEMBRANES, PHOSPHOLIPID METABOLISM, ENDOPLASMIC RETICULUM, POLYSOMES (4841)•
MICROSOME, METABOLISM, BENZO(A)PYRENE, AGE, SEX, RAT (3971)
MICROSOME, METABOLISM, DIPHENYLHYDANTOIN, DRUG EFFECTS, INHIBITION, BIOTRANSFORMATION (5607)
MICROSOME, MITOCHONDRIA, DEVELOPMENT (2333)
MICROSOME, MONOOXYGENASE, ADRENAL, GUINEA PIG (4732)
MICROSOME, MONOOXYGENASE INDUCTION, ASCORBIC ACID, RAT (7933)
MICROSOME, NADPH2-DEPENDENT NITROREDUCTASE, CARCINOGEN (3058)
MICROSOME, NUCLEOPROTEIN FRACTION (7048)
MICROSOME, OXIDASE (4858)
MICROSOME, PARATHION, PESTICIDES, DRUGS (7124)•
MICROSOME, PH, SODIUM BINDING, MAGNESIUM BINDING, EDTA, ATP (5449)
MICROSOME, PHENOBARBITAL INDUCTION, CYTOCHROME P-450 (7151)•
MICROSOME, PHENYLALANINE, MICROSOMAL RNA (6446)•
MICROSOME, POLYPEPTIDE, PROTEOLYSIS (3063)
MICROSOME, PROTEIN, CYANIDE BINDING (8525)
MICROSOME, PROTEIN SYNTHESIS, RAT (8656)
MICROSOME, SEDIMENTATION SUCROSE, PROTEIN SYNTHESIS (5409)•
MICROSOME, SLEEP, TRANQUILIZER (1742)
MICROSOME, SMOOTH, MORPHOLOGY (7782)•
MICROSOME, STEROID, HYDROXYLATION (8613)•
MICROSOME, STEROID, HYDROXYLATION, MORPHINE (7128)•
MICROSOME, STEAROYL-COA DESATURASE (7040)
MICROSOME, 3-METHYLCHOLANTHRENE, 7,12-DIMETHYLBENZ(A)ANTHRACENE (7929)
MILK, KUPFFER CELLS, RADIOACTIVE GOLD, ABSORPTION (6371)
MITOCHONDRIA, AMIDINOALKYLUREAS, PHOSPHORYLATION (3851)
MITOCHONDRIA, AMINE-OXIDASE, BEEF (6485)
MITOCHONDRIA, AMINOTRANSFERASE, RAT (2289)•
MITOCHONDRIA, BILIRUBIN, METABOLISM (5241)

MITOCHONDRIA, BILIRUBIN, OXIDATIVE PHOSPHORYLATION (0841)•
MITOCHONDRIA, BINDING, TRIMETHYLTIN, TRIETHYLTIN (6444)•
MITOCHONDRIA, BIOGENESIS, REGENERATION CHLORAMPHENICOL (7795)•
MITOCHONDRIA, BIVALENT CATION TRANSLOCATION (2430)
MITOCHONDRIA, CALCIUM ABSORPTION, POTASSIUM PERMEABILITY (1620)
MITOCHONDRIA, CELL CULTURES, L-CYSTEINE, AMNIOTIC CELLS, ATPASE, CHICK EMBRYO (4741)•
MITOCHONDRIA, CHOLINE, BETAINE (7896)•
MITOCHONDRIA, CHLORAMPHENICOL INHIBITION, POTASSIUM (1745)
MITOCHONDRIA, CHLORPROMAZINE, CONTRACTION (3841)
MITOCHONDRIA, COLD EXPOSURE, UBIQUINONE (7185)
MITOCHONDRIA, CONFORMATION, RAT (8505)•
MITOCHONDRIA, CORTISONE (5431)•
MITOCHONDRIA, DEAMINATION (7169)
MITOCHONDRIA, DICARBOXYLATE ANION EXCHANGE, TRANSPORT INHIBITOR (7105)•
MITOCHONDRIA, DNA, X-RADIATION, REGENERATION (6443)•
MITOCHONDRIA, DNA SYNTHESIS, ENZYME (6474)
MITOCHONDRIA, ELECTRON MICROSCOPY, PREPARATION, FIXATION, RAT (1565)•
MITOCHONDRIA, ENDOTOXEMIA, LIPOPOLYSACCHARIDE, E. COLI (7683)•
MITOCHONDRIA, ENZYME, CHICKEN (4719)
MITOCHONDRIA, ENZYME, DEVELOPMENT (4727)
MITOCHONDRIA, ENZYME, KINETICS, RAT (4843)•
MITOCHONDRIA, ENZYME, ORNITHINE AMINOTRANSFERASE (1586)
MITOCHONDRIA, ENZYME, SEPARATION (1578)•
MITOCHONDRIA, FLAVONOID EFFECT, RAT (0897)
MITOCHONDRIA, FRAGILITY, PERMEABILITY, ETHANOL, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)•
MITOCHONDRIA, HERBICIDAL MONURON (3600)
MITOCHONDRIA, INNER MEMBRANE, PROTEINS (8524)
MITOCHONDRIA, ISOPYCNIC CENTRIFUGATION, SUCROSE GRADIENT (7810)
MITOCHONDRIA, K+-H+ EXCHANGE, MAO ACTIVITY, MITOCHONDRIAL MEMBRANE, RAT (5428)•
MITOCHONDRIA, LEVEL, INCREASED BY ETHYL-ALPHA-P-CHLOROPHENOXYISOBUTYRATE (3083)
MITOCHONDRIA, LIPID METABOLISM, RAT (8611)•
MITOCHONDRIA, MALATE DEHYDROGENASE, ISOZYMES, RAT (6336)
MITOCHONDRIA, MECHANISM, UNCOUPLERS, PHOSPHATE (1779)
MITOCHONDRIA, MEMBRANES, SURFACE CHARGE, FREE-FLOW ELECTROPHORESIS (5426)•
MITOCHONDRIA, METABOLISM, ENZYME (1713)•
MITOCHONDRIA, MICROSOMES, GLYCOPROTEIN, ASPARAGINASE (7136)•
MITOCHONDRIA, MONOAMINE OXIDASES, BENZYLAMINE, SEROTONIN, MICHAELIS CONSTANT (4691)•
MITOCHONDRIA, NEGATIVE STAINS, ELECTRON MICROSCOPY, BIOCHEMICAL PATTER
(6313)
MITOCHONDRIA, NUCLEI, RNA SYNTHESIS, RIFAMYCIN, RAT (0137)
MITOCHONDRIA, NUCLEIC ACIDS, ENDOPLASMIC RETICULUM, GUNIEA PIG (4739
MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, BIOTIN DEFICIENCY, RAT (8676)
MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, TIRANDAMYCIN, RAT (6469)
MITOCHONDRIA, PHOSPHATIDYLCHOLINE ORIGIN (2424)
MITOCHONDRIA, PHOSPHOENOLPYRUVATE, METABOLISM (5572)•
MITOCHONDRIA, PHOSPHORYLATION, BIOSYNTHESIS, THYROID (3849)
MITOCHONDRIA, PIGMENT, CYTOPLASM (9039)•
MITOCHONDRIA, PROTEIN SYNTHESIS, WARFARIN, VITAMIN K (8662)
MITOCHONDRIA, RADIOACTIVITY, PROTEIN
(6301)•
MITOCHONDRIA, REDOX PIGMENT, ACYLATE
PROTEIN (6325)
MITOCHONDRIA, RESPIRATION, HYPOKINESI
RAT (8674)
MITOCHONDRIA, RESPIRATION, INTEGRITY
STAINING AGENTS (1579)•
MITOCHONDRIA, RNA POLYMERASE, RIFAMPI
CIN, RAT (7939)
MITOCHONDRIA, SH- GROUP ALKYLATION, OLIGOMYCIN ADP (7129)•
MITOCHONDRIA, TRIIODOTHYRONINE, PROTEIN TURNOVER (6291)•
MITOCHONDRIA, TRNA SYNTHESIS (7147)•
MITOCHONDRIA, 2, 4-DINITROPHENOL (7186)
MITOCHONDRIA, 2, 4-DINITROPHENOL-ACTIVATED ADENOSINE TRIPHOSPHATASE, DEXTRAN SULFATE (5573)•
MITOCHONDRIA, ULTRASTRUCTURE CHANGE, TOCOPHEROL DEFICIENCY (5176)•
MITOCHONDRIA, ULTRASTRUCTURE, DENSITY
GRADIENT CENTRIFUGATION, EMBRYONIC,
STARVATION (5434)•
MITOCHONDRIA, VALINE, PROPIONYLCARNITINE (3982)
MITOCHONDRIAL, COENZYME Q, HYPERTHYROIDISM (7909)•
MITOCHONDRIAL FERROCHELATASE, INDUCTION (7161)•
MITOCHONDRIAL MEMBRANE, PHOSPHOLIPID
(2270)•
MITOCHONDRIAL PROTEIN, AMINO ACID INCORPORATION, CYCLOHEXIMIDE (7152
MITOCHONDRIAL RESPIRATION, KREBS CYC
INTERMEDIATES, VIBRIO, CHOLERAE,
ENDOTOXINS (7978)
MN, CU AND ZN, YOSHIDA ASCITES SARCO
(7544)
MOBILIZATION, IRON, ALLOPURINOL (713

MONOCROTALINE, ULTRASTRUCTURE, CHICKEN (6058)•
MONONUCLEOTIDE POOL, ENZYMATIC FLUX, RATES, MOUSE (0819)•
MONOOXYGENASE, STEROID HYDROXYLATION, PHENOBARBITAL (7953)
MORBILLI, GLYCOGEN, CHILDREN (4425)
MORPHINE, SERUM ENZYME CHANGES (4391)
MORPHOLOGY, AGE RAT (7052)
MORPHOLOGY, ANTITUBERCULAR, STREPTOMYCIN (8337)
MORPHOLOGY, BLOOD SERUM, JAUNDICE (3674)
MORPHOLOGY, CHOLECYSTIC PANCREATITIS, BILE DUCT ALTERATIONS, DOG (8407)
MORPHOLOGY, CIRRHOSIS, CHRONIC HEPATITIS (8391)
MORPHOLOGY, ENZYME INDUCTION, PHENYLBUTAZONE, RAT (7790)•
MORPHOLOGY, GALACTOSAMINE, GIGANTOBLASTIC HEPATITIS, PREGNANT RAT, BABY RAT (9104)
MORPHOLOGY, GASTRIC CANCER (7340)
MORPHOLOGY, GASTRIC CARCINOMA, GASTROINTESTINAL TRACT DISEASES (8538)
MORPHOLOGY, HISTOCHEMISTRY, MITOCHONDRIAL ENZYMES, MALATE DEHYDROGENASE, GLUTAMATE OXALOACETATE TRANSAMINASE, NADH (1767)
MORPHOLOGY, MICROSCOPY, BUTAZOLIDIN, JAUNDICE (4456)
MORPHOLOGY, RADIOGRAPHY, SPLENIC MORPHOLOGY (0973)
ORPHOLOGY, 3'-PHOSPHOADENYLYLSULFATE STEROID SULFOTRANSFERASE, MAN (8532)
ORRIS HEPATOMA, TRANSPLANTABLE, CELL CYCLES (6816)
UCOPOLYSACCHARIDOSES I AND III, ACID HYDROLASES, SERUM (9078)
ULTIFOCAL FIBROMATOSIS, CHOLANGITIS, XANTHOFIBROGRANULOMA, BILE DUCT (5326)
ULTIPLE MYELOMA, KAHLER'S DISEASE, HYPERLEUCOCYTOSIS, PROTEINURIA, NORMOCHROMIC ANEMIA (5275)
AD SYNTHETASE, SPECIFICITY, RAT (7028)•
-DEALKYLASE, N-OXIDASE, AGE (7891)•
-DEMETHYLASE ACTIVITY, O-DEMETHYLASE ACTIVITY (3050)
ECROSIS, ACUTE, INTRAVASCULAR COAGULATION DISORDERS, RED BLOOD CELL MALFORMATIONS FIBROGEN TESTS, HEPARIN THERAPY (3594)•
ECROSIS, ANESTHESIA, TOXICITY (5244)
ECROSIS, CARBON TETRACHLORIDE POISONING, ENDOXANE (9096)
CROSIS, CHRONIC HEPATITIS, DYSPROTEINEMIA (8367)
CROSIS, FATAL, SENSITIVITY, METHOXYFLURANE (3591)•
CROSIS, GRANULOCYTE, SURGERY, CHOLECYSTOLITHIASIS (8298)
CROSIS, HALOTHANE ANESTHESIA (6074)
CROSIS, HEPATIC ARTERY LIGATION, STOMACH (3569)
CROSIS, HEPATOSCINTIGRAPHY, FATTY DEGENERATION (0978)
CROSIS, INJURY, ANESTHESIA (1399)
NECROSIS, REGENERATION, MITOSIS, VITAMIN, NICOTINIC ACID, ALKALOID (2419)•
NECROSIS, SEVERE ICTERUS (3141)
NEEDLE BIOPSY, METASTASES, STOMACH, SCANOGRAPHY (2524)
NEEDLE BIOPSY, QUANTITIVE LIPID ANALYSIS, CHOLESTEROL, TRIGLYCERIDES (0105)
NEEDLE BIOPSY, TECHNICAL IMPROVEMENTS, CHILDREN, INFANTS (8778)
NEONATAL, NOVIKOFF HEPATOMA, DEOXYTHYMIDINE KINASE (7117)•
NEONATAL, PHOSPHORYLASE (0731)•
NEONATAL HEPATITIS, CLASSIFICATION (2866)
NEONATAL JAUNDICE, PHENOBARBITAL, PRE-ECLAMPTIC TOXEMIA, SYNERGISM (0540)
NEOPLASM, HYDATID CYST, RADIOISOTOPIC TECHNIQUE, CLEARANCE TESTS (8758)
NEOPLASM, RNA, PARENCHYMA (6303)•
NEUROBLASTOMA, NEWBORN (4392)
NEWBORN, CALCIFICATION, INTRAHEPATIC (1365)
N-HYDROXY-2-FLUORENYLACETAMIDE, ADDUCT, PROTEIN (8671)
NICOTINE, METABOLISM, MOUSE (4828)•
NIEMANN-PICKS DISEASE, HISTOLOGY, ULTRASTRUCTURE, SPHINGOMYELIN (0016)
NITROFURANTOIN, TOXICITY (1405)
NITROSTIGMINE, OBIDOXIME, TOXICITY (4451)
NODULAR TRANSFORMATION, PORTAL HYPERTENSION (5998)
NODULE, N-2-FLUORENYLACETAMIDE, METABOLISM (7536)•
NONALCOHOLIC, STEATORRHEA, MICELLAR PHASE (6764)•
NON-PARASITIC CYSTS, TRANSTHORACIC HEPATOTOMY (6807)
NON-VIRAL HEPATITIS, HEPATIC INJURY, D-GALACTOSAMINE, LIVER ENZYME, AUTORADIOGRAPHY (2859)•
NORMAL, TECHNETIUM 99M SULFIDE, SCINTILLATION CAMERA (6321)
NORTRIPTYLINE, PLASMA DISAPPEARANCE, STEROIDS, RAT (2457)
NOVIKOFF HEPATOMA, HISTONE DEACETYLASE (6459)
NUCLEAR MEMBRANE, LIPID COMPOSITION (7778)•
NUCLEAR MEMBRANE, PERMEABILITY, DIETHYLNITROSAMINE (7976)
NUCLEAR MEMBRANE, PHOSPHOLIPID, NEUTRAL LIPID, FATTY ACID (4695)•
NUCLEAR RNA, STERIGMATOCYSTIN, MITOSIS, CELL DAMAGE, OROTIC ACID INCORPORATION, SCINTILLATION COUNTS (5457)
NUCLEI, DNA DEGRADATION (6343)
NUCLEI, ENZYME INHIBITION, CHEMICAL TOXIN, RAT (2305)
NUCLEI, HISTONE-SPECIFIC TRANSACETYLASES (7051)
NUCLEI, ISOLATION, LOW HEAVY METAL LEVEL (3065)
NUCLEI, MESSENGER RNA, PROTEIN MOIETY (7911)•

NUCLEI, MITOCHONDRIA, RNA, CORTISONE (6424)*
NUCLEI, NUCLEAR MEMBRANES, PHOSPHOLIPIDS, METABOLISM (0011)*
NUCLEI, RNA POLYMERASE, ADRENALECTOMY, ALPHA-IRRADIATION (6458)
NUCLEI, RNA POLYMERASE, ANTHRALINE, RAT (0142)
NUCLEI, RNA POLYMERASE ASSAY, ALPHA-AMANITIN (6317)
NUCLEIC, RNA, MESSENGER (7910)*
NUCLEIC ACID, CALORIC DEFICIENCY, ZINC, MANGANESE, HYPOPHYSECTOMY, RAT (4829)*
NUCLEIC ACID SYNTHESIS, CORTISONE (3051)
NUCLEIC ACID SYNTHESIS, DNA, HEPATOMA, TRACER STUDIES, ISOPROTERENOL (2322)
NUCLEOHISTONE, CIRCULAR DICHROISM (6329)
NUCLEOLI, ACTINOMYCIN D, MORPHOLOGY (7799)
NUCLEOLI, DENSE PARTICLES (7787)*
NUCLEOTIDE, TRNA METHYLASES, RAT (6341)
NUCLEUS, FATTY ACID, RAT (3826)
NUCLEUS, 54ZN2+ UPTAKE, CHELATING AGENTS (3959)
NUCLEUS, PROTEIN, BIOSYNTHESIS, METALS, RAT (4830)*
OBIDOXIN, TOXICITY, PARENCHYMAL DAMAGE, FATTY LIVER (6467)
OBSTRUCTIVE JAUNDICE, LECITHIN-CHOLESTEROL ACYLTRANSFERASE (5301)*
OBSTRUCTIVE JAUNDICE, SURGERY, MORTALITY (6145)
ORNITHINE AMINOTRANSFERASE, MITOCHONDRIA, RAT (3807)*
ORNITHINE DECARBOXYLASE, GROWTH HORMONE (7108)*
ORTHOPHOSPHATE TURNOVER, EXTRACELLULAR AND INTRACELLULAR SPACE, MOUSE (0818)*
ORTHOTOPIC AND HETEROTOPIC HOMOGRAFT, PRIMARY CANCER, MAN (8302)
ORTHOTOPIC HOMOTRANSPLANT, REJECTION, PIGLET (9092)
ORTHOTOPIC TRANSPLANT, DOG (6742)
ORTHOTOPIC TRANSPLANT, IMMUNOLOGY, ANATOMOPATHOLOGY, DOG (9086)
OSMORECEPTORS, AFFERENT DISCHARGES, VAGAL NERVE, GUINEA-PIG (0923)*
OSMORECEPTORS, SALINE INFUSION, PORTAL BLOOD (1723)*
OSMOREGULATION, OSMORECEPTORS, OSMOLAR CLEARANCE (1701)*
OXIDATION, ETHANOL EFFECT, SORBITOL (3120)
OXIDATIVE PHOSPHORYLATION, ATP-ASE, MG+ (7968)
OXYGEN UTILIZATION, BLOOD FLOW, EXTERNAL PRESSURE (2806)*
PALPABILITY, INFANTS, CHILDREN (0713)
PANCREAS, DUODENUM, BILE DUCT, CHOLECYSTODUODENOSTOMY (7676)
PANCREAS, RADIOISOTOPES (0935)*
PANCREAS, TRYPSIN INHIBITOR (7814)
PARASITE, HYDATID (3010)
PARASITIC DISEASE, FIBROSIS, ASCITES, LYMPH (3767)*
PARENCHYMA, ANTIBIOTIC, OVARIECTOMY, ORCHIECTOMY, RAT (0150)
PARENCHYMA, CHOLELITHIASIS, METABOLISM DISORDERS (4531)
PARENCHYMA, COMPRESSION, HEMORRHAGE (3585)
PARENCHYMA, ELECTRON MICROSCOPY, SPLENOMEGALY, MITOCHONDRIA, CELL COMPONENTS (6054)*
PARENCHYMA, GALLBLADDER CHANGES, CHOLECYSTOGRAPHY, HYPOKINESIA, LITHIASIS (5302)
PARENCHYMA, GILBERT'S SYNDROME, ULTRASTRUCTURE (2801)*
PARENCHYMA, NEPHROTOXIC SERUM, HEPATIC VEIN, OCCLUSION, GRANULOMA (6853)
PARENCHYMAL CELL, CELL DIVISION, REGENERATION, MOUSE (0149)
PARENCHYMA CELL, FIXATION BUFFERS, MORPHOMETRY (3859)
PARENCHYMAL CELL, FREE INORGANIC PHOSPHATE, HISTOCHEMISTRY, AUTORADIOGRAPHY, RAT (8521)
PARENCHYMAL CELL, RIBONUCLEASE, RIBOSOME, RNA, RAT (0117)
PARTIAL HEPATECTOMY, BLOOD FLOW, COLLOID CLEARANCE (2486)*
PARTIAL HEPATECTOMY, CIRCULATION (8696)*
PARTIAL HEPATECTOMY, DIGESTIVE CARCINOMA METASTASES (2076)
PARTIAL HEPATECTOMY, EXCHANGE TRANSFUSIONS, HEPATOCYTIC PROLIFERATION, RAT (0830)*
PARTIAL HEPATECTOMY, HEPATOBILIARY SURGERY, SURGICAL HEPATITIS (1377)
PARTIAL HEPATECTOMY, HYPOGLYCEMIA, HORMONE REPLACEMENT (1692)
PARTIAL HEPATECTOMY, METABOLISM, PLASMA LIPID, RAT (3550)*
PARTIAL RESECTION, SERUM, CHOLESTEROL METABOLISM (6502)*
PARTIALLY RESECTED, PROLIFERATIVE ACTIVITY, DIETHYLNITROSAMINE (3573)
PARTICULATE FRACTION, MONOGLYCEROPHOSPHATE, RAT (5588)*
PATHOLOGY, ACID-BASE EQUILIBRIUM ALTERATIONS (1382)
PATHOLOGY, ALCOHOLIC, CIRRHOSIS (6884
PATHOLOGY, ANTIGLOBULIN CONSUMPTION TEST, VIRAL HEPATITIS (9050)
PATHOLOGY, BIOPSY, CHOLANGITIS, CHOLEDOCHODUODENOSTOMY (1461)
PATHOLOGY, CARBOHYDRATE, METABOLISM (5180)
PATHOLOGY, COENZYME PREPARATION, CLINICAL TRIAL (9054)
PATHOLOGY, GAMMA CAMERA, INSPIRATION AND EXPIRATION VIEWS, HEPATIC PLIABILITY (8747)
PATHOLOGY, INFUSION CHOLECYSTOCHOLANGIOGRAPHY, SERUM ENZYMES (8725)
PATHOLOGY, INTRAVENOUS GALACTOSE TOLERANCE TEST, LIVER FUNCTION TESTS (8777)
PATHOLOGY, ISOTOPE SCANNING, ULTRASONIC SCANNING (2512)*

PATHOLOGY, MITOCHONDRIA, ANTIBODY, IMMUNOLOGY (2817)•
PATHOLOGY, NON-VIRAL ACUTE HEPATITIS, ACTIVE CHRONIC HEPATITIS (4502)
PATHOLOGY, PIPE STEM FIBROSIS, PORTAL HYPERTENSION, SCHISTOSOMIASIS (7004)•
PATHOLOGY, SJOGREN'S SYNDROME, RHEUMATOID ARTHRITIS (5206)
PATHOLOGY, THOROTRAST, CHRONIC HEPATITIS (9052)
PATHOLOGY, UNDERWATER, ENVIRONMENT (4395)
PEDICLE, COMPRESSION, ICTERUS, TUBERCULOSIS (4410)
PEDICLE, COMPRESSION, TUBERCULAR GANGLION (4407)
PELIOSIS, ALLYL ALCOHOL, ENZYMES, RATS (5174)•
PERCUTANEOUS PUNCTURE, GALLBLADDER (4533)
PERCUTANEOUS PUNCTURE, HEART, VASCULATORY DISEASES (4512)
PERFUSED, AMPHETAMINE REMOVAL, MONOAMINE OXIDASE INHIBITORS, CAT (7940)
PERFUSED, BILE ACID SYNTHESIS, CHRONIC BILIARY DAMAGE (7153)•
PERFUSED, MEMBRANE POTENTIAL, ION CONCENTRATIONS (7838)
PERFUSED, PROSTAGLANDIN (7913)•
PERFUSED, RAT, GLUCONEOGENESIS, INHIBITION, PENT-4-ENOIC ACID (2446)
PERFUSED, TYROSINE AMINOTRANSFERASE, HYDROCORTISONE INDUCTION, HISTONES (7936)
PERFUSION, BILIARY EXCRETION, CURARE COMPOUNDS, LIPID SOLUBILITY, RAT (5485)•
PERFUSION, CIRCUIT CHARACTERISTICS, PIG (8001)
PERFUSION, FUNCTION, SECRETION (0868)
PERFUSION, GLUCONEONGENESIS, VITAMIN B12 DEFICIENCY (3931)•
PERFUSION, GLUCOSE, ENZYME, SUPPRESSION, RAT (4745)
PERFUSION, HEPATIC COMA, ULCERATIVE COLITIS, HEMOSTASIS (5283)•
PERFUSION, ISOLATED, THERAPEUTIC USE (3179)
PERFUSION, LACTIC-DEHYDROGENASE ACTIVITY, ISOENZYME ACTIVITY (3082)
PERFUSION, METABOLISM, ALCOHOL (3211)
PERFUSION, METABOLISM, ENZYME ACTIVITY (6491)
PERFUSION, NORADRENALIN, GLUCONEOGENESIS (3932)•
PERFUSION, PATHOLOGY, INTOXICATION, COMA (1396)
PERFUSION, PHARMACOLOGY (4012)
PERFUSION, SULFOBROMOPHTHALEIN, EXCRETION, STEROID, RAT (4833)•
PERFUSION, TESTOSTERONE METABOLISM (3977)
PERFUSION, UREA, URIC ACID, SYNTHESIS (3970)
PERFUSION, VASCULAR RESISTANCE (3259)
PERIARTERIAL, NEURECTOMY, DNA, NUCLEIC ACID, HEPATOCYTE, NUCLEAR MEMBRANES (5203)
PERIBILIARY DENSE BODIES, DEVELOPMENT, EMBROYONIC RAT (3074)
PERIHEPATITIS, PORTAL HYPERTENSION, SPLENECTOMY, ANASTOMOSIS (5289)
PEROXIDASE, KUPFFER CELLS (7792)•
PEROXISOME, CATALASE (5610)
PEROXISOME, CYTOLOGY, FUNCTION ENZYMES (5446)
PEROXISOME, GLYOXALATE METABOLISM (8617)•
PEROXISOME, METABOLISM (3044)
PHALLOIDIEN HEPATITIS, MUSHROOM POISONING, DIARRHEA (5332)
PHENOBARBITAL, PHOSPHOHYDROLASES, MICROSOMAL LECITHIN, PHOSPHATIDYL ETHANOLAMINE, RAT (0122)
PHENOBARBITAL DEMETHYLATION, AROMATIC AMINES, PREGNANT RAT, FETUS (7947)
PHOSPHATASE, MITOCHONDIAL ATPASE, RAT (0129)
PHOSPHATIDYLETHANOLAMINE, ETHANOLAMINE, CHOLINE DEFICIENCY (7887)•
PHOSPHATIDYLINOSITOL, METABOLIC REACTIVITY (7781)•
PHOSPHODIESTERASES, INTRACELLULAR LOCALIZATION (0730)•
PHOSPHOFRUCTOKINASE, RABBIT (5438)•
PHOSPHOLIPID, AMINO ACID METABOLISM, PREGNANT RATS (1752)
PHOSPHOLIPID, CHOLINE DEFICIENCY, LECITHIN SYNTHESIS (7107)•
PHOSPHOLIPID, METABOLISM, PROTEIN (3934)•
PHOSPHILIPID, SYNTHESIS, CHOLINE METHIONINE (7138)•
PHOSPHOLIPID, TRIGLYCERIDE, SYNTHESIS, MAN (0847)•
PHOSPHOLIPID, VITAMIN B6 (7176)
PHOSPHOLIPID EXCHANGE, CARBON TETRACHLORIDE (0826)•
PHOSPHORYLASE PHOSPHATASE, IN VITRO, ATP (0732)•
PHOSVITIN, ESTROGEN, SERINE TRANSFER RNA (0879)
PHYSIOLOGY, TRANSPLANTS, DISEASE, RECENT ADVANCES (2245)
PHYTOHEMAGGLUTIN-INDUCED CHANGES, KUPFFER CELL, HEPATOSLENOMEGALY, MICE (0106)
PITUITARY, HORMONES, TRNA, AMINO-ACIDS (6482)
PLASMA MEMBRANE, CELLS, ELECTRON MICROSCOPY (1619)
PLASMA MEMBRANE, ENZYME ACTIVITY, 5 PRIME-NUCLEOTIDASE, HISTOCHEMISTRY (2274)•
PLASMA MEMBRANE, ESSENTIAL FATTY ACID DEFICIENCY, ENZYME ACTIVITY, NUCLEOTIDE (6295)•
PLASMA MEMBRANE, HEPATOMA, ATPASE (6292)•
PLASMA MEMBRANE, HORMONE BINDING, ADENYL CYCLASE (6447)•
PLASMA MEMBRANE, PHALLOIDIN, MG+2-ATPASE, (K+-NA+)-ATPASE, K+-DEPENDENT P-NITROPHENYL PHOSPHATASE, RAT (3203)
PLASMA MEMBRANE FRACTION, ENZYME (2283)•

PLASMA PROTEIN, ALBUMIN ALTERATION (7122)•
POISON, ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITAL, GASTROINTESTINAL TRACT (5639)
POLYGLOBULISM, CANCER, ERYTHROCYTOSIS, ELECTROPHORESIS, BIOPSY (5189)
POLYRIBOSOME, ADRENALECTOMY, RADIATION TOXICITY, REGENERATION (4823)•
POLYRIBOSOME, DEGRADATION, BENZENE (7927)
POLYRIBOSOME, RNA, HOMOPOLYMERS, ADENINE, POLYNUCLEOTIDES, ACTINOMYCIN D (4699)•
POLYRIBOSOME, STABILITY, GEL FILTRATION, RAT (6340)
POLYRIBOSOME DISAGGREGATION, TANNIC ACID, RAT (3620)
POLYSOMES, GLYCOPROTEIN, RAT (1592)
POLYSOMES, P-CHLOROMERCURIBENZOATE, RAT (1756)
POLYSOMES, PROTEIN STARVATION, RAT (0127)
POLYSOMES, RIBONUCLEOPROTEIN, NUCLEI (6311)
PORPHYRIA, ACUTE, DELTA-AMINOLEVULINIC ACID (8269)•
PORPHYRIA, CHRONIC (0556)
PORPHYRIA, FECES, URINE, PORPHYRIN (6025)
PORPHYRIA, PIG (1758)
PORPHYRIA CUTANEA TARDA, IRON METABOLISM (2071)
PORPHYRIN METABOLISM, BARBITURATES, PORPHYRIA, HEPATIC ENZYMES (5563)•
PORPHYRIN METABOLISM, DISTURBANCE, DIAGNOSIS (0565)
PORPHYRIN METABOLISM, EXPERIMENTAL POISONING (6839)
PORPHYRIN SYNTHESIS, DELTA-AMINOLEVULINATE (0839)•
PORTACAVAL ANASTOMOSIS, EMERGENCY, CIRRHOSIS (3657)
PORTACAVAL ANASTOMOSIS, INFECTION (8430)
PORTACAVAL ANASTOMOSIS, ORGAN CHANGES (6933)•
PORTAL CIRCULATION, CAT, RABBIT (1793)
PORTAL CIRCULATION, HEMODYNAMICS, LIVER DISEASE (0680)
PORTAL CIRRHOSIS, KININ, KININOGEN, ASCITES (4504)•
PORTAL CIRRHOSIS, NITROGEN METABOLISM (8375)•
PORTAL DECOMPRESSION, LIVER-KIDNEY CONNECTION, IVALON (7742)
PORTAL FISSURE, BILE DUCT, SURGERY (4532)
PORTAL HYPERTENSION, ANEURYSM, SPLENIC ARTERY (2979)
PORTAL HYPERTENSION, BILE, CCL4, DOG (7557)
PORTAL HYPERTENSION, CIRRHOSIS PROGNOSIS (4510)
PORTAL HYPERTENSION, COLONIC VARICES, HEMORRHAGE (8299)
PORTAL HYPERTENSION, NORMAL MORPHOLOGY (6779)•
PORTAL HYPERTENSION, PORTAL VEIN OBSTRUCTION, INTRASPLENIC PRESSURE, PLASMA VOLUME CHANGES, RED BLOOD CELL MASS CHANGES, CIRRHOSIS (2188)•
PORTAL HYPERTENSION, RADIOLOGY, SURGERY (5298)
PORTAL HYPERTENSION, SURGERY, CHILDRE
(4397)
PORTAL HYPERTENSION, SURGICAL TREATMENT, CRITICAL STUDY (2056)
PORTAL SYSTEM, DIAGNOSTIC PROCEDURES, SPLENECTOMIZED PATIENTS (0955)
PORTAL VEIN, HEPATIC ARTERY, MESENTERIC BLOOD FLOW (7995)•
POST-HEPATITIS CIRRHOSIS, TRANSAMINASES, PERILOBULAR FIBROSIS, MACRONODULAR LIVER (6119)
POSTMORTEM CHANGE, ENZYME, RAT (2830)
POSTNECROTIC CIRRHOSIS, VIRAL HEPATITIS, HEPATOCELLULAR CARCINOMA (1429
PRESERVED TRANSPLANT, CLOTTING ABNORMALITIES, PIG (0532)•
PRIMARY BILIARY CIRRHOSIS, SARCOIDOSIS, KVEIM TEST (0651)
PRIMARY CANCER, AGE, SEX (6048)
PRIMARY CANCER, ANATOMOPATHOLOGY, DIAGNOSIS (9061)
PRIMARY CANCER, CIRRHOSIS, ALCOHOLISM, ETIOLOGY, EPIDEMIOLOGY (4374)
PRIMARY CANCER, HEXAMETHYLMELANINE (6796)
PRIMARY CANCER, PATHOLOGY, SYMPTOMATOLOGY (2851)
PRIMARY CARCINOMA, ASCITES, JAUNDICE
(6828)
PRIMARY CARCINOMA, CHILDREN (3570)
PRIMARY CARCINOMA, CIRRHOSIS (6806)
PRIMARY CARCINOMA, HYPERLIPEMIA, ERYTHROCYTOSIS (9051)
PRIMARY CARCINOMA, RESECTION (6031)
PRIMARY CARCINOMA, SERUM, ALPHA-FETO
PROTEIN (7530)•
PRIMARY CARCINOMA, SPONTANEOUS RUPTU
HEMATOPERITONEUM (9056)
PROCESSES, NEUROLOGIC MANIFESTATIONS
(0572)
PROGESTOGEN METABOLISM, RABBIT (6488)
PROTEASE, HISTAMINE, PHENIRAMINE MALEATE (8659)
PROTEASE, PAPAIN, PARTIAL HEPATECTOM
KAMBARA, MITOTIC INDEX (4851)
PROTECTION, ALPHA-ALPHA-DITHIOCAPRON
ACID CALCIUM SALT, LIPEMIA (9083)
PROTECTION, CIRRHOSIS (3564)
PROTECTION, ORNITHINE-ASPARATATE MIXTURE, LUNG TUBERCULOSIS TREATME
(8366)
PROTEIN, BINDING, CARCINOGENIC AMINOAZO DYES, TYROSINE, RATS (0108)
PROTEIN, CHOLECYSTITIS, ELECTROPHORESIS (6154)
PROTEIN, CYTOCHROME P-450, HEMOPROTEINS, OXYGEN ACTIVATION, ABSOR
TION, SPECTRUM (4822)•
PROTEIN, DNA, RAT (4718)

ROTEIN, 4-DIMETHYLAMINOAZOBENZENE, CARCINOGENESIS (8282)
ROTEIN, LIPID, BIOSYNTHESIS, RESECTION (3177)
ROTEIN, METABOLISM (1738)
ROTEIN, METABOLISM, HYDRAZINE (3586)
ROTEIN, METABOLISM, VALINE, INSULIN INHIBITION, PROTEOLYSIS, RAT (4837)•
ROTEIN, RNA, CORTISONE, RAT (4842)•
ROTEIN, RNA, DNA (6440)•
ROTEIN, TRACER STUDIES, AZODYE CARCINOGEN (2406)•
ROTEIN BINDING, CARRIER SYSTEMS, BILIRUBIN, BSP, PHYSIOLOGIC JAUNDICE, HYPERBILIRUBINEMIA, TRANSPORT MECHANISMS (3095)•
ROTEIN-BOUND IODINE, THYROXINE METABOLISM, DISEASE (0560)
ROTEIN DEFICIENCY, HYPERBILIRUBINEMIA, NEONATE (0098)•
ROTEIN DYNAMICS, BILE SECRETION, RABBIT (7168)
ROTEIN FACTOR, LIPASE, PANCREAS (6303)•
ROTEIN METABOLISM, RADIOISOTOPE INJECTION, RAT (0111)
ROTEIN SYNTHESIS, AMINO ACID INCORPORATION (7149)•
ROTEIN SYNTHESIS, AMINO ACID INCORPORATION, CORTIDOL TREATMENT, IN VIVO, IN VITRO, RAT (4834)•
ROTEIN SYNTHESIS, ANTIBIOTIC INHIBITION, DNA REPLICATION, THYMIDINE, CYTIDINE, PARTIAL HEPATECTOMY (4831)•
ROTEIN SYNTHESIS, CELL NUCLEUS, RAT (0155)
ROTEIN SYNTHESIS, ENHANCEMENT, METHYLCOBALAMIN, DAMAGE, RAT (4819)•
ROTEIN SYNTHESIS, MAGNESIUM DEFICIENCY, ALBUMIN SYNTHESIS (6438)•
ROTEIN SYNTHESIS, NUCLEIC ACID (0726)•
ROTEIN SYNTHESIS, PHENOBARBITAL (7156)•
ROTEIN SYNTHESIS, POLYSOME, FREE AND BOUND (8642)
ROTEIN SYNTHESIS, SERUM ALBUMIN, SULFATE TRACER STUDIES (2408)•
ROTEIN TURNOVER, OROTIC ACID, RAT (7937)
ROTHROMBIN, FIBRINOLYSIS, CANCER, CIRRHOSIS (5646)•
ROTHROMBIN BIOSYNTHESIS, VITAMIN K (3963)
ROTRACTED ICTERUS, RELAPSE (4414)
LMONARY TUBERCULOSIS, SURGERY (1372)
NCTURE BIOPSY, LAPAROSCOPY, PROPHYLAXIS (8782)
NCTURE BIOPSY, PORTAL FISTULA, ANGIOGRAPHY (4413)
RIFICATION, HEPATECTOMY, ANESTHESIA REANIMATION, PIG (1395)
NO, BLOCKING EFFECT, PHAGOCYTE ACTIVITY, RABBITS (4872)•
RAMIDONE METABOLISM, PORTAL CIRRHOSIS, MICROSOMAL OXIDASE (6814)
RIDINE COENZYMES, HIGH O2 PRESSURE (3831)
PYRIDINENUCLEOTIDE METABOLISM, MITOCHONDRIA, IRRADIATION, RAT (1368)
PYRROLIDONYL PEPTIDASE, ANIMAL, HUMAN (7039)
PYRUVATE CARBOXYLASE DEFICIENCY, HYPERALANINEMIA, PYRUVICEMIA (2063)
PYRUVATE CARBOXYLASE PROTECTION, AVIDIN INHIBITION, CHICKEN (7949)
PYRUVATE HOLOCARBOXYLASE, SYNTHESIS, CHICKEN (7935)
PYRUVATE KINASE AND PHOSPHOENOLPYRUVATE CROSSROADS, REGULATION (3191)
RADIATION INJURY, ULTRASTRUCTURE, HEXOSES (9093)•
RADIO-IODIDE TEST, LIVER METASTASES, RECTAL TUMOR (0949)•
RADIOLOGY, ANGIOGRAPHY, SCANNING, CIRRHOSIS, TUMORS (7219)•
RADIOLOGY, CLINICAL EXAMINATION, DIAGNOSIS (4018)•
RADIOLOGY, SCANNING, COMBINED TECHNIQUE, HEMANGIOMA (3263)•
RAT, CANCEROGENESIS, ENZYMES, PHOSPHARYLATING (0851)•
RAT, CELL CULTURE, PROTEIN, TRACER TECHNIQUE (2463)
RAT, ETHANOL, PORPHYRIN, NADH (8628)•
RAT, GLYCOGEN SYNTHETASE (2810)
RAT, LYSOSOME, PHOSPHATASE (2413)•
RAT, NECROSIS, REGENERATING, N-ACETYL-B-GLUCOSAMINIDASE (2304)•
RAT, NUCLEUS, SODIUM, POTASSIUM, TRANSPORT, DISTRIBUTION (2351)
RAT, PERFUSED, IRRADIATION, GLUCOSE, METABOLISM (6480)
RAT, PEROXIDATION, ALDEHYDE (6437)•
RAT, PREGNANCY, NUCLEOTIDE, ENZYME (2469)
RAT, SLICE, GLUCURONIDE (2436)
RAT, SUBCELLULAR CONSTITUENT, GOLGI COMPLEX UBIQUINONE, QUANTITATION (5432)•
RED CELL STASIS, SHOCK (8283)
REDOX POTENTIAL, NADPH SYSTEM (7131)•
REDOX STATE, MITOCHONDRIA, CIRRHOSIS, MALNUTRITION, RAT (2141)
REGENERATING, ALKALINE DEOXYRIBONUCLEASE (8643)
REGENERATING, INHIBITION (2435)
REGENERATING, PROGESTERONE, METABOLISM (6453)•
REGENERATION, BIOTIN DEFICIENCY, BLOOD CA LEVEL, BLOOD MG LEVEL, HEPACTECTOMY (3186)
REGENERATION, CARCINOMA, MITOSIS, MICE (1354)•
REGENERATION, CARCINOGENESIS, NUCLEAR DNA TRANSFER (7974)
REGENERATION, CO2 FIXATION, RABBIT (7981)
REGENERATION, DEOXYRIBONUCLEOPROTEIN, RNA SYNTHESIS (5592)
REGENERATION, DNA-BINDING, AZOBENZENE DERIVATIVE (3981)
REGENERATION, DNA FORMATION, ETHER ANESTHESIA (3159)•
REGENERATION, DNA SYNTHESIS, DISCONTINUATION, RAT (2299)

REGENERATION, DNA SYNTHESIS, L-ASPARAGINASE (3162)*
REGENERATION, FOLIC ACID, PARTIAL HEPATECTOMY, RAT (4835)*
REGENERATION, HEMIHEPATECTOMY, CHILDREN (8280)
REGENERATION, HISTONE SYNTHESIS, RAT (7954)
REGENERATION, LIVER EXTRACT (3972)
REGENERATION, MITOSIS (3985), (4855)
REGENERATION, MITOSIS, METABOLISM (2440)
REGENERATION, MITOTIC INDEX, CIRCADIAN RHYTHM, PARTIAL HEPATECTOMY, RAT (8652)
REGENERATION, PARTIAL HEPATECTOMY, EHRLICH'S CARCINOMA ASCITES (0147)
REGENERATION, PARTIAL HEPATECTOMY, ELECTROPHORETIC PROTEIN PATTERNS, DOG (8680)
REGENERATION, POLYAMINE SYNTHESIS (8655)
REGENERATION, RADIATION, AMINO ACID, INCORPORATION, PROTEIN (4826)*
REGENERATION, RESECTION, HEPATIC ARTERY LIGATION, RAT (1746)
REGENERATION, RESECTION, METABOLISM (5594)
REGENERATION, RESECTION SIZE (3965)
REGENERATION, RNA SYNTHESIS, CYCLOHEXIMIDE, RAT (4821)*
REGENERATION, SCINTILLATION SCANNING, CHOLANGIOGRAPHY, ANGIOGRAPHY (3301)
REGENERATION, SELENIUM THERAPY, VIRAL HEPATITIS, HAMSTER (8354)
REGENERATION, SERUM GROWTH FACTOR, MITOSIS, DNASE, RNASE (7116)*
REGENERATION, SPLENECTOMY, DOG (7977)
REGENERATION, STIMULATION, L929 CELLS, RNA (0119)
REGENERATION, THYMECTOMY (3987)
REGENERATION, THYMECTOMY, DNA (3986)
REGENERATION, THYMECTOMY, ENZYME (3988)
REGENERATION, TRANSFER RNA, METHYLATION (7884)*
REGENERATION, VITAMINS, AMINO ACID, CELL KINETICS (3983)
RENAL INSUFFICIENCY, CHOLANGITIS (6042)
RESECTION, CIRCULATORY CHANGE (6791)
RESECTION, ECHINOCOCCUS (1539)
RESECTION, FIBROUS CAPSULE, OCTO-N-FORM SUTURE (6038)
RESECTION, GLUCOSE, METABOLISM, FATTY ACID (7148)*
RESECTION, HEMOBILIA, HEMORRHAGE (1492)
RESECTION, HEMOSTASIS (3584)
RESECTION, PORTAL BLOOD FLOW, DOG (0925)*
RESECTION, PRIMARY CANCER, METASTATIC, CHILDREN (8300)
RESECTION, SGOT, SGPT (7180)
RESECTION, TECHNIQUE (6036)
RESECTION, THROMBOELASTOGRAM, COAGULOGRAM (7541)
RESECTION, TRAUMA (1367), (1393)
RESECTION, ULTRASTRUCTURE, HEPATOCYTE (6477)
RESERPINE, TOXICITY, ULTRASTRUCTURE (8328)*
RESPIRATION, PORTAL LIGATION, MANOMETRY (1721)*
RHEOGRAPHY, SPLEEN (4025)
RHODANESE (3079)
RIBONUCLEASE, INHIBITOR, AGE (6468)
RIBONUCLEASE, INHIBITOR, STABILITY, PIT (0886)
RIBONUCLEIC ACID, CARCINOGENS, RADIOACTIVE COMPOUNDS (1776)
RIBONUCLEOSIDE TRIPHOSPHATES LEVEL, ALPHA-AMANITIN INJECTION EFFECTS (3180)
RIBOSOME, ACTIVE SUBUNITS, RAT (1667)
RIBOSOME, ANTIGENIC SPECIFICITY, OX (7045)
RIBOSOME, BLOOD GROUP ANTIGENS (7046)
RIBOSOME, PEPTIDE BOND FORMATION, RAT (8512)*
RIBOSOME, POLYURIDYLIC ACID, T-RNA (0880)
RIBOSOME, PROTEIN SYNTHESIS, BINDING SITES (1618)
RIBOSOME, PROTEIN SYNTHESIS, RAT (7950)
RIBOSOME, PROTEOLYSIS, POLYPEPTIDE (3060)
RIBOSOME, RECONSTITUTION, CORE PARTICLE, RNA, RAT (2310)
RIBOSOME, RIBONUCLEASE (7179)
RIBOSOME, SUBUNIT, MICROSCOPY (7784)*
RIBOSOME DISSOCIATION, MONOVALENT CATIONS, RAT (8651)
RIBOSOME FRACTION, POLYPHENYLALANINE SYNTHESIS INITIATION (7817)
RIBOSOME PROTEINS, ATIGENIC PROPERTIES HEPATOMA, RAT (7809)
RIFAMPICINE, STEATOSIS, HYPERGLYCEMIA, PYRIDOXINE, ANTITUBERCULOUS MECHANISM, MALNUTRITION (5229)
RNA, AUTORADIOGRAPHY, LASIOCARPINE (3817)*
RNA, CELLS, FASTING, RAT (4702)*
RNA, HIGH MOLECULAR WEIGHT, NUCLEASE (7915)*
RNA, HISTOCHEMISTRY, PANCREAS, ETHIONIN TOXICITY (3836)
RNA, LEUCINE TRANSFER, PLASMA CELL TUMOR (1777)
RNA, MESSENGER, POLYSOME (7916)*
RNA, NUCLEI, GLUCOCORTICOID (7155)*
RNA, RIBOSOMAL, RAT (0124)
RNA CHAINS, INITIATION, 3-METHYLCHOLANTHRENE (8658)
RNA SYNTHESIS, ADRENALECTOMY, METAL ACTIVATION (8640)
RNA SYNTHESIS, CORTISONE, RAT (4824)*
RNA SYNTHESIS, X-IRRADIATION (2423)
RNA TURNOVER, POLYACRYLAMIDE GEL ELECTROPHORESIS (3842)
RNA TURNOVER, PROTEIN-DEFICIENCY, RAT (5561)*
RUMINANT, MITOCHONDRIA, BETA-HYDROXYBUTYRATE DEHYDROGENASE (0121)
RUNTING SYNDROME, GRAFT VS. HOST

REACTION, BACTERIAL ENDOTOXEMIA, ELECTRON MICROSCOPY, MICE (1564)•
RUPTURE, HEMATOMA, LAMB (2097)
RUPTURE, NEONATE (6037)
RUPTURE, PREGNANCY (5247)
RUPTURE, TRAUMA (4458)
RUPTURE, TRAUMATIC, TREATMENT (2095)
SARCOIDOSIS, CHOLESTASIS, ORAL CONTRACEPTIVES (9075)
SARCOIDOSIS, GRANULOMATOUS HEPATITIS, HISTOPATHOLOGY (9106)
SARCOMA, OSTEOGENIC, HEMOCHROMATOSIS (2839)
SARCOMA, PRIMARY, THOROTRAST (9076)
SCAN, AMEBIC ABSCESS (7016)
SCAN, CIRRHOSIS, ABSCESS, COLLOIDAL GOLD (4889)•
SCAN, CIRRHOSIS, CHRONIC HEPATITIS (7629)
SCAN, HEPATOCARCINOMA, DIAGNOSIS (2034)•
SCAN, PANCREAS (4749)
SCAN, RADIOALBUMIN, METASTASES (5673)
SCANNING, METASTASIS (2511)•
SCANNING, 99MTC, 113M IN SPLEEN, PEDIATRIC PATHOLOGY (5719)
SCANNING, 99MTC-TECHNETIUM DIOXIDE, BLOOD-FLOW STUDY (8050)
SCANNING, 113M INDIUM, DIAGNOSIS (5685)
SCANNING, RADIOACTIVE NUCLEI (4061)
SCANNING, RESUSCITATION, RADIOISOTOPE (5724)
SCANNING, TC - 99M TECHNETIUM SULFIDE COLLOIDAL (2536)
SCANNING, VIRAL HEPATITIS, FUNCTIONAL ALTERATIONS (8351)
SCHISTOSOMATIC FIBROSIS, PORTAL HYPERTENSION (0646)
SCHISTOSOMIASIS, HISTOPATHOLOGY, SOUTH AMERICA (2260)
SCINTIGRAPHIC APPEARANCE, SURGERY (4381)
SCINTIGRAPHY, HEPATOMEGALY, ALCOHOLIC STEATOSIS, EXTRAHEPATIC TUMOR, PRIMARY CANCER (5661)
SCINTILLOGRAPHY, 113M IN ISOTOPE, KUPFFER CELL (8716)
SCINTISCAN (4032)
SCINTOGRAPHY, CIRRHOSIS, BILIARY DUCT, OBSTRUCTION, HEPATITIS, STEATOSIS (2430)
SCINTOGRAPHY, FUNCTIONAL TEST, AU 198 COLLOIDAL (2535)
SCLERODERMA, BILE DUCT (6010)
SECONDARY TUMORS, HEPATIC ARTERY, 5-FLUOROURACIL (8301)
SECRETION, BILIRUBIN, SHEEP (4781)
SECRETION, COPPER, CERULOPLASMIN (1702)•
SECRETION, PERITONITIS (3568)
SECRETION, PIGMENT, BILIRUBIN (1734)
SERINE DEHYDRATASE, PANCREAS, ADRENALS DIET, RAT (6479)
SERINE METABOLISM, PORTACAVAL SHUNT, RAT (1704)•
SEROLOGICAL DIAGNOSIS, IMMUNOFLUORESCENCE, MITOCHONDRIAL ANTIBODY, HEPATITIS (3542)•
SEROTONIN METABOLISM, ALDEHYDES (3919)
SERUM, VIRAL HEPATITIS, AUSTRALIAN-SH ANTIGEN, LONDON (3625)•
SERUM ALBUMIN, LIPOPROTEINS, POTASSIUM ION SECRETION, ALBUMIN (3163)•
SERUM ALBUMIN, SYNTHESIS OF SERUM ALBUMIN (1699)•
SERUM HEPATITIS, AUSTRALIA ANTIGEN (6868)
SERUM HEPATITIS, EPIDEMIOLOGY, VIENNA (2883)
SERUM HEPATITIS, HEMODIALYSIS UNIT, PATIENTS (0613)
SERUM HEPATITIS, NEW ORLEANS, EPIDEMIOLOGY (3628)
SERUM HEPATITIS, PATIENTS, PROFESSIONAL RISK (9122)
SERUM HEPATITIS, SH ANTIGEN, PREVALENCE (9114)•
SERUM HYALURONIDASE, CIRRHOSIS, CARBON TETRACHLORIDE POISONING (2163)•
SERUM TRANSAMINASE, ISONIAZID, TUBERCULOSIS (1358)
SGOT, SGPT, ARGINASE (7159)•
SGPT, ACUTE VIRAL HEPATITIS (7614)
SHOCK, HEMORRHAGE, MORPHOLOGY (7539)•
SHOCK, TRAUMA, JAUNDICE (5238)
SIDE-TO-END PORTACAVAL SHUNT (2153)
SINUSOIDAL ENGORGMENT, CENTRAL VEIN DILATION, CONGESTIVE HEART FAILURE (6929)•
SINUSOIDS, ENDOTHELIAL LINING, MICROSCOPY (7791)•
SINUSOIDS, MICROCIRCULATION, ARTERIAL PRESSURE, FLOW ARREST, VENOUS PRESSURE (5629)•
SINUSOIDS, ULTRASTRUCTURE (5471)
6-PHOSPHOGLUCONATE DEHYDROGENASE, SHEEP (1604)
16-ALPHA-GLUCURONYLTRANSFERASE, CYTOSOLIC, PROPERTIES (7783)•
65ZN UPTAKE, NUCLEAR FRACTION (2425)
SIZE, FUNCTION, BLOOD FLOW, CIRRHOSIS (9164)
SKIN, EPIDERMIS LYSOSOME, MAN, CAPSAICIN (2444)
SLICE, FATTY ACID INCORPORATION, PHOSPHOLIPID, ETHIONINE, RAT (2432)
SMALL INTESTINE, PLACENTA, ENZYME, FETUS, MAN (1730)
SOLITARY CYST, BILIARY TRACT, TREATMENT (0545)
SOLUBLE PROTEIN, DEGRADATION, SIZE (7899)•
SORBITOL DEHYDROGENASE, DIETHYLNITROSAMINE, RAT (8297)
SORBITOL DEHYDROGENASE, GLUTAMIN DEHYROGENASE, CC14 LIVER DAMAGE (8320)•
SPLEEN, AMYLOIDOSIS, RESORPTION HISTOLOGY (8480)
SPLEEN, ENDOTOXIN, LOCALIZATION SALMONELLA ENTERITIDIS (5983)•
SPLEEN, LYSOSOMES, ANTIGEN STORAGE, ANTIBODY FORMATION (0148)
SPLEEN, SATURATED HYDROCARBON (8523)
SQUAMOUS-CELL CARCINOMA, METASTASIS, STOMACH (0285)

STEATOSIS, ALCOHOL INGESTION, PATHOGENESIS (9111)
STEATOSIS, ALCOHOLISM, DIET, PATHOGENESIS (9110)
STEATOSIS, ALCOHOLISM, PATHOGENESIS (9094), (9095)
STEATOSIS, CHRONIC ALCOHOLISM, ALCOHOL METABOLISM (9154)
STEATOSIS, CIRRHOSIS, HEPATITIS, DIAGNOSIS, SERUM IMMUNOGLOBULINS (8023)
STEATOSIS, DIET-INDUCED, RAT (0415)
STEATOSIS, ENCEPHALOPATHY, URIC ACID LEVELS, CHILDREN (8304)
STEATOSIS, ESSENTIAL PHOSPHOLIPIDS, SERUM TRANSAMINASES (9099)
STEATOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS, CHRONIC ALCOHOLISM (8306)
STEATOSIS, LIPOGENESIS, PHOSPHOLIPIDS, CHOLESTEROL (8635)*
STEATOSIS, SYMPTOMATOLOGY, THERAPY (9068)
STEROID, RAT (5412)*
STROMAL RETICULAR CHANGES, AGE (3832)
SUBCELLULAR FRACTION, HEMOLYSIS, RABBIT (0896)
SUBCUTANEOUS HEPATOMA, METASTASES (7560)
SUBMICROSOMAL FRACTIONS, ESTERASES (7774)*
SUBMITOCHONDRIAL PARTICLES, NADH OXIDATION, N'-ALKYLNICOTINAMIDE CHLORIDE (7926)
SUBSTITUTION, TEMPORARY, PERMANENT (4403)
SUBSTRATE AND COFACTOR CONCENTRATIONS, SEASONAL VARIATIONS, RAT (8668)
SUGAR DEHYDROGENASES, CHROMATOGRAPHY, ELECTROPHORESIS (6324)
SULFOBROMOPHTHALEIN CLEARANCE, AGED (1821)
SULFOBROMOPHTHALEIN, STORAGE, TRANSPORT, DIABETES MELLITUS, CHRONIC ALCOHOLISM (2065)
SUPPURATION, ECHINOCOCCAL CYST (4675)
SURGERY, ACUTE NON-VIRAL HEPATITIS (7596)
SURGERY, ANASTOMOSIS, CIRRHOSIS (4616)
SURGERY, BILE DUCT, ATRESIA (4540)
SURGERY, CHROMOSOME, HEPATECTOMY (2295)
SURGERY, JAUNDICE, CHOLESTASIS, HEPATITIS (5179)
SURGERY, MALIGNANCY, INJURY (9079)
SURGERY, MITOSIS (4368)*
SURGERY, NUTRIENT DEMANDS (6047)
SURGERY, REGENERATION, THYMECTOMY (3984)
SURGERY, TRANSPLANT (2834)
SURGERY, TUMOR, TRAUMA (2046)
SURGICAL ANATOMY (3848)
SUSPENSIONS, NADP, NADPH, LOSS (8670)
SYNTHESIS, CYTOCHROME C, HEMIN STIMULATING EFFECT (3955)
SYNTHESIS, IN VITRO, PURINE, RAT (2443)
SYNTHETASE, FATTY ACID, ENZYMES, LIGHT ABSORPTION (1780)
SYNTHETASE, FATTY ACID, NUCLEOTIDE (1778)
TAURINE, ENZYME, BIOSYNTHESIS, CHICK (0889)
TESTOSTERONE-PERFUSED, STEROIDGLUCURONIDE, SEX SPECIFICITY (3975)
TETRAMERIASIS, MONKEY (4683)
THERAPY, CHRONIC HEPATITIS, CIRRHOSIS (9147)
THIAMINE, CO-ENZYME, RAT (0874)
THIAMINE DEFICIENT DIET, PROTEIN SYNTHESIS, RAT (0134)
THIOACETAMIDE, NECROSIS, HEPATIC LOBULES (0854)*
THIOACETAMIDE, PREDNISOLONE, CYCLOPHOSPHAMIDE, METABOLISM, RAT (0871)
THIOACETAMIDE INDUCED, CIRRHOSIS, DEHYDROGENASES, HISTOCHEMISTRY (8382)
^{32}P INCORPORATION, OVARIAN HORMONES (3961)
THYMIDINE KINASE, ACTIVATION, C. PERFRINGENS (3846)
THYROID HORMONE, POLYSOME, MONOSOME, PROTEIN, RAT (0133)
THYROXIN CARBON, INCORPORATION, TADPOLE (2448)
TISSUE, HEPATOCYTES, CORTISOL, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS (5461)
TISSUE CULTURE, AEROBIC METABOLISM, MAN (8519)
TOLBUTAMIDE TEST, METABOLISM, GLUCOSE (4916)
TOXIC DAMAGE, RESORT TREATMENT (8336)
TOXIC HEPATITIS, LIVER FUNCTION TESTS BIOPSY, PATHOLOGY, SYNDROME (4445)*
TOXICITY (5248)
TOXICITY, ACUTE VIRAL HEPATITIS (6034
TOXICITY, ALKALOID, RAT (5239)
TOXICITY, CARBON TETRACHLORIDE, POTENTIATION, CATECHOLAMINES, MICE (0581)*
TOXICITY, CHLORETHANOL, GROWTH, RAT (5231)
TOXICITY, CHLOROFORM, ENZYME (3607)
TOXICITY, DDT, THERAPY (7584)
TPN-LINKED ENZYME, TISSUE PROTEIN, DIET EFFECT (0130)
TRACER STUDIES, LIVER PATHOLOGY, LIVER REGENERATION, DNA (1718)*
TRANQUILIZERS, HISTOPATHOLOGY, HEPATITIS (8329)
TRANSALDOLASE, HYPERTHYROID (3834)
TRANSAMINASE, CELL DAMAGE, CHRONIC STAGE (6347)
TRANSAMINASE, DEHYDROGENASE, OXYDASE (8364)*
TRANSAMINASE, HISTOLOGICAL CORRELATION (6347)
TRANSAMINASE, PYRAZINAMIDE, TOXICITY (8324)*
TRANSKETOLASE ACTIVITY, SOUND EFFECT (7963)
TRANSFER RNA, PROTEIN SYNTHESIS, AMINO-ACID INCORPORATION, SYNTHESIS INHIBITORS, RAT (5600)
TRANSGLUTAMINASE, INACTIVATION, TETRATHIONATE (2300)
TRANSMEMBRANE POTENTIAL, RESTING POTENTIAL, CCL4 TOXICITY, DEPOLARIZATION (4447)*

RANSPLANT (3978), (4467)
RANSPLANT, ANGIOGRAPHY, CIRCULATION (2466)
RANSPLANT, BILIRUBINEMIA, HETEROTOPIC GRAFT, HUMAN, BABOON (6007)
RANSPLANT, BLEEDING (7552)
RANSPLANT, CANINE, DONOR (2451)
RANSPLANT, HETEROTROPIC ALLOGRAFT, IMMUNOSUPPRESSION (2069)
RANSPLANT, HISTOLOGY, HISTOCHEMISTRY (6823)
ANSPLANT, IMMUNOLOGY, PIG, DOG (8285)
ANSPLANT, ISOGENIC, HISTOPATHOLOGY (8281)
ANSPLANT, MAN (6792), (6815)
ANSPLANT, ORTHOTOPIC, IMMUNOSUPPRESSIVE AGENTS (2067)
ANSPLANT, ORTHOTOPIC, MORBIDITY, MORTALITY (2068)
ANSPLANT, ORTHOTOPIC, PIG (1379)
ANSPLANT, PATHOLOGY (2070)
ANSPLANT, REJECTION, MAN (9087)
ANSPLANT, SURGERY (3212)
ANSPLANT, VASCULAR ANOMALIES, PRESERVATION, RENAL TRANSPLANTS, BLOOD GROUPS, TISSUE GROUPS, ISCHEMIA (5186)
ANSPLANTATION (2811), (3197)
ANSPLANTATION, ANESTHESIA (3188)
ANSPLANTATION, AZOTHIOPRINE, SERUM, IMMUNOSUPPRESSIVE ACTIVITY (6766)•
ANSPLANTATION, HUMAN DONOR, SURGICAL PROTOCOL (5985)•
ANSPLANTATION, INDICATIONS, FACTORS (3964)
ANSPLANTATION, RETROPERITONEAL SPACE, HYPERTENSION (3224)
ANSPLANTATION, SPLENOPORTAL ANASTOMOSIS, LIVER HYPERTROPHY, SURGICAL TECHNIQUE, PIG (6012)
ANSPLANTATION, SURGERY, HEPATOMA (1388)
ANSPORT, FOOD DYES (1641)
ANSPORT RNA, GOPHER (0873)
ANSPORT, SECRETION, CHLOROGUANIDE-TRIAZINE (1717)•
ANSUMBILICAL PORTAL HEPATOGRAPHY, PORTOSYSTEMIC SHUNT, HEMORRHAGE (4515)
AUMA, ACUTE NON-VIRAL HEPATITIS (6083)
AUMA, ANALYSIS (0597)
AUMA, CLOSED, SURGERY (6049)
AUMA, DIAGNOSIS, TREATMENT (8028)
AUMA, HEMOPHILIA, HEMATOMA (0591)
AUMA, HEPARIN, SURGERY (6073)
AUMA, HEPATECTOMY, DRAINAGE, EXPLORATION LAPAROTOMY, RADIOLOGICAL EXAMINATION, SURGICAL PROCEDURE (6052)
AUMA, HILAR REGION, SURGERY (1411)
AUMA, LEFT LOBE (6787)
AUMA, LESIONS, POLYVISCERAL, CENTRAL HEMATOMA (6836)
AUMA, MORTALITY, HEMORRHAGE (7591)
AUMA, NON-VIRAL HEPATITIS (6188)
AUMA, PENTOBARBITAL, CATABOLISM (6081)
TRAUMA, PULMONARY COMPLICATIONS (7588)
TRAUMA, RIGHT LOBECTOMY (7555)
TRAUMA, SERUM GLYCOPROTEIN (7551)
TRAUMA, SUPRARENAL VENA CAVA (1408)
TRAUMA, SURGERY (2092)
TRAUMA, SURGERY, COMPLICATION (2049)
TRAUMA, SURGICAL MANAGEMENT (9107)
TRAUMATIC INJURIES, MANAGEMENT (4464)
TRIELAIDIN, HEPATIC LIPID, PLASMA (6461)
TRIGLYCERIDE LEVELS, ALCOHOL EFFECT, LIPID METABOLISM (8669)
TRIGLYCERIDE OUTPUT, FATTY ACIDS, RAT (5584)•
TRNA, AMINO ACID, FASTING ABSORPTION (3089)
TRNA, SERINE-ACCEPTING CAPACITY, ESTRADIOL, IMMATURE HENS (6481)
TRYPTOPHAN PYRROLASE, BRAIN ENZYMES, IMMOBILIZATION, RAT (0859)
TRYPTOPHAN PYRROLASE, NICOTINE, (5466)
TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, MORRIS HEPATOMA, HISTONE (7537)•
TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE, QUINOLINIC ACID STIMULATION (7938)
TUBERCULOSIS (2853)
TUBERCULOSIS, ANATOMO-PATHOLOGIC/STATISTICAL EVALUATIONS (3581)
TUBERCULOSIS, AUTONOMOUS, BIOPSY (0594)
TUBERCULOSIS, HISTOLOGY (7593)
TUMOR, AU198-SCINTOGRAPHY, RADIO-I SERUM ALBUMIN (3302)
TUMOR, BENIGN, TREATMENT (2075)
TUMOR, BLOOD SUPPLY (8263)•
TUMOR, CLASSIFICATION (4382)
TUMOR, DIAGNOSIS (4380)
TUMOR, DIETHYLNITROSAMINE, GLUCOSE-6-PHOSPHATASE, ALDOLASE (6761)•
TUMOR, DIETHYLNITROSAMINE-INDUCED, SERUM ALDOLASE (3081)
TUMOR, HEPATIC ARTERY LIGATION (7571)
TUMOR, KIDNEY, POLYGLOBULISM (1363)
TUMOR, MALIGNANT, SURGERY (1382)
TUMOR, MICROSOMES, MITOCHONDRIA, LIPIDS (8287)
TUMOR, PATHOLOGY, INFANCY, CHILDHOOD (4383)
TUMOR, RESECTION, RIGHT LOBE (6009)
TUMOR, RESECTION, TYPES (4377)
TUMOR, SCINTILLATION CAMERA, DIAGNOSIS (5670)
TUMOR, SCLEROSIS (5181)
TUMOR, SURGERY (4385)
TUMOR DETECTION, SCANNING, GAMMA-ENERGY, NUCLIDES (1814)
TUMOR IMPLANTATION, DELTA 4-STEROID HYDROGENASE ACTIVITY, RAT (2279)•
TYROSINE, METABOLISM, ENZYME, RAT (1737)
TYROSINE AMINOTRANSFERASE, COLD, SHAKING, ADRENALECTOMY, MICE (0832)•
TYROSINE AMINOTRANSFERASE, RAT FETUS, NUCLEOTIDE (5562)•
TYROSINE TRANSAMINASE, AMANITINE, CORTISOL (6451)•
TYROSINE TRANSAMINASE, CORTISOL, PYRIDOXINE (6441)•

TYROSINE TRANSAMINASE, STEROID-MEDIATED INDUCTION, PORTTRANSCRIPTIONAL CONTROL (1755)
TYROSINE TRANSAMINASE CONCENTRATION, HYDROCORTISONE-MEDIATED CHANGES, IMMUNOCHEMISTRY, RAT (3076)
UDP-GLUCURONIC ACID PYROPHOSPHATASE, HOMOGENATE, MICROSOMES (7776)*
UDP-GLUCURONYL TRANSFERASE, CHOLESTASIS, PHENOBARBITAL (8631)*
ULCERATIVE COLITIS, ABSCESS, EXTRAINTESTINAL COMPLICATIONS, EYES, ANAL PROLAPSE (5130)
ULTRASONIC SCANNING, CIRRHOSIS, METASTASES, CANCER, HUMAN (4892)*
ULTRASTRUCTURE, ATP DEFICIENCY, ETHIONINE, FRUCTOSE, FEMALE RAT (8551)*
ULTRASTRUCTURE, BENZYLIDENEYOHIMBOL, RAT, DOG (3028)*
ULTRASTRUCTURE, BILE FLOW RATE, CHOLESTASIS, CANALICULI (0820)*
ULTRASTRUCTURE, CARBON TETRACHLORIDE, HYPOTHERMIA, RAT (3825)
ULTRASTRUCTURE, DISEASE PROCESS (4438)
ULTRASTRUCTURE, ENDOTOXIC SHOCK (6928)*
ULTRASTRUCTURE, EXHAUSTIVE EXERCISE, RAT (3068)
ULTRASTRUCTURE, FLUOROCARBON, PERFUSION, RAT (8511)*
ULTRASTRUCTURE, GOLGI, ELECTRON MICROSCOPY (7798)*
ULTRASTRUCTURE, HEPATITIS, CIRRHOSIS (2296)
ULTRASTRUCTURE, HISTOCHEMISTRY, LYSOSOMES, CHLOROQUINE (4449)*
ULTRASTRUCTURE, HISTOCHEMISTRY, PHOSPHOPROTEINS, PLASMA MEMBRANES (3939)*
ULTRASTRUCTURE, HISTOLOGY, BIOCHEMISTRY (1575)*
ULTRASTRUCTURE, INJURY, FRUCTOSE, CYTOLYSOSOME, ENDOPLASMIC RETICULUM, ELECTRON MICROSCOPY (3806)*
ULTRASTRUCTURE, INTERCELLULAR JUNCTIONS, ZONULAE OCCLUDENTES, TECHNIQUES (3790)*
ULTRASTRUCTURE, METABOLISM (0867)
ULTRASTRUCTURE, METABOLISM, CHOLESTEROL, CHYLOMICRONS (0010)*
ULTRASTRUCTURE, METAMORPHOSIS, THYROXINE, TADPOLE (5465)
ULTRASTRUCTURE, MICROBODIES, PEROXIDASE ACTIVITY, 3-AMINO-1,2,4-TRIAZOLE (4747)*
ULTRASTRUCTURE, MITOCHONDRIA (1588)
ULTRASTRUCTURE, MUCOPOLYSACCHARIDOSES, CHILDREN (9088)
ULTRASTRUCTURE, PEROXISOMES, ZONAL SEDIMENTATION, SIZE (3824)
ULTRASTRUCTURE, PROTEINS, ORGANELLES, GEL ELECTROPHORESIS, BOVINE (3943)*
ULTRASTRUCTURE, PUROMYCIN, POLYRIBOSOMAL DISAGGREGATION (6830)*
ULTRASTRUCTURE, SPIRONOLACTONE, HEPATOCYTES, DRUG EFFECT (3809)*
ULTRASTRUCTURE, TOXOHORMONE, RAT (6286)*
UPTAKE, ANTIMONY POTASSIUM TARTRATE, BINDING MECHANISM, SCHISTOSOMIASIS (0136)
UREA CYCLE ENZYMES, ANTIBIOTICS, RAT (1760)
VAGATOMY, BILIARY TRACT, SURGERY (0671)
VAGOTOMY, CHOLECYSTECTOMY, SECRETORY FUNCTION (0151)
VAGOTOMY, CHOLEITHIASIS, CHOLECYSTECTOMY (5304)
VAGOTOMY, GALLBLADDER (5178)
VASCULAR ANATOMY, CARCINOMA (6322)
VASCULARIZATION, PANCREAS, COLON, SURGERY, CELIAC TRUNK (5145)
VASCULATURE, BILIARY OBSTRUCTION (1348)*
VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, SPLEEN, INTESTINE (6509)
VASOPRESSIN, BLOOD FLOW, GALACTOSE UPTAKE, MAN (0863)
VEIN, INNERVATION, CAT, DOG (7996)
VENOUS CIRCULATION, DOG (6508)
VENOUS OUTFLOW BLOCK, STRUCTURE (6802
VIRAL HEPATITIS, ACUTE ATROPHY, AMINOPEPTIDASE, ALKALINE PHOSPHATASE, ATPASE, GLUCURONIDASE, HISTOCHEMISTRY (5267)
VIRAL HEPATITIS, ANICTERIC EHMODIALYSIS (9129)
VIRAL HEPATITIS, AUSTRALIA ANTIGEN (5272)
VIRAL HEPATITIS, AUSTRALIA-SH ANTIGEN (3629)
VIRAL HEPATITIS, CHIMPANZEE CARRIER, PREVENTIVE HEALTH MEASURES (3639)
VIRAL HEPATITIS, CIRRHOSIS, BLOOD GROUP (6937)*
VIRAL HEPATITIS, COMPARATIVE, SUBHUMAN PRIMATE, MAN (2881)
VIRAL HEPATITIS, DIAGNOSIS, ANTIGEN (7211)*
VIRAL HEPATITIS, DIAGNOSIS, TREATMENT (3635)
VIRAL HEPATITIS, DRUG USERS (6857)*
VIRAL HEPATITIS, HEMOGLOBIN A2, HEMOLYTIC ANEMIA, BLOOD GROUPS, JAUNDIC (5260)
VIRAL HEPATITIS, HIM-TEST, LIVER FUNCTION (6550)
VIRAL HEPATITIS, IMMUNOGLOBULIN LEVEL DIAGNOSIS (8035)
VIRAL HEPATITIS, KENYA (6866)
VIRAL HEPATITIS, LIPID DIGESTION (3637)
VIRAL HEPATITIS, MORBIDITY, MORTALITY ISRAEL (6865)
VIRUS HEPATITIS, POSTHEPATIC CIRRHOSIS, CHOLELITHIASIS, HEMICOLECTOMY, ALCOHOL CONSUMPTION, CHOLECYSTOPATHY (5265)
VIRAL HEPATITIS, URIDINEDIPHOSPHOGLUCOSE (2884)
VITAMIN, LIPOIC ACID, HEPATIC COMA, CHRONIC HEPATITIS (2829)
VITAMIN, PATHOLOGY (5242)
VITAMIN K, COAGULATION STUDY, FACTORS VII-X, PROTHROMBIN SYNTHESIS (0822)*

- VITAMIN K, CYCLOHEXIMIDE INHIBITION, PROTHROMBIN BIOSYNTHESIS, RAT (3201)
- VITAMIN K CONTENT, PHYLLOQUINONE, HORSE LIVER, SALICIC ACID, SPECTROSCOPY (5437)•
- WALKER CARCINOMA 256, MICROSOMES, STEROID HYDROXYLATION (8630)•
- WEIGHT, BLOOD FLOW, RADIOGOLD, RADIOXENON (5638)
- WILSON'S DISEASE, HEPATOLENTICULAR DEGENERATION, ESOPHAGEAL VARICES, HEMORRHAGE, SURGERY (3314)•
- WILSON'S DISEASE, LENTICULAR DEGENERATION, COPPER METABOLISM (6019)
- WILSON'S DISEASE, PENICILLIN, CUTANEOUS LESIONS (0569)
- WILSON'S DISEASE, PENICILLIN G, COPPER METABOLISM (7564)
- WILSON'S DISEASE, ULTRASTRUCTURE, COPPER, MITOCHONDRIA, LYSOSOMES, NUCLEAR GLYCOGEN, STEATOSIS (2799)•
- WILSON'S DISEASE, X-RAY APPARATUS, FLUORESCENCE, COPPER DISTRIBUTION (5677)
- XANTHINE OXIDASE, DITHIOERYTHRITOL (6466)
- XANTHINE OXIDASE, NEWBORN (3973)
- XANTHOPHYLL, STEATOSIS, KWASHIORKOR (2857)•
- X-RAY, ENZYMATIC PROTEINS, ELECTROPHORETIC BEHAVIOR, RAT (2431)
- ZIEVE'S SYNDROME, JAUNDICE, STEATOSIS, ALCOHOLIC CIRRHOSIS, HEMOLYTIC ANEMIA (5284)
- ZINC, DNA, CIRRHOSIS (7632)•

LIVER DISEASE
- ABSCESS, HEPATOMEGALY, DYSENTERY, JAUNDICE (4686)
- ALCOHOLISM, HEMORRHAGIC DIATHESIS (4455)
- BIOPSY, FIBROSIS, FATTY INFILTRATION, HEPATIC NECROSIS, ALKALINE PHOSPHATASE (4307)•
- BLIND BIOPSY (4068)
- BLOOD ALTERATIONS, VITAMIN B12 (8291)
- CHRONIC, ANTITHYROID ANTIBODY (4499)
- CHRONIC, BILE BSP EXCRETION, PLASMA (4523)
- CHRONIC, SCANNING, RADIOACTIVE COLLOIDAL GOLD (8020)
- CHRONIC, SERUM IMMUNOGLOBULINS, ANALYSIS (4498)
- CONGENITAL, ACQUIRED, GLUCURONYL TRANSFERASE ACTIVITY (7528)•
- DIAGNOSIS, ANGIOGRAPHY, ISOTOPE SCANNING (7220)•
- DIAGNOSIS, PHOTOSCAN, HEPATIC METASTASIS, LYMPHOSARCOMA (4016)•
- ENZYME, DUPUYTREN'S CONTRACTURE (4373)
- FATTY LIVER, CIRRHOSIS, HEPATITIS, HEPATOMA, MALNUTRITION, THERAPY (2840)
- FLUKE, FASCIOLA HEPATICA, SGOT LEVEL, TREATMENT DETERMINATIONS, ANTHELMINTIC DRUGS (4661)•
- HEPATIC CELL NECROSIS, DISSEMINATED, LOCALIZED, CONGENITAL HEART DISEASE (4366)•
- HEPATITIS, CIRRHOSIS, HEPATIC-ASSOCIATED ANTIGEN (7600)•
- HEPATITIS, HALOTHANE, LYMPHOCYTE (8326)•
- HEPATITIS, HEMOCHROMATOSIS, WILSON'S DISEASE, ARTHROPATHY (3553)
- ICTERUS, POSTSURGICAL, PRIMARY (2939)
- INTESTINAL HEMORRHAGE, THORACIC DUCT DRAINAGE (4501)
- JAUNDICE, INFANTS, BILIARY ATRESIA (2928)
- MANAGEMENT (4404)
- METABOLAN (8292)
- MINERAL WATER THERAPY (4430)
- PHOSPHATASE, INTESTINE, BILIARY TRACT (3675)
- SERUM ARGININOSUCCINATE LYASE CONCENTRATION INDEX (2869)•
- SERUM CHOLINESTERASE, DIAGNOSIS (4062)
- SERUM GUANASE (3572)
- SKIN CHANGES, GASTROINTESTINAL DISORDERS (4654)
- SURGERY, DIAGNOSIS (4393)
- ULCERATIVE COLITIS, COLECTOMY (4308)•
- ULCERATIVE COLITIS, PERICHOLANGITIS (4324)
- VENOUS OCCLUSION, BUDD-CHIARI SYNDROME (9062)
- VENOUS OCCLUSION, LIVER BIOPSY, PATHOGENESIS, ETIOLOGY (9063)

LIVER FUNCTION
- METABOLISM, B-LIPOPROTEINS, FATTY ACIDS, ACTINOMYCIN, D (8615)•
- TESTS, CIRRHOSIS, PROTEIN SYNTHESIS, ANABOLIC STEROIDS (4505)•
- TISSUE ADHESIVE, IMPLANTATION, DOG (2454)

LIVER SCAN
- DEFECT, ADRENAL MASS (1390)

LUNG
- ACIDOSIS, INTESTINE, CATECHOLAMINES (3901)
- ACUTE PANCREATITIS, THROMBOSIS, ENZYMATIC TOXEMIA (2789)
- COMPLICATIONS, LIVER AMEBIASIS (4686)
- ESOPHAGOBRONCHIAL FISTULA, DYSPHAGIA, DIVERTICULA, ACHALASIA (6590)
- HEMATOMA, GASTRIC TUMOR, CHILD (4147)
- MEGAESOPHAGUS, MYCOBACTERIA (0999)
- PARENTERAL INFECTION, ACUTE DIARRHEA, FATAL (3710)

LYMPH
- COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION (2164)•
- LIPOPROTEIN, PLASMA, RAT (3991)•
- THORACIC DUCT, ERYTHROCYTE, CIRRHOSIS (2143)

LYMPH CIRCULATION
- BLOOD VESSELS, BODY FLUID FLOW, LIVER (3254)
- CAT, LARGE INTESTINE, NERVE PLEXUS (2492)
- COMMUNICATION, PANCREAS, BILIARY TRACT, INFLAMMATION (2786)•
- CONTRAST MEDIUM, STORAGE, LIVER, LYMPHOGRAPHY, FOOT (2818)
- LIPIDOSIS, INTESTINAL, NEONATAL, GENETIC, MICE (2426)

  - LYMPHANGIECTASIS, INTESTINAL (8460)
  - MESENTERIC, IMMUNOGLOBULIN-A (2484)•
  - MESENTERY, EFFERENT LYMPHATIC, LIGATION, PERIPHERAL OFFER, CAT (2496)
  - VESSELS, MAN (0177)
- LYMPHANGIECTASIA
  - COLON, PROTEIN LOSS, MALABSORPTION (1225)•
  - INTESTINAL, CHYLOUS ASCITES, WALDMANN DISEASE (8471)
  - INTESTINAL, IMMUNOLOGY (4600)
  - INTESTINE, TRIGLYCERIDES, DIET CHILREN (1202)
- LYMPHANGIOGRAPHY
  - LIVER, ANATOMOPATHOLOGY, SEMINOMAL METASTASES (3552)
  - PANCREATITIS, DIFFERENTIAL DIAGNOSIS (6567)
- LYMPHATIC
  - ADENITIS, MESENTERY, INTUSSUSCEPTION, CHILDHOOD (4597)
  - CHYLOUS ASCITES, INGUINAL HERNIA, INFANT (6207)
  - CHYLOUS ASCITES, SMALL INTESTINE, TRIGLYCERIDE, FATTY ACID (6218)
  - COLON, LYMPHOGRAPHY, DOG (6505)
  - COLON, MUCOSA, DISTRIBUTION (5435)•
  - INTESTINAL, EXUDATE ENTEROPATHY (4591)
  - INTESTINE, VILLUS, PUMP, MORPHOLOGY (6501)•
  - LARGE INTESTINE, CAT, NERVE PLEXUS (2492)
  - LIVER, SURGERY, TRANSPLANT, DOG (6006)
  - LIVER INJURY, CIRCULATION, CIRRHOSIS (6904)
  - LYMPH NODE, REMOVAL, GASTRIC CANCER (4979)•
  - LYMPHOBLAST, TRANSFORMATION TEST, DRUG-INDUCED HEPATITIS (4072)
  - LYMPHOID HYPERPLASIA, TERMINAL ILEUM (7422)
  - MALIGNANT LYMPHORETICULOSIS, ACUTE CHYLOPERITONEUM, HEMOLYTIC ANEMIA (7745)
  - NODE, INTRAABDOMINAL, LIPOFUSCINOSIS (6203)
  - NODULE, HEPATITIS, VIRUS MHV-3 (4481)
  - OBSTRUCTION, PANCREAS, INFLAMMATORY DISEASE, ASCITES, THORACIC DUCT DECOMPRESSION (2785)
  - PRIMARY LYMPHANGIECTATIC GASTROENTEROPATHY, PROTEIN LOSS, EOSINOPHILIA (7734)
  - SMALL INTESTINE, HISTOLOGY, MOUSE (0026)
  - TUMOR, STOMACH UPSET, RADIOLOGICAL TREATMENT (5786)
  - VENOUS ANASTOMOSIS, ESOPHAGEAL HEMORRHAGE (4125)
  - VESSELS, MAN (0177)
- LYMPHOBLASTS
  - CELL CULTURE, INFECTIOUS HEPATITIS (2106)•
- LYMPHOCYTE
  - HEMAGGLUTINATION, RNA, DNA, HEPATITIS (6254)•
  - INCUBATION, SERUM, EPITHELIAL CELLS, COLON (6730)•
- LYMPHOCYTOSIS
  - LIVER, MALARIA (4660)•
- LYMPHOGRANULOMATOSIS
  - FEVER, HODGKIN'S DISEASE, LYMPH NODES, IRRADIATION (6539)
- LYMPHOID TUMOR
  - ESOPHAGEAL, RADIOGRAPHY (4111)
  - HYPERPLASIA, HYPERGLOBULINEMIA, LARGE INTESTINE (3498)
  - STOMACH, MAN (0317)
- LYMPHOMA
  - LEUKEMIA, ESOPHAGUS (1839)
  - MALIGNANT, SMALL INTESTINE, SURGERY, RADIATION (1932)
- LYMPHOSARCOMA
  - DIAGNOSIS, PHOTOSCAN, LIVER DISEASE, HEPATIC METASTASIS (4016)•
  - ENTEROPATHY, MALABSORPTION (4257)
  - GASTRIC, GASTROSCOPY, RADIOLOGY, HISTOLOGY (0322)
  - HEPATIC ENZYME, GLYOXALASE (3953)•
  - SMALL INTESTINE, CHILDREN, SURGERY (4229)
  - SMALL INTESTINE, RADIOLOGY (4227)
  - STOMACH (3359)
- LYSIN
  - LYSOGENIC FACTOR, SECRETION, COLON, RABBIT (0170)
- LYSOSOME
  - ANTIGEN STORAGE, ANTIBODY FORMATION, LIVER, SPLEEN (0148)
  - DAMAGE, MHV-3 HEPATITIS (4482)
  - FRACTION, ACID PHOSPHATASE, LIVER, RAT (2278)•
  - HEMOGLOBIN BREAKDOWN, RAT (3115)
  - LABILIZER, CAPSAICIN SKIN, LIVER, EPIDERMIS, MAN (2444)
  - LIVER, ADRENALECTOMY, RAT (7818)
  - LIVER, ENZYMES (0725)•
  - LIVER, ENZYMES, STILBAMIDINES (7132)•
  - LIVER, FASTING, REGRESSION (8620)•
  - LIVER, LIPASE, ENZYME (1788)
  - LIVER, NUCLEIC ACID, TUMOR (1712)•
  - LIVER, NUCLEOSIDE DIPHOSPHATASE, RAT (1603)
  - LIVER, PERMEABILITY, CARBOHYDRATES (1622)
  - LIVER, RAT, PHOSPHATASE, SULFONAMIDE, SULFAPYRIDINE (2413)•
  - MEMBRANE, ALTERATION, MHV-3 HEPATITIS (4484)
  - PERIBILIARY DENSE BODIES, DEVELOPMENT, EMBROYONIC RAT (3074)

- MACROGLOBULINEMIA
  - CIRRHOSIS, PORTAL HYPERTENSION, THROMBOCYTOPENIA, FIBRINOLYSIS, COAGULATION (0641)
- MAGNESIUM
  - ABSORPTION, SMALL INTESTINE, CALCIUM (1631)•
  - DIVALENT CATIONS, DRUG METABOLISM, MICROSOMES, LIVER, RAT (3072)
  - DRUG METABOLISM, MICROSOME, ACTIVATION (6420)•
  - LIVER, TRANSPORT, RAT, SODIUM, POTASSIUM (2343)•
  - PERISTALSIS, BLOCKADE (1653)
  - SERUM, LEVEL, CIRRHOSIS, CHILDREN (2891)•

THERAPY, OROFACIAL LESIONS, PROTEIN-CALORIE MALNUTRITION (2222)
ALABSORPTION
ACQUIRED, SMALL INTESTINE, INTESTINAL RESECTION, INTESTINAL OBSTRUCTION (1159)
ALCOHOLISM, CHRONIC, NON-CIRRHOTIC (2368)*
BICARBONATE EXCRETION, PARATHORMONE, ACIDOSIS, VITAMIN D (7430)*
CA, VITAMIN, HYPERPARATHYROIDISM, PANCREATITIS (4351)
CALCIUM, HYPOCALCEMIA, HEMOCHROMATOSIS, HYPOPARATHYROIDISM (2803)*
CARBOHYDRATE, RESPIRATORY, HYDROGEN EXCRETION (5648)*
CELIAC DISEASE (4256)
CELIAC DISEASE, SMALL INTESTINE, MUCOSA, PEPTIDASE HYDRALASE (3441)*
CELIAC DISEASE, STENOSIS, ISCHEMIA, ARTERIOGRAPHY, ATHEROMA, ADENOPATHY, PANCREAS (5348)
CELIAC SYNDROME, INTESTINAL LYMPHOMA (7447)
CHOLECYSTOCOLONIC FISTULA (8412)
CHOLECYSTOCOLONIC FISTULA, CHOLECYSTECTOMY (7451)
CHRONIC ENTEROPATHY, CELIAC DISEASE, ENZYME, IMMUNOLOGIC RESPONSE, CHILDREN (3442)*
CIRRHOSIS, CALCIUM, VITAMIN K (5081)
CONGENITAL, FOLIC ACID (6681)*
COW MILK INTOLERANCE, CHILDREN (8939)
CYTOSTATIC DRUG, INTESTINE, MUCOSA (3732)
DIAGNOSIS, ABSORPTION TESTS, ETIOLOGY (8052)
DIARRHEA, COLON SYNDROME (4302)
DIARRHEA, MALABSORPTION (3757)
DIFFUSE, CEROID DEPOSITION, SMALL INTESTINE, REGIONAL ENTERITIS, VITAMIN E (0400)
DISACCHARIDE INTOLERANCE (6690)
DIVERTICULOSIS, JEJUNUM (3457)
DRUG INDUCED, CHOLESTYRAMINE, ANEMIA (8179)
DRUG INDUCED, NEOMYCIN, METABOLIC DISORDERS (8697)
DUMPING SYNDROME, ADDUCENT LOOP SYNDROME, ULCER, POSTGASTRECTOMY (0042)*
ENZYME DEFECT, CARBOHYDRATE (3458)
EOSINOPHILIC GASTROENTERITIS (7707)
EXOCRINE PANCREATIC INSUFFICIENCY, GLUTENENTEROPATHY (7450)
FAT, GLUCOSE, HYPERTONIC MANNITOL (8168)*
FOLIC ACID, POLYGLUTAMATES, SMALL INTESTINE (8938)
GASTRECTOMY (2623)
GASTRECTOMY-INDUCED, GASTRIC EMPTYING DOG (1151)*
GASTROINTESTINAL TRACT, HYPOSPLENISM, CELIAC DISEASE (1966)
GIARDIASIS, CHILDREN, SYMPTOMS (6263)
GIARDIASIS, KERALA (1554)
GLUCOSE, ERYTHROCYTE, MEMBRANE TRANSPORT (5084)
GLUCOSE, GALACTOSE, CONGENITAL (4258)
GLUCOSE, GALACTOSE, DIAGNOSIS (4253)
GLUCOSE, GALACTOSE, FRUCTOSE, CHILDREN (2686)*
GLUCOSE, GALACTOSE, HEREDITARY METABOLIC DISORDERS, DIAGNOSIS (8754)
HISTOPATHOLOGY, MUCOSA POUCHES, JEJUNUM (7853)*
IMMUNOGLOBULINS, SPRUE, NON-TROPICAL, SMALL INTESTINE (1962)*
INFANT, CARBOHYDRATE, GLUTEN (0771)
INFANTILE MALNUTRITION, JEJUNUM, MUCOSA, DISACCHARIDASE (2688)*
INTESTINAL (6689)
INTESTINAL, CALCIUM, VITAMIN B12 (8174)
INTESTINAL, CAROTENE-BETA, LIPIDS, PANCREATITIS, CLEIAL DISEASE, ILEOCOLIC SHUNT, REGIONAL ENTERITIS, GASTRIC RESECTION, DIAGNOSIS (3276)
INTESTINAL, CHRONIC PANCREATITIS, CROHN'S DISEASE (6688)
INTESTINAL, GLUTENENTEROPATHY, PANCREAS (8169)
INTESTINAL TUBERCULOSIS, VILLOUS ATROPHY (5891)
INTESTINE, ALPHA-TOCOPHEROL, ABSORPTION (3438)*
INTESTINE, CALCIUM LOSS, HYPOCALCEMIA (8172)
INTESTINE, CROHN'S DISEASE, SURGERY (1208)*
INTESTINE, DERMATOGENIC ENTEROPATHY (7439)*
INTESTINE, ENTERITIS (5076)
INTESTINE, ISCHEMIA, SURGERY (5086)
INTESTINE, LACTOSE (2694)
INTESTINE, PSORIASIS, ROSACEA (5088)
IRON, HEMOCHROMATOSIS, PHLEBOTOMY THERAPY (5982)*
IRON SORBITOL INJECTION (6692)
JEJUNAL MUCOSA, SUCTION BIOPSY, PROTEINS (6346)
JEJUNUM, DIVERTICULOSIS, OSTEOMALACIA, RICKETTS (5078)
JEJUNUM, PARASITE (5089)
LABORATORY DIAGNOSIS, SMALL INTESTINE (6552)
LACTASE, GENETIC (8175)
LACTASE ADMININSTRATION, LACTOSE ABSORPTION, SMALL INTESTINE (8932)
LACTOSE, CONGENITAL, DUODENUM (6691)
LACTOSE, CROHN'S DISEASE, SYMPTOMS (5886)*
LACTOSE, DISACCHARIDASES, PEPTIC ULCER (1113)*
LACTOSE, JEJUNAL LACTOSE DEFICIENCY, ESKIMOS (0403)*
LACTOSE, MILK INTOLERANCE, HOSPITAL PATIENTS, SERVICEMEN, FINLAND (2693)
LACTOSE, MILK TREATMENT, ZYMIL (5897)
LACTOSE, PEPTIC ULCER SURGERY, INTESTINAL LACTASE, TOLERANCE TESTS, STEATORRHEA (1113)*
LACTOSE, SMALL INTESTINE, (3455)
LACTOSE, STOMACH, SURGERY (1964)
LACTOSE, ULCERATIVE COLITIS, CROHN'S DISEASE (7441)*

LACTOSE INTOLERANCE, ADULT, JEJUNAL MUCOSA (5896)
LACTOSE INTOLERANCE, MILKING, CULTURE (7446)
LACTOSE INTOLERANCE, ULCERATIVE COLITIS, INCIDENCE IN EUROPE (8934)
LIPID, JEJUNUM, BILE-SALTS (0409)*
LIPID, TREATMENT, TRIGLYCERIDE (3450)
LIVER, CIRRHOSIS, FOLIC ACID, PTEROYL-GLUTAMIC ACID (5074)
LOW LACTOSE, MILK, ZYMIL (6202)
MALIGNANCIES (4257)
MONOSACCHARIDE, INTESTINAL FLORA, BILE-SALT CONJUGATION, INFANTS (0418)
NEOMYCIN-INDUCED, SMALL INTESTINE, MAN (2685)*
NEONATAL GASTROENTERITIS, NURSLING GASTROENTERITIS, LOW LACTOSE MILK, REALIMENTATION (6160)
PANCREATITIS, OSTEOMALACIA, BLIND LOOP SYNDROME (5159)
PROTEIN, GASTROENTERITIS (3890)*
PROTEIN, MALNUTRITION, SMALL INTESTINE (5377)
RESECTION, SMALL INTESTINE ILEOTRANSVERSOSTOMY (0423)
RETICULUM CELL SARCOMA, STEATORRHEA (1967)
RIBOFLAVIN THERAPY, BURNING FEED SYNDROME (5899)
SELECTIVE, VITAMIN B12, IMERSLUND-NAJMAN-GRASBECK ANEMIA (0419)
SKIN DISORDERS, SCHILLING TEST, INTESTINAL INTRINSIC FACTOR (8935)
SMALL BOWEL BY-PASS, OBESITY, DIET (8178)
SMALL INTESTINE, A-B-LIPOPROTEINEMIA, COELIAC DISEASE, A-ALPHA-GLOBULINEMIA (6686)*
SMALL INTESTINE, CELIAC DISEASE, GLUTEN SENSITIVITY (1961)*
SMALL INTESTINE, DAPSONE, DERMATITIS HERPETIFORMIS (7678)*
SMALL INTESTINE, DIET, GEFARNATE, INFANTS (7443)
SMALL INTESTINE, FECES, BACTERIA (6184)
SMALL INTESTINE, GIARDIASIS (6280)
SMALL INTESTINE, PAROMOMYCIN-INDUCED, MAN (2689)*
SMALL INTESTINE, PARTIAL GASTRECTOMY, D-XYLOSE, FAT (5073)*
SMALL INTESTINE, PEPTIC ULCER (5888)
SMALL INTESTINE, SCLERODERMA, INFILTRATIVE DISEASES (7488)
SMALL INTESTINE, STEATORRHEA, LIPID (4252)
SMALL INTESTINE, STRONGYLOIDES (5082)
SMALL INTESTINE, TETANY, GAMMA GLOBULIN (5077)
SMALL INTESTINE, VITAMIN DEFICIENCY (0411)*
SMALL INTESTINE, VILLOUS ATROPHY, ENTEROCYTE (6683)*
SPRUE, DIAGNOSIS, INTESTINAL MUCOSA (4254)
SPRUE, PREGNANCY, GASTRECTOMY (7449)
SPRUE, SMALL INTESTINAL MORPHOLOGY, JEJUNUM, HAITI (5890)
SPRUE, SMALL INTESTINE, GRANULOMA, JEJUNAL BIOPSY (5052)
STEATORRHEA, CELIAC DISEASE, JEJUNUM, MUCOSA (5085)
STEATORRHEA, BONE COMPLICATION (0410)
STEATORRHEA, DIABETES MELLITUS (0468)
STEATOSIS, HEPATIC, DIET-INDUCED, RAT (0415)
SURGERY, STOMACH, MUCOSA (2604)
SYNDROME, CLINICAL SYMPTOMS TREATMENT (0422)
SYNDROME, DIARRHEA, STEATORRHEA, IMMUNOGLOBULIN DEFICIENCY, ADULT (0404)*
SYNDROME, INTESTINAL PEPTIDASES, CHILDREN (1214)*
SYNDROME, MICROBIAL INFESTATION, PARASITIC INFESTATION, ACHYLIA, JEJUNUM (3786)
SYNDROME, PROTEIN-LOSS, ENTEROPATHY (0420)
SYNDROME, SERUM-IMMUNOGLOBULINS, ADULT (0407)*
SYNDROME, SMALL INTESTINE (7442)
TREHALOSE, MUSHROOM INTOLERANCE, SYMPTOMATOLOGY (8930)
TRIGLYCERIDES, MEDIUM CHAIN, LIPID (5895)
TROPICAL SPRUE, CHILDREN, PUERTO RICO (2687)*
TROPICAL SPRUE, DEFINITION, DIARRHEA (5894)
TROPICAL SPRUE, NIGERIA (5889)
TROPICAL SPRUE, PANCREATITIS, NITROGEN UTILIZATION (2784)*
VITAMIN B12, ABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
VITAMIN B12, ETHANOL-INDUCED (0406)*
VITAMIN B12, POTASSIUM CHLORIDE THERAPY (7444)
VITAMIN D DEFICIENCY, BONE, HISTOLOGY (5892)
WHIPPLE'S DISEASE, INTESTINAL PATHOLOGY, CORYNEBACTERIA, LYMPHANGIECTASIA, FROTHY HISTIOCYTES, PLASMODIA, ELECTRON MICROSCOPY (5887)*
WHIPPLE'S DISEASE, SMALL INTESTINE, MUCOSA (5087)

MALAKOPLAKIA
  APPENDIX, BACTERIA (2232)

MALARIA
  ACUTE, LIVER BIOPSY, LIGHT AND ELECTRON MICROSCOPE (1400)
  FALCIPARUM, SERUM PROTEIN FRACTIONS, LIVER FUNCTION TEST (0223)
  LIVER, LYMPHOCYTOSIS (4660)*
  NA AND K CONCENTRATIONS, EFFECT, MONKEY (2273)*

MALFORMATION
  ANNULAR PANCREAS, INTESTINAL OCCLUSION SURGERY (9006)
  ATRESIA, ANAL, RECTAL (7452)*
  BILE DUCTS, CONGENITAL ATRESIA, LIVER HISTOPATHOLOGY (9195)
  CONGENITAL, DOUBLE GALLBLADDER, LITHIASIS, SURGERY (9174)

- CONGENITAL, MEGACOLON, SURGERY, HIRSCHSPRUNG'S DISEASE (8950)
- CONGENITAL, SIGMOIDO-RECTAL URETHRA, SURGERY, CHILDREN (8942)
- CONGENITAL INTESTINAL MALROTATION, ARTERIOMESENTERIAL INTESTINAL OCCLUSION, DUODENAL STENOSIS, CHILDREN (9254)
- DIGESTIVE TRACT, HYPERBILIRUBINEMIA (4612)
- DYSPLASIA, ABDOMINAL MUSCLES, GASTROINTESTINAL TRACT (1513)
- GASTRIC DIVERTICULUM, CHOLECYSTECTOMY, RADIOLOGY (8871)
- GASTROINTESTINAL TRACT, THALIDOMIDE, RABBIT EMBRYO (8481)
- GASTROSCHISIS, OMPHALOCELE, EMBRIONIC DEVELOPMENT (8846)

MALNUTRITION
- ACID-BASE BALANCE, RENAL REGULATION (4605)
- BONE MARROW, LIVER, CHILDREN (1391)
- CHILDREN, CARBOHYDRATE, METABOLISM, JAMAICA (2213)
- DIARRHEA, PARASITES, INFANTS, KABUL (2999)
- DIET, INFECTION, UNITED STATES (02981)
- INFECTIOUS DISEASES, SURVIVAL, PREVENTION, CHILDREN (2233)
- MARASMUS, PANCREATIC EXOCRINE FUNCTION INFANTS (8426)
- MUSCLE, ADIPOSE, INFANT (6227)
- PROTEIN, BIAFRAN CHILDREN (4642)
- PROTEIN, CALORIE, KWASHIORKOR (7681)*
- PROTEIN, HEMATOLOGY, METABOLISM (4623)
- PROTEIN, LIVER, LIPID, METABOLISM (4569)*
- PROTEIN, PATHOLOGY, BIAFRAN CHILDREN (4643)
- PROTEIN-CALORIE, OROFACIAL LESIONS, MAGNESIUM THERAPY (2222)
- TRYTOPHAN, METABOLISM, PROTEIN (4567)*

MANOMETRY
- BILIARY, DIAGNOSTIC VALUE (2507)
- BILIARY TRACT, TELECHOLANGIOSCOPY, SURGERY (0937)*
- LIVER, RESPIRATION, PORTAL LIGATION (1721)*

MARASMUS
- FAT BALANCE, ABSORPTION, JEJUNUM, CHILDREN (6224)
- NUTRITIONAL, ETIOLOGY, TREATMENT (6179)
- SERUM ENZYMES, TRANSAMINASES, LACTIC DEHYDROGENASE, PSEUDO-CHOLINESTERASE KWASHIORKOR, MARRAMIC KWASHIORKOR (6966)

MAST CELL
- DUODENUM, JEJUNUM, CROSBY BIOPSY, MEGALOBLASTIC ANEMIA (3433)

MECKEL'S DIVERTICULUM
- SURGERY, CROHN'S DISEASE, PERITONITIS (1943)

MECONIUM
- FECES, UMBILICAL CORD, STEROID (2497)
- ILEUS, CYSTIC FIBROSIS, ROENTGEN DIAGNOSIS (3417)*
- ILEUS, TREATMENT, CONTRAST ENEMA (1926)*

- SMALL INTESTINE, STEROIDS (0723)*

MEDIASTINAL DIGESTIVE CYST
- DUPLICATION, INFANTS, NURSING (0694)

MEGACOLON
- ACQUIRED, TREATMENT, MODIFIED DUHAMEL (0425)*
- AGANGLIAR, SURGICAL TREATMENT, NON-SUTURE TECHNIQUE (0437)
- APPENDICEAL PERITONITIS, NEONATE (4282)
- CHAGAS DISEASE, CHRONIC, MANOMETRIC STUDY, ESOPHAGUS (0987)
- COLITIS, CHRONIC ULCERATIVE (1297)
- CONGENITAL, AGANGLIONIC, HIRSCHSPRUNG DISEASE, COLOSTOMY (8961)
- CONGENITAL, ANORECTAL MYOMECTOMY, CHILDREN (1257)
- CONGENITAL, ATRESIA, DIVERTICULUM (3480)
- CONGENITAL, HIRSCHSPRUNG'S DISEASE, COMPLICATION (2752)
- CONGENITAL, HIRSCHPRUNG'S DISEASE, DWARFISM, FAMILIAL (0476)
- SURGERY, INFANT (8954)
- CONGENITAL, SURGERY, INTESTINE OBSTRUCTION (1249)
- DILATATION, MUSCLE HYPERTROPHY, PARKINSON'S DISEASE, MULTIPLE SCLEROSIS (6723)
- ELECTRIC ACTIVITY (4280)
- HIRSCHPRUNG'S DISEASE, SWANSON-HIATT OPERATION, POSTOPERATIVE COMPLICATIONS (0460)
- STENOSIS, ASCENDING COLON, MEGAILEUM (3479)
- TOXIC, ULCERATIVE COLITIS, PSYCHOSOMATIC ETIOLOGY, PHYSIOPATHOLOGY (8998)

MEGADOLICHOCOLON
- ELECTROMANOMERIC STUDIES, DIHYDROERGOTAMINE METHANE SULFONATE (0047)

MEGADUODENUM
- MUSCLE, DEGENERATION, FAMILIAL OCCURRENCE (2585)
- SUPERIOR MESENTERIC ARTERY SYNDROME, CAST SYNDROME, RADIOGRAPHY (1889)

MEGAENTERON
- COLON, JEJUNUM, BACTERIA (4565)*
- COLON, JEJUNUM, COLIFORM (4566)*

MEGA-ESOPHAGUS
- IDIOPATHIC, SURGERY (1010)
- IDIOPATHIC, SURGERY, TREATMENT (0251)
- LUNG, MYCOBACTERIA (0999)
- SURGERY, THAL-PROCEDURE (0994)
- TREATMENT, PNEUMATIC DILATATION OF CARDIA (3319)

MEGAILEUM
- STENOSIS, ASCENDING COLON, MEGACOLON (3479)

MEGASIGMOID
- COLON, GIGANTIC (0459)

MELANOBLASTOMA
- ANORECTUM, HEMORRHOIDS, MALPIGHIAN MUCOSA (6724)

MELANOMA
- GALLBLADDER, BILIARY DUCT (1501)
- GALLBLADDER, CHOLECYSTECTOMY, METASTASES (6920)
- MALIGNANT, ANUS, SURGERY (1994)

  - MALIGNANT, STOMACH, SMALL INTESTINE, LUNG (0334)
  - PRIMARY, MALIGNANT, ESOPHAGUS (6579)*
  - PROTEIN DEFICIENCY, GASTROINTESTINAL PARTICIPATION, METASTASES (6976)
  - ULCER, SMALL INTESTINE, INVAGINATION, METASTASES (2662)
- MELANOSIS
  - ESOPHAGUS, PRIMARY, MALIGNANT (6579)*
  - ILEUM, ELECTRON MICROSCOPY (1933)
  - RECTO-COLON (0286)
- MEMBRANE
  - CELLULAR, CHITINASE, MUCOSA, LACERTA VIRIDIS (6401)
  - ENZYMES, PLASMA, MICROSOMES, HEPATOMA (7802)
  - JUNCTION, LIVER, ELECTRON MICROSCOPY (7797)*
  - NUCLEAR, LIVER, LIPID COMPOSITION (7778)*
  - NUCLEAR, PERMEABILITY, CIRCADIAN (7976)
  - PERMEABILITY, LIVER CELL, NUCLEI (7975)
  - PLASMA, PHOSPHOLIPID, PROTEIN, SUPERNATANT FRACTION (6292)*
- MENINGITIS
  - LISTERIA, LYSTERIA MONOCYTOGENES ISOLATION, FECES, HEALTHY HUMANS AND CATTLE (1797)
- MENTRIER'S DISEASE
  - GASTRITIS, BILE REFLUX (3366)
- MERCAPTOPURINE
  - 6-MERCAPTOPURINE, LIVER, CHOLESTASIS (2186)
- MESENCHYME
  - TUMOR (3734)
  - TUMOR, STOMACH, DIAGNOSIS (3373)
- MESENCHYMOMA
  - BENIGN (3734)
- MESENTERITIS
  - RADIOLOGY, DIAGNOSIS, SMALL INTESTINE (1515)
- MESENTERY
  - ACUTE INFARCT, SUPERIOR MESENTERIC ARTERY OCCLUSION, SYMPATHECTOMY (8445)
  - ADENITIS, INTUSSUSCEPTION, CHILDHOOD (4597)
  - APT, DIAGNOSIS, SURGERY (6209)
  - ARTERIES, SMALL, GEOMETRY, MECHANICAL PROPERTIES (3064)
  - ARTERY, NERVOUS CONTROL, PERFUSION STUDY (0930)
  - BLOOD FLOW, DRUG ABSORPTION, INTESTINE (5501)
  - CAPILLARY BED, GRADIENT VASCULAR PERMEABILITY (3251)
  - CHILDS-PHILLIPS OPERATION, POSTOPERATIVE ADHESIONS (2212)
  - CIRCULATION, ARGENTAFFIN CARCINOMA, SCLEROSIS (8151)
  - CIRCULATION, STOMACH, ANOMALY (2961)
  - CYST, LYMPHATIC, PSEUDO-APPENDICULAR SYMPTOMS (2218)
  - CYST, TREATMENT, ENUCLEATION (6177)
  - DUODENAL OBSTRUCTION, CHILD (4176)
  - FIBROMA, RECTOPOLYPOSIS (8200)
  - INFARCTION, ISCHEMIA, PANCREATITIS, SHOCK (6978)
  - INFARCTION, OBSTRUCTION (5379)
  - INFARCTION, X-RAY DIAGNOSIS, VASCULAR OCCLUSION (8444)
  - INFLAMMATION, X-RAY DIAGNOSIS, SURGERY (9219)
  - INTERNAL HERNIA THROUGH, MECKEL'S DIVERTICULUM (3423)
  - ISCHEMIC DISEASE, OCCLUSION, COLITIS (6232)
  - LIPODYSTROPHY (8173)
  - LYMPH, IMMUNOGLOBULIN-A, ORIGIN (2484)*
  - LYMPHANGIOMA, MICROCIRCULATION, LYMPHATICO-VENOUS SHUNT (8464)
  - LYMPHATIC, MECHANICAL INSUFFICIENCY, PERIPHERAL OFFER, CAT (2496)
  - MESENTERIC PLEXUS, DISORDERS (6171)
  - MESOCOLON, SIGMOID, HEMATOMA, ETIOLOGY (5105)
  - MICROANGIOGRAPHY, X-RAY SENSITIVE VIDICON (6342)
  - MICROCIRCULATION, HYPERTENSION (3723)
  - PACINIAN CORPUSCLE, BETA RADIATION (4882)
  - PARASITOLOGY, HEPATOSPLENOMEGALY (4621)
  - RETICULOSARCOMA, SMALL INTESTINE (4236)
  - SMALL INTESTINE, MICROCIRCULATION, HEMODYNAMICS (7997)
  - UPPER ABDOMINAL, DEVELOPMENT, MORPHOLOGY, MAN (8516)
  - VASCULAR DISEASE, ISCHEMIA, OCCLUSION, ANATOMY (0703)
  - VASCULAR DISEASE, MESENTERIC ARTERY, NONOCCLUSIVE (1201)
  - VASOMOTOR CHANGES, LOCAL FLUX (4411)
  - VEIN THROMBOSIS, HEMODYNAMICS (7692)
  - VENOGRAPHY (7993)*
  - VESSELS, THROMBOSIS, EMBOLISM (1160)
  - WATER IN RED BLOOD CELLS AND PLASMA (3257)
- METABOLISM
  - AFLATOXIN, LIVER, RNA (7171)
  - ALBUMIN, CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
  - ALBUMIN, CONCEPTS, REVIEW (3980)
  - ALBUMIN, LIVER, CIRRHOSIS (6902)
  - ALCOHOL, ACETALDEHYDE, ACETONE, LIVER SLICES (6061)*
  - ALCOHOL, CHRONIC ALCOHOLISM, LIVER STEATOSIS (9154)
  - ALPHA-AMYLASE, PANCREAS, URINE LEVELS (8600)
  - ALTERATION, CITRATE ADMINSTRATION, RAT LIVER (1757)
  - AMINO ACID, FRUCTOSEMIA (4364)*
  - AMINO ACID, LIVER, DISORDERS (9262)*
  - AMINO ACID, LIVER, PROTHROMBIN (2418)*
  - AMINO ACID, TOXICITY, HYPOGLYCIN (5249)
  - AMINOACYL-TRNA SYNTHESIS, CHOLESTERYL ESTERS (7154)*
  - AMMONIA, GASTROINTESTINAL TRACT, TRANSPORT (5634)
  - ANOXIA, SMALL INTESTINE, SUGAR (3237)

ANTIMETABOLITES, HEPATIC ARTERY, PERFUSION (6852)
AROMATIC AMINES, DEMETHYLATION, PHENOBARBITAL, LIVER (7947)
ASCITES, TUMOR, CARBOHYDRATE (2450)
BARBITURATE, LIVER, MICROSOMAL HYDROXYLASE, INDUCTION, SLEEPING TIME (4744)
BILE, CARDIOGLYCOSIDE, ABSORPTION (4779)•
BILE ACID, DISORDER (4386)
BILE ACID BIOSYNTHESIS, REGULATION (7133)•
BILE ACID SYNTHESIS, LIVER, CHRONIC BILIARY DAMAGE (7153)•
BILE PIGMENTS (7174)
BILE SALTS, INTESTINAL LIPID ABSORPTION, BLIND LOOP SYNDROME (8562)
BILIRUBIN, BILIVERDIN, NEONATE, BLUE LIGHT (6801)
BILIRUBIN, TRANSFER, INTRAHEPATIC CONJUGATION, GLUCURONIDE TRANSFERASE (7956)
IOCHEMICAL LESION, ALCOHOLISM (6851)
IOLOGICAL POTENCY, 3-DEHYDRORETINOIC ACID (7210)
CARBOHYDRATE, DISORDER, LIVER, CHOLELITHIASIS (4531)
CARBOHYDRATE, GASTRIC RESECTION, INTESTINE (3383)
CARBOHYDRATE, GLYCEROL, GLYCERIDE (5935)
CARBOHYDRATE, HEPATIC ENZYMES, GLYCOGENESIS, GLYCOGENOLYSIS, PARTIAL HEPATECTOMY, ALCOHOL, RAT (5999)
ARBOHYDRATE, HEXOSES, MALABSORPTION, CHILDREN (2603)
ARBOHYDRATE, LIPID, OXOTREMORINE, CARBACHOL, METHACHOLINE, GLUCOSE, LACTIC ACID, ARTERIAL BLOOD (5628)•
ARBOHYDRATE, LIVER, INCUBATION, SERUM, UREMIA (0888)
ARBOHYDRATE, LIVER, NICOTINAMIDE (6421)•
ARBOHYDRATE, LIVER, PATHOLOGY (5180)
ARBOHYDRATE, MALNUTRITION, CHILDREN, JAMAICA (2213)
ARBOHYDRATE, UREA LEVEL, ACIDOSIS, LIVER, PERFUSION STUDY (3976)
ARBON TETRACHLORIDE INTOXICATION, LIVER, THIOCTANIC ACID, MICE, HISTOLOGY (2860)
ARNITINE, PALMITIC ACID, ESTER, LIVER, MITOCHONDRIA, RAT (5582)•
ATABOLISM, PENTOBARBITAL, LIVER TRAUMA (6081)
ATIONIC, DISORDERS, PANCREATITIS (3536)
CL4, DRUG, FASCIOLA HEPATICA (8491)
ERULOPLASMIN, COPPER, LIVER (0156)
HOLESTEROL, ABSORPTION (5682), (8565)
HOLESTEROL, BILE, CHOLIC ACID (8610)•
HOLESTEROL, BILE ACID (5636)
HOLESTEROL, LECITHIN-CHOLESTEROL ACYLTRANSFERASE, LIVER DAMAGE (8318)•
HOLESTEROL, LIVER, CARBOCHOLINE, ADRENALINE, RAT (5595)
HOLESTEROL, LIVER, HEPATECTOMY, RAT (7948)
CHOLESTEROL, LIVER, PHENOBARBITAL (7932)
CHOLESTEROL, LIVER, RAT (4856)
CHOLESTEROL, SMALL INTESTINE (0358)•
CHOLESTEROL BIOSYNTHESIS, CONTROL MECHANISMS (7188)
CHOLESTEROL BIOSYNTHESIS, NEOMYCIN, LIVER, MAN (7887)•
CHOLESTEROL ESTERIFICATION, SERUM, HEPATECTOMY (6502)•
CHOLESTEROL SYNTHESIS, LIVER, CELL MEMBRANE, AUTORADIOGRAPHY, ENDOPLASM, RAT (4707)
CHROMATOGRAPHY, LIVER (2441)
COLLAGEN, LIVER, FIBROSIS, REVERSIBILITY, RAT (5222)•
COPPER, WILSON•S DISEASE, GENETICS (6811)
COPPER, WILSON•S DISEASE, PENICILLIN G (7564)
CORTICOSTEROID, LIVER GLYCOGEN, FETUS, NEWBORN (2429)
DEXAMETHASONE, DIPHENYLHYDANTOIN (7162)
DIMETHYLATION, HYDROXYLATION, N-OXIDATION, IMIPRAMINE (7118)•
DISORDERS, DIABETIC, CHOLELITHIASIS (6923)
DMSO, HEPATIC METABOLIZING ENZYMES, MICROSOMAL ENZYMES (5581)•
DRUG, COUMARIN-INDUCED ENZYME (3827)
DRUG, HEPATIC ENZYMES, HEPATIC LIPID, FATTY LIVER, ETHIONINE, CYTOCHROMES (6056)•
DRUG, INTESTINAL ABSORPTION, IN VIVO METHODS, IN VITRO METHODS (2473)•
DRUG, INTESTINE, GLUCURONIDE CONJUGATION (2355)
DRUG, ISOLATED PERFUSED LIVER, IN VIVO, RAT (2456)
DRUG, LIVER, ADVERSE REACTIONS (3966)
DRUG, LIVER, DIETARY THIAMINE, LINOLEATE (0895)
DRUG, LIVER, GAMMA-IRRADIATION, MOUSE (7003)
DRUG, LIVER, IN VITRO, ZINC DEFICIENCY (5583)•
DRUG, LIVER, PHENOBARBITAL, MALARIA (6270)
DRUG, REDUCTASES, METYRAPONE, LIVER MICROSOME (4839)•
DRUG, RETICULOENDOTHELIAL SYSTEM, HORMONE (6472)
ELECTROLYTE, STOMACH, SURGERY (5807)
ENZYME, LIVER, CHICK (6228)
ENZYME, LIVER, RAT (0894)
ESTRADIOL, BILIARY OBSTRUCTION, STEROID (6130)
ETHANOL, LIVER, BLOOD (8660)
ETHANOL, LIVER, RAT (2417)•, (6439)•
ETHANOL, LIVER MICROSOME, RAT (7888)•
FAT, CHOLINE, METHIONINE, DIET (5558)•
FATTY ACID BIOSYNTHESIS, LIVER, RAT (8609)•
FATTY ACIDS, ALCOHOL, LIVER, RAT (8633)•
FATTY ACIDS, COENZYMES, GUINEA PIG LIVER (8608)•
FLUORIDE, LIVER, GLYCOLYSIS, CITRIC ACID CYCLE (7914)•

FOLIC ACID, LIVER DISEASE, HISTIDINE DERIVATIVES (6773)•
FOREARM, AMMONIA, HEPATIC DISEASES, MAN (1451)
GASTRIC, ALTERATIONS, XYLAMIDE (4149)
GLUCONEOGENESIS, ALCOHOLIC INTOXICATION, LIPID METABOLISM, KREBS CYCLE, PROTEIN METABOLISM, RAT (6082)
GLUCONEOGENESIS, LIVER, METABOLISM, ETHANOL (6075)
GLUCONEOGENESIS, PYRUVATE, PERFUSED RAT LIVER (7966)
GLUCOSE, ALCOHOL, POSTGASTRECTOMY PATIENT (2629)
GLUCOSE, HEPATECTOMY, FATTY ACID (7148)•
GLUCOSE, HEPATITIS, FATIGUE, HEMOCONCENTRATION (6872)
GLUCOSE, LIVER, TOLBUTAMIDE TEST (4916)
GLUCURONIDE, LIVER, ULCERATIVE COLITIS, TRANSAMINASE, GLUCURONYLTRANSFERASE, OIB TEST (5122)
GLUTAMINE, PH EFFECT, METHIONINE SULFOXIMINE (8616)•
GLUTATHIONE CONJUGATE OF 2-HYDROXYOESTRADIOL, LIVER, KIDNEY, RAT (3209)
GLYCOCHOLIC ACID, JEJUNUM, GASTRECTOMY (6608)•
GLYCOGEN, LIVER, RADIOACTIVITY, GLUCOSE INCORPORATION (4861)
GLYCOGEN SYNTHESIS, INHIBITION, LIVER (6470)
GLYCOGEN SYNTHESIS, LIVER, BIOTIN DEFICIENCY, RAT (4836)•
GLYCOGENOSIS, LIVER, MUSCLE, PHOSPHORYLASE KINASE (7572)
GLYCOLYSIS, ENZYME REGULATION, LIVER, CARCINOGENIC COMPOUNDS, RAT (6079)
GLYCOLYSIS, HEPATIC, CARBOHYDRATE-FREE DIET, GLUCONEOGENESIS (5598)
GLYCOLYSIS REGULATION, LIVER, MICROSOMAL GLUCOKINASE, ATP INHIBITION, AMP, SYNTHESIS, RAT (5428)•
GLYCOREGULATION, GASTRECTOMY (8101)
HARTNUP DISEASE, INTESTINAL ABSORPTION, AMINO ACID, CARNOSINE (5475)•
HEMOCHROMATOSIS, LIVER, ETIOLOGY, ANATOMO-PATHOLOGY, IRON DEPOTS, HEMOSIDERIN, PANCREAS, HEPATOMEGALY, DIABETES, MELAMODERMATOSIS, ENDOCRINES (6045)
HEPATIC, ETHANOL, DINITROPHENOL (3962)
HEPATIC, PORPHYRIA, PORPHYRIN, FECES, URINE (6025)
HEPATIC CIRRHOSIS, SODIUM, POTASSIUM, WATER, ACID-BASE EQUILIBRIUM (2899)
HEPATIC NODULE, N-2-FLUORENYLACETAMIDE (7536)•
HEPATIC PROTEIN CATABOLISM, ALBUMIN ALTERATION (7122)•
HEPATITIS, BILIRUBIN (4490)
HEPATOCYTE, FATTY ACID, LOW PRESSURE (3045)
HEPATOCYTE, POISON, MITOCHONDRIA (4154)
HEXOBARBITAL, HEPTACHLOR, ANILINE, LIVER, CORN OIL DIET (3192)
HUNTER'S DISEASE, MUCOPOLYSACCHARIDES, GLYCURONIC ACID, BUHOT CELLS, ELECTRON MICROSCOPY, ADLER GRANULATION (6051)
HYDROXYUREA, LIVER, MOUSE, UREA (7945)
HYPERTENSIVE LIVER, 4-3-KETASTEROID REDUCTION (6430)•
IMIPRAMINE, DESMETHYLIMIPRAMINE, BILIARY EXCRETION (7944)
INBORN ERROR, GALACTOSEMIA, SIBLINGS (9067)
INBORN ERROR, GALACTOSEMIA, HETERZYGOTE GENE CARRIERS, DIAGNOSIS (8741)
INBORN ERROR, GM1-GANGLIOSIDOSIS TYPE I, LIVER, LYSOSOMAL HYDROLASES (9043)•
INBORN ERROR, HEPATIC FRUCTOSE-1, 6-DIPHOSPHATASE DEFICIENCY (7527)•
INBORN ERROR, THEORETICAL CONSIDERATIONS, NEWBORN INFANTS (9041)
INBORN GALACTOSEMIA, GALACTOSE-1-PHOSPHATE-URIDYL TRANSFERASE, LIVER ANOMALIES, DIGESTIVE DISORDERS (9091)
INHIBITOR, MEMBRANE POTENTIAL, GASTRIC MUCOSA (7073)
INHIBITOR, SODIUM FLUORACETATE, SODIUM NITRIDE, ADRENALINE, ISOPRENALINE, PHENYLEPHRINE, RAT INTESTINE (5527)
INTERMEDIARY, GLUCOCORTICOID, LIVER, COW (3204)
INTESTINAL TRANSFER, MECHANISMS (3132)
INTESTINE, OIL, MICELLAR PHASES, CHILDREN (4863)•
INTESTINE, RESORPTION, 16-ACETYL GITOXIN, ACETYL GITOXIN-GAMMA (6369)
IRON, GASTROFERRIN, HEMOCHROMATOSIS (5071)•
IRON, HEMOCHROMATOSIS, LIVER, CIRRHOSIS (6000)
IRON, INTESTINAL ABSORPTION (3246)
IRON, IRON CHELATES, AMINO ACID, URINARY EXCRETION, GASTRIC ADSORPTION, TISSUE BINDING (3995)•
IRON, WHOLE BODY COUNTER, ANEMIA (3247)
JEJUNUM, FOLATE METABOLIZING ENZYMES, DIET, FOLATE (5611)•
KUPFFER CELL, LIVER, PHAGOCYTOSIS (6427)•
LABELED NICOTINE, LIVER, IN VITRO (0891)
LIPID, ALCOHOL, INSULIN, CHOLESTEROL, FREE FATTY ACIDS, TRIGLYCERIDES (5227)
LIPID, ALCOHOL EFFECT, LIVER (8669)
LIPID, ALCOHOLISM, LIVER, UNSATURATED FATTY ACIDS, RETROGRESSION, MITOCHONDRIA (5234)
LIPID, CARBOHYDRATE, PROTEIN, IRON, GASTRECTOMY (8100)
LIPID, DIET (4848)
LIPID, FATTY ACID, GASTROINTESTINAL TRACT (4883)
LIPID, FATTY LIVER, LIVER BIOPSY, STEATOSIS, TRIGLYCERIDES (4896)
LIPID, GASTROINTESTINAL TRACT, FATTY ACIDS, ESTERS, RABBIT (4885)

LIPID, HEPATITIS, FAT DIET (3645)
LIPID, LIVER, CIS-FATTY ACIDS, TRANS-FATTY ACIDS (7160)•
LIPID, LIVER, FATTY ACID SYNTHETASE BINDING SITE, ACETYL GROUP, MALONYL GROUP (5459)
LIPID, LIVER, GROWTH HORMONE, HYPOPHYSECTOMY, RAT (4838)•
LIPID, LIVER, HEPATECTOMY (3949)•
LIPID, LIVER, LINALEATE DEFICIENCY, MOUSE (6489)
LIPID, PLASTIC SURGERY, GASTROINTESTINAL TRACT (1156)
LIPOGENESIS, LIVER, GLUCOSE (7139)•
LIPOLYSIS, STOMACH, LIPID ABSORPTION (7065)•
LIVER, AMINO ACID INCORPORATION, POLYRIBOSOMES, ATP, RAT (4712)•
LIVER, AROMATIC HYDROCARBONS, ANTHRACENE, DIHYRODIOL, CARCINOGEN RATS (5571)•
LIVER, CACHEXIA, ASCITES TUMOR (7158)•
LIVER, CARBOHYDRATE, LIPID, NAD+ (7144)•
LIVER, CARBOHYDRATES, PENTOSE PHOSPHATE PATHWAY, HYPOGLYCEMIA, HEPATOCARCINOGENESIS, DAB (4375)
LIVER, CARBON TETRACHLORIDE (3217)
LIVER, CARCINOGENESIS, GLYCOLYSIS (7533)•
LIVER, CARNITINE ESTER (7970)
LIVER, CHOLESTEROL, ASCORBIC ACID (2439)
LIVER, CHOLESTEROL, CHYLOMICRONS, RAT (0010)•
LIVER, CHOLESTEROL, SQUALENE (3223)
LIVER, CODEINE, AMINOPHENAZONE (8614)•
LIVER, CYTOPLASM (3048)
LIVER, DAMAGE, HALOTHANE EFFECT (8344)
LIVER, D-FRUCTOSE (5211)
LIVER, DOLICHOL SYNTHESIS, STEREOCHEMISTRY (6476)
LIVER, DRUGS, METHYLCHOLANTHRENE DERIVATIVES, RAT (7943)
LIVER, ENZYME (2293)
LIVER, ENZYME, ALCOHOL (5444)
LIVER, ENZYME, CORTISOL (3857)
LIVER, ENZYME, DDT (3580)
LIVER, ENZYME, HUMAN (4857)
LIVER, ENZYME, NUCLEOTIDE (2284)•
LIVER, ENZYME, PATHOLOGY (3220)
LIVER, ENZYME, PHOSPHATE (2794)
LIVER, ENZYME SYSTEMS, DISULFIDE BOND, MICROSOMES, INSULIN, RAT (4795)•
LIVER, ERYTHROPOITIN (2862)
LIVER, ESTRADIOL, ESTRONE, CARBON TETRACHLORIDE (6449)•
LIVER, ETHANOL, GLUCAGON (7972)
LIVER, FATTY ACID, EMBRYO (3938)•
LIVER, FIBRINOGEN SYNTHESIS, AMINO ACID, HORMONE, FAST, THROMBIN (6473)
LIVER, FIBRINOGEN SYNTHESIS, RELEASE (6455)
LIVER, 4-DIMETHYLAMINOAZOBENZENE (DAB), BASIC CUPRIC ACETATE, CANCER (2422)
LIVER, 4-PENTENOIC ACID, INHIBITION, GLUCONEOGENESIS, PERFUSION, RAT (5557)•
LIVER, ^{14}C-ADENINE INCORPORATION, IN VIVO, RAT (8534)
LIVER, FRUCTOSE-INDUCED ATP DEFICIENCY, FEMALE RAT (8551)•
LIVER, GLUCONEOGENESIS, FATTY ACID, OXIDATION, PENT-4-ENOIC ACID (6425)•
LIVER, GLUCONEOGENESIS, HORMONAL CONTROL (7951)
LIVER, GLUCOSE TRANSFER, ACCEPTOR LIPID (6307)•
LIVER, GLUTATHIONE (2440)
LIVER, GLYCINE-SERINE, NONKETOTIC HYPERGLYCINEMIA (7529)•
LIVER, GLYCOGEN (2452)
LIVER, GLYCOLYSIS, BIOTIN DEFICIENCY, ENZYME CONTROL (5569)•
LIVER, GLYCOLYSIS, GLUCONEOGENESIS, DIABETES (7964)
LIVER, GLYCOLYTIC ENZYMES, REGULATION (8663)
LIVER, HEPATIC ENZYMES, NADH OXIDATION (4689)•
LIVER, IMIPRAMINE, STRAIN DIFFERENCES (7190)
LIVER, INSTANT DIABETES, MANNHEPTULOSE, HYPERGLYCEMIA (5609)
LIVER, IN VITRO, ENATEONIERS, AMPHETAMINE, BENZPHETAMINE (5985)•
LIVER, LIPID, ATP (3167)•
LIVER, LIPID, GLYCEROL, PHOSPHATIDIC ACID, DIACYLGLYCEROL (5560)•
LIVER, LIPID, PROTEIN DEFICIENCY (4569)•
LIVER, LYNESTRENOL (6460)
LIVER, LYSINE, COMPARTMENTATION (7771)•
LIVER, MICROSOMES, BENZO(A)PYRENE, AGE, SEX, RAT (3971)
LIVER, MICROSOMES, HYDROXYLATION, TESTOSTERONE, THYROIDECTOMY, THROXINE (3954)•
LIVER, MITOCHONDRIA, ENZYME (1713)•
LIVER, MORPHOLOGY, ENZYME (3579)
LIVER, OROTIC ACID SYNTHESIS, BARBITURATES (5593)
LIVER, PERFUSION, ALCOHOL (3211)
LIVER, PERFUSION, ENZYME ACTIVITY (6491)
LIVER, PERFUSION, IRRADIATION, GLUCOSE (6480)
LIVER, PEROXISOME (3044)
LIVER, PEROXISOMES, GLYOXALATE (8617)•
LIVER, PHENOL, ENZYME (2445)
LIVER, PHOSPHATIDYLINOSITOL, RAT (6464)
LIVER, PHOSPHOLIPID, LECITHIN (7107)•
LIVER, PHOSPHOLIPID, PROTEIN (3934)•
LIVER, PHOSPHORUS INCORPORATION, PHOSPHOLIPID FRACTION, MICROSOMAL MEMBRANE (4841)•
LIVER, PROGESTOGEN, RABBIT (6488)
LIVER, PROTEIN, HYDRAZINE (3586)
LIVER, PROTEIN METABOLISM, INSULIN EFFECT, PROTEOLYSIS, LYSINE, RAT (4837)•
LIVER, PROTEIN SYNTHESIS, INDOSPICINE, NUCLEIC ACID (5568)•

LIVER, RADIATION INJURY, RNA, ATP (8338)
LIVER, REDOX POTENTIAL, NADPH (7131)*
LIVER, RESECTION, REGENERATION (5594)
LIVER, RESPONSE, PORTACAVAL SHUNT (7905)*
LIVER, RIBOSOME (2438)
LIVER, RNA, CATHEPSIN (6440)*
LIVER, SN-GLYCEROL-3-PHOSPHATE, MONOACYLGLYCEROPHOSPHATE, PARTICULATE FRACTION, RAT (5588)*
LIVER, SPLEEN, AMINO ACID (4847)
LIVER, STARVATION, CARBOHYDRATE (5635)
LIVER, SULFUR, WILSON'S DISEASE (2040)
LIVER, VITAMIN B12, ABSORPTION, SCAN (5075)*
LIVER, XANTINOL NICOTINATE (7961)
LIVER METASTASES, 5-FLUOROURACIL, PANCREATIC CARCINOMA (6014)
LIVER MITOCHONDRIA, CHOLINE, BETAINE (7896)*
LIVER MITOCHONDRIA, OXIDATION, 2, 4-DINITROPHENOL (7186)
LIVER REGENERATION ENHANCEMENT, CO2 FIXATION, RABBIT (7981)
LYSOLECITHIN, DUODENUM, LIVER (5621)*
MICROSOME, MAGNESIUM ACTIVATION, DRUG METABOLISM (6420)*
MINERALS, INTESTINAL MICROFLORA, RAT (0031)*
MITOCHONDRIA, LIVER, BILIRUBIN (5241)
MUCOPOLYSACCHARIDE, INBORN ERRORS, HURLER'S SYNDROME (6211)
NICOTINE, COTININE, LIVER, MOUSE (4828)*
NITROGEN, ACETYLCHOLINE, NOREPINEPHRINE (3255)
N-METHYLCARBAMATES, LIVER, MAN, RAT (7942)
NUCLEIC ACID, GASTRIC MUCOSA, DOG (7097)
NUTRITIONAL STATE, POSTOPERATIVE, VAGOTOMY, GASTROENTEROSTOMY (2581)*
131 IODINE SULFOBROMOPHTHALEIN, SCINTOGRAPHY, JAUNDICE (0224)
OXIDATION, GLUTATHIONE, THIOL LIVER (5576)*
PANCREAS, PROTEIN HYDROLYSATES, DOG (7104)
PANCREATECTOMY, 2-STAGE PROCEDURE, ACUTE INSULIN DEPRIVATION (9003)*
P/CA, HYPERPARATHYROIDISM, MALABSORPTION, PANCREATITIS (4351)
PEROBIC, LIVER TISSUE CULTURES, CYTOLOGY, MAN (8519)
PEROXIDATION, ALDEHYDE, LIVER (6437)*
PHENYL DERIVATIVE, ORAL CHOLECYSTOGRAPHY, BILE, MAN, DOG, RAT (8677)
PHOSPHATIDYLETHANOLAMINE, ETHANOLAMINE MOUSE (6487)
PHOSPHOENOLPYRUVATE, MITOCHONDRIA, LIVER (5573)*
PHOSPHOLIPIDS, NUCLEI, NUCLEAR MEMBRANES, LIVER, RAT (0011)*
PHOSPHORYLASE, GLYCOGENOSIS (3062)
PHOSPHORYLATION, SUGARS, INTESTINAL MUCOSA, PHOSPHOENOLPYRUVATE (PEP) (5618)*
PLASMA LIPOPROTEIN, FATTY LIVER, MYOINOSITOL (7580)*
PORPHYRIA, ALLYLISOPROPYLACETAMIDE, LIVER, MORPHOLOGY, RAT (6059)*
PORPHYRIA, BARBITURATE EFFECT, HEPATIC ENZYMES (5563)*
PORPHYRIA, BIOSYNTHESIS, EDEMA, GUNTHER'S DISEASE, HEREDITARY, HEPATIC, ABDOMINAL SYNDROME (6021)
PORPHYRIA, KIDNEY BIOPSY, HEPATIC DISEASE, FLUORESCENCE MICROSCOPY (5216)
PORPHYRIN, DISTURBANCE, LIVER, DIAGNOSIS (0565)
PORPHYRIN, LIVER, POISONING (6839)
PORPHYRIN, VIRAL HEPATITIS (4485)
PORTAL VEIN, SMOOTH MUSCLE MITOCHONDRIA (3043)
POSTOPERATIVE ILEUS, ELECTROLYTE, WATER, ACID-BASE (6948)
PROGESTERONE, REGENERATING LIVER (6453)*
PROTEIN, CIRRHOSIS, DIET (5299)
PROTEIN, LIVER (1738)
PROTEIN, LIVER, RADIOISOTOPE INJECTION, RAT (0111)
PROTEIN, LIVER, RNA, DNA (3948)*
PROTEIN, NUCLEIC ACID, ENZYME, LIVER (1710)*
PROTEIN, PANCREATITIS (4345)*
PROTEIN, PEPTIC ULCER, STEROID HORMONE (5849)
PROTEIN THERAPY, MALNUTRITION, HEMATOLOGY (4623)
RATE CONSTANTS, GASTROINTESTINAL TRACT (6374)
RIBOFLAVIN SYNTHESIS, INTESTINE, 7-CHLORO-8-METHYL-FLAVIN (7197)*
RIBOSOMAL RNA SYNTHESIS, HEPATIC MITOCHONDRIA (7147)*
RNA, LIVER, CELL, FASTING, RAT (4702)*
RUBIDIUM, LIVER CELL NUCLEI, RAT (1761)
SEROTONIN, ALDEHYDES, LIVER (3919)
SEROTONIN, CIRRHOSIS, ACUTE VIRAL HEPATITIS (6117)
SH-GROUP ALKYLATION, MITOCHONDRIA, OLIGOMYCIN, ADP (7129)*
SMALL INTESTINE, NUCLEIC ACID SYNTHESIS, PROTEIN SYNTHESIS (7196)*
STEROID, FECES, HUMAN (4875)
STEROID, HUMAN FETAL LIVER, TESTOSTERONE (7132)*
SUBSTRATE AND COFACTOR CONCENTRATIONS, SEASONAL VARIATIONS, RAT LIVER (8668)
TAPEWORM, ENZYME (3784)
THIAMINE, GASTRIC CANCER (5812)
TRANSFER RNA, METHYLATION, REGENERATION (7884)*
TRYPTOPHAN, MALNUTRITION, PROTEIN (4567)*
TYROSINE, HEREDITARY FRUCTOSE INTOLERANCE, ALDOLASE (8313)
ULCER, CALCIUM, HISTAMINE, GASTRIC MUCOSA (2640)
URETHAN, HEPATECTOMY (7885)*
WATER, ELECTROLYTE, CHOLECYSTITIS, SURGERY (8410)

- WILSON'S DISEASE, CIRRHOSIS, COPPER (6002)
- WILSON'S DISEASE, DIAGNOSIS, TREATMENT COPPER (6820)
- WILSON'S DISEASE, LIVER, COPPER, CERULOPLASMIN, CIRRHOSIS, NEUROPATHY, LENTICULAR DEGENERATION (6019)
- WILSON'S DISEASE, X-RAY APPARATUS, LIVER, BRAIN, COPPER DISTRIBUTION (5677)
- ZINC, CIRRHOSIS, ALCOHOLIC (2894)*
- ZINC, GASTRIC AND DUODENAL ULCER (8133)

METACHROMASIA
- CYSTIC FIBROSIS, DIAGNOSTIC LIMITATIONS (0233)

METAL
- CADMIUM, METALLOTHIONEIN, RAT LIVER (8648)
- CALCIUM, INTESTINAL MUCOSA, MITOCHONDRIA (7830)*
- CD+2, MN+2, ZN+2, RNA SYNTHESIS, LIVER (8640)
- CHROMIUM, ENTEROPATHY (8459)
- ENVIRONMENTAL, CADMIUM, ELIMINATION, CARDIOVASCULAR DISEASE (6740)
- IRON ABSORPTION, GASTROINTESTINAL TRACT, COBALT (7832)*
- IRON ABSORPTION, NEOMYCIN, GERMFREE RATS (7829)*
- IRON ABSORPTION, WHOLE-BODY COUNTING (7842)
- IRON-BINDING CAPACITY, PLASMA, ORAL OVERLOADING, NORMAL AND HYPERTHYROID PATIENTS (7847)
- MAGNESIUM, DEFICIENCY, REGIONAL ENTERITIS, ULCERATIVE COLITIS (8921)*

METAMORPHOSIS
- BETA-GLUCURONIDASE, LIVER, TADPOLE (3067)
- CELL, GASTRIC AMYLOIDOSIS (3346)
- FATTY, LIVER, ''KAMAGASAKI'S LIVER'' (0585)

METAPLASIA
- CYLINDRICAL, LOWER ESOPHAGUS, ANATOMOPATHOLOGY (8797)
- INTESTINAL, CARCINOMA, STOMACH, COLUMBIA, MIGRANTS (3344)

METASTASIS
- CANCER, STOMACH (1861)
- HEPATIC, TREATMENT (3563)
- INTRA-ABDOMINAL, MELANOMA, CHOLECYSTECTOMY, 14-YEAR LATENCY (6920)
- LIVER, BLOOD SUPPLY, TUMOR (8263)*
- LIVER, CARCINOMA (3486)
- LIVER, SCANNING (2511)*
- LIVER, SCREENING, ENDOSCOPY (3284)

METHOTREXATE
- CHEMOTHERAPY, CARCINOMA, GASTROINTESTINAL TRACT (2246)
- CIRRHOSIS, PSORIASIS (0639), (0640)

METOCLOPRAMIDE
- MOTILITY, GASTROINTESTINAL TRACT, ALKALI TEST (1659)

MICROBODY
- LIVER, CATALASE (3576)

MICROORGANISM
- AEROBIC, ANAEROBIC, COLON, CIRRHOSIS (6941)*
- INTESTINAL, MINERALS, METABOLISM, RAT (0031)*
- MICROFLORA, ANEROBIC, SPHAEROPHORUS, LARGE INTESTINE, HUMAN FECES (3708)*
- PNEUMATOSIS CYSTOIDES INTESTINALIS, INTESTINE (2248)
- PNEUMATOSIS CYSTOIDES INTESTINALIS, PULMONARY DISEASE, CHRONIC LYMPHOCYTIC LEUKEMIA (1980)
- PNEUMATOSIS CYSTOIDES INTESTINALIS, SMALL INTESTINE, SCLERODERMA (1949)
- PREVALENCE, DIARRHEAL DISEASES, CHILDREN (2220)
- SMALL INTESTINE, SURGERY, BIOCHEMISTRY (2191)*
- STOMACH, DEAMINATION (2367)*
- TRICHURIS TRICHIURA, LARGE INTESTINE, BLEEDING, RADIOLOGY, DIAGNOSIS (3768)*
- VIBRIO CHOLERA, TOXIN, CHOLERA (3706)*

MICROSCOPY
- DISSECTING, RECTAL MUCOSA (1605)
- ELECTRON MICROSCOPY, GASTRIC MUCOSA, MUCOUS CELL (6304)*

MICROSOME
- CYTOCHROME B5, LIVER, PEPTIDE FINGERPRINT (1616)
- ENZYME FUNCTION, METHYLENEDIOXYPHENYL, RELATED COMPOUNDS, LIVER, MICE (3059)
- GLUCOSE, LIVER, ENZYME (3837)
- HEME TURNOVER, CYTOCHROME B5, LIVER (8661)
- HEPATOTOXICITY, METABOLISM, CCL4, DIETHYLDITHIOCARBAMATE (8345)
- LIVER, ALIPHATIC HYDROXYLATION (7897)*
- LIVER, AMINO ACIDS (1741)
- LIVER, CHOLESTEROL BIOSYNTHESIS, 4-ALPHA-METHYL STEROL OXIDATION (8654)
- LIVER, CYANIDE BINDING PROTEIN (8525)
- LIVER, CYTOCHROME P-450, EPR, METHYLCHOLANTHRENE (7801)
- LIVER, DRUG METABOLISM, NICOTINAMIDE (7918)*
- LIVER, DRUG METABOLIZING ACTIVITY, POSTMORTEM DIMINUTION (8624)
- LIVER, ELECTRON TRANSPORT, CYTOCHROME B5, GOLGI (6300)*
- LIVER, ENZYME, PHENOBARBITONE (3046)
- LIVER, ENZYME INDUCTION, CHLOROFORM, RETROSINE (9341)
- LIVER, HEPATOMA, PROTEIN SYNTHESIS (2064)
- LIVER, HYDROXYLASE, STEROIDS (6445)*
- LIVER, HYDROXYLATION, CYTOCHROME P-450 (7921)*
- LIVER, LIPID, CCL4 (3937)*
- LIVER, METABOLISM, BENZO(A)PYRENE, AGE, SEX, RAT (3971)
- LIVER, MITOCHONDRIA, DEVELOPMENT (2333)*
- LIVER, MIXED FUNCTION OXIDASE, D2O INHIBITION (8623)*

- LIVER, MIXED FUNCTION OXIDASES, N-OXYGENATION (7113)•
- LIVER, PROTEIN SYNTHESIS, PHENOBARBITAL INDUCTION (7151)•
- LIVER, SLEEP, TRANQUILIZER (1742)
- LIVER, SMOOTH, ENZYMES (7782)•
- LIVER, STEROID, HYDROXYLATION (8613)•
- LIVER, WALKER CARCINOMA 256, STEROID HYDROXYLATION (8630)•
- MEMBRANE, LIVER, VITAMIN E, PEROXIDATION (6305)•
- PROTEIN SYNTHESIS, LIVER, RAT (8656)
- RAT LIVER, DIACYLGLYCEROL, ENZYMES (8646)
- RNA, LEUCINE, HOMOGENIZATION (6446)•
- ROUGH, LIVER, POLYPEPTIDE, PROTEOLYSIS (3063)

MILK
- BREAST, NEONATAL, JAUNDICE, STEROIDS (5997)
- LOW LACTOSE, ZYMIL, MALABSORPTION (6202)
- MARASMUS, ETIOLOGY, TREATMENT (6179)
- PASSIVE IMMUNITY, V. CHOLERAE, SUCKLING MICE (4576)•
- SENSITIVITY, GASTROINTESTINAL (2949)•
- TREATMENT, LOW LACTOSE GASTROENTERITIS, REALIMENTATION (6160)

MINERAL
- ACUTE HYPERSIDERINEMIA, GASTRIC SECRETION, HYDROCHLORIC ACID, GASTRIC MUCOSA (2382)
- EXPERIMENTAL CHOLECYSTITIS, ORGAN, TISSUE, BLOOD (2913)
- LIVER, RAT, TRANSPORT, DISTRIBUTION, NUCLEUS (2351)
- METABOLISM, INTESTINAL MICROFLORA, RAT (0031)•
- SERUM ZINC LEVELS, TRACE ELEMENT, METABOLISM (1347)•
- WATER, ALKALINE, GASTRIC SECRETION (4177)
- WATER, LIVER DISEASE, TREATMENT (4430)
- WATER, THERAPY, CHOLELITHIASIS (4528)
- WATER, THERAPY, GASTROINTESTINAL DISEASE (4652)

MITOCHONDRIA
- ALDEHYDE, MEMBRANE, LIVER (6437)•
- BIVALENT CATION TRANSLOCATION, LIVER (2430)
- BRAIN, LIVER, PROTEIN SYNTHESIS (1745)
- CARNITINE ACETYLTRANSFERASE, COMPARATIVE (0883)
- CRYPT, VILLUS, EPITHELIUM, JEJUNUM, ENZYME ACTIVITY (8513)•
- CYTOCHROME P-450, CHANGE, SPECIES, SEX, ANILINE, HEXOBARBITAL, RAT, MOUSE, RABBIT (5559)•
- DNA, CANCER, LIVER, STOMACH (3549)•
- DNA, X-RAY, SEDIMENTATION (6443)•
- ELECTRON MICROSCOPY, PREPARATION, FIXATION, RAT LIVER (1565)•
- ELECTRON TRANSFER CHAIN, VIBRIO CHOLERAE ENDOTOXINS, KREBS CYCLE INTERMEDIATES, LIVER (7978)
- ENZYME, GLUTAMATE OXALOACETATE TRANSAMINASE, NADH (1767)
- ENZYME, LIVER, PHOSPHOLIPID (2286)•
- HEPATIC, LEVEL, INCREASED BY ETHYL-ALPHA-P-CHLOROPHENOXYISOBUTYRATE (3083)
- HERBICIDAL MONURON, LIVER (3600)
- HISTOPATHOLOGY, MYELIN FIGURES, ELECTRON MICROSCOPY (8091)•
- ISOLATED, LIVER, THYMIDINE INCORPORATION, DNZ, RAT (3069)
- LIPID METABOLISM, LIVER, RAT (8611)•
- LIVER, AMINOTRANSFERASE, RAT (2289)•
- LIVER, BINDING, OXIDATIVE PHOSPHORYLATION, TRIMETHYLTIN, TRIETHYLTIN (6444)•
- LIVER, BRAIN, GLYCOPROTEIN, ASPARAGINASE (7136)•
- LIVER, CALCIUM UPTAKE, POTASSIUM PERMEABILITY (1620)
- LIVER, CONTRACTION, CHLORPROMAZINE (3841)
- LIVER, DEAMINATION (7169)
- LIVER, DICARBOXYLATE ANION EXCHANGE, TRANSPORT INHIBITOR (7105)•
- LIVER, ENDOTOXEMIA, E. COLI, LIPOPOLYSACCHARIDE (7683)•
- LIVER, ENZYME (0725)•
- LIVER, ENZYME, ORNITHINE AMINOTRANSFERASE (1586)
- LIVER, ENZYME, SEPARATION (1578)•
- LIVER, ETHYL CHLORPHENOXY-ISOBUTARATE (0729)•
- LIVER, FATTY ACID, THYROXINE, COLD (3947)•
- LIVER, FATTY ACID ACTIVATION, COMPARTMENTATION, COA (7123)•
- LIVER, FATTY ACID SYNTHESIS, MICROSOMAL SYSTEMS (2321)
- LIVER, FERROCHELATASE, PHENOBARBITAL (7161)•
- LIVER, HALOTHANE, ELECTRON TRANSPORT OXIDATIVE PHOSPHORYLATION, RAT (1707)•
- LIVER, LIPID, CCL4 (3937)•
- LIVER, MECHANISM, UNCOUPLERS, PHOSPHATE (1779)
- LIVER, METABOLISM, ENZYME (1713)•
- LIVER, MICROSOME, DEVELOPMENT (2333)•
- LIVER, OXIDATION, ETHANOL (2391)•
- LIVER, OXIDATIVE PHOSPHORYLATION, AMIDINOALKYLUREAS (3851)
- LIVER, P.O. RATIO, THYROID HORMONE (2396)•
- LIVER, PROTEIN CONTENT, MEMBRANE (1588)
- LIVER, RIBOSOMAL, RNA SYNTHESIS (7147)•
- LIVER, RNA SYNTHESIS, CORTISONE (6424)•
- LIVER, RNA SYNTHESIS, RIFAMYCIN, RAT (0137)
- LIVER, SH-GROUP ALKYLATION, OLIGOMYSIN, ADP (7129)•
- LIVER, TOXIC EFFECTS, OXYGEN UPTAKE, NUCLEOTIDE BINDING (2808)•
- LIVER, TRIIODOTHYRENINE, PROTEIN TURNOVER (6291)•
- LIVER, VALINE, PROPIONYLCARNITINE (3982)
- LIVER PATHOLOGY, ANTIBODY, IMMUNOLOGY (2817)

- MEMBRANE, 35S-LABEL, ELECTROPHORESIS (6301)
- MEMBRANE, PHOSPHOLIPID COMPOSITION, GUINEA-PIG LIVER (2270)*
- METABOLISM, HEPATOCYTE, POISON (4159)
- NAD SYSTEM, REDOX STATE, CIRRHOSIS, MALNUTRITION, RAT (2141)
- OXIDATIVE PHOSPHORYLATION, BIOSYNTHESIS, LIVER, THYROID (3849)
- OXIDATIVE PHOSPHORYLATION, BIOTIN DEFICIENCY, RAT, LIVER (8676)
- PHOSPHATIDYLCHOLINE ORIGIN, LIVER CELL (2424)
- PHYSICAL PROPERTIES, LIVER, RAT (8505)*
- PORTAL VEIN, SMOOTH MUSCLE, METABOLISM (3043)
- PYRUVATE DEHYDROGENASE, REGULATORY PROPERTIES (0881)
- RESPIRATION, INTEGRITY, LIVER, STAINING AGENTS (1579)*
- RESPIRATION, LIVER, HYPOKINESIA, RAT (8674)
- VITAMIN, LIVER DAMAGE, CARBON TETRACHLORIDE, RAT, PROTECTION, ENZYME (2822)

ITOSIS
- CRYPT OF LIEBERKUHN, ILEUM (3093)
- EPITHELIUM, ESOPHAGUS, SOMATOTROPIC HORMONE (0797)*
- JEJUNAL CRYPTS, DIURNAL RHYTHM, DNA SYNTHESIS (0906)*
- LIEBERKUHN'S CRYPTS, INTESTINAL MICROFLORA, RAT (8694)
- LIVER, ACUTE VIRAL HEPATITIS (6096)
- LIVER, CARCINOMA, REGENERATION (1354)*
- LIVER, HEPATECTOMY (4368)*
- LIVER, REGENERATION (4855)
- LIVER, THYMECTOMY (3985)
- SUPPRESSION, LEUCOCYTE, SERA, VIRAL HEPATITIS, DONOR (2870)*

ORBILLI
- LIVER, GLYCOGEN, CHILDREN (4425)

ORPHINE
- HYDROXYLATION, STEROIDS, LIVER, MICROSOMES (7128)*
- INHIBITOR, PGEI-INDUCED INTESTINAL CONTRACTIONS, ILEUM, JEJUNUM (0041)*
- SPHINCTER OF ODDI, SPASM, MUSCULAR HYPERTROPHY (6927)

ORPHOLOGY
- ACUTE ESOPHAGITIS, RADIOLOGY, CAT (8079)
- ACUTE LIVER INSUFFICIENCY, DOG (8286)
- CELLULAR, PANCREAS, ENZYMES, PANCREOZYMIN, ZYMOGEN (1572)*
- CORONAVIRUS, GASTROENTERITIS (3758)
- DUODENAL MUCOSA, CANCER, GASTRIC (7334)
- DUODENUM, RADIATION EFFECTS (7038)
- EXOCRINE PANCREAS, FERRIC CITRATE, LIPOMATOSIS (7790)*
- GALLBLADDER, CHOLECYSTITIS, ANATOMOPATHOLOGY (7661)
- GASTRIC MUCOSA, CHRONIC GASTRITIS (7374)
- GASTRIC MUCOSA, IMMUNOHISTOCHEMISTRY, PERNICIOUS ANEMIA (8851)
- GASTRIC SMOOTH MUSCLE CELL MITOSIS, CHICK, GIZZARD (7819)
- HEMATOPOIESIS, LIVER, FETAL MOUSE (7815)
- HEPATOCYTE POLYPLOIDY, SERUM FACTORS, RAT (8520)
- HERNIA, HIATUS, SMALL AXIS, RADIOLOGY (4092)*
- ISOLATED HEPATIC CELL, SODIUM, TETRAPHENYL BORON (7795)*
- LARGE INTESTINE, MK-2 GLUE APPLICATION (7047)
- LIVER, AGE, RAT (7052)
- LIVER, CELL, PARACZYSTALLINE HYALOPLASM, GASTRIC, ULCER, MITOCHONDRIA (2815)
- LIVER, CELL, ROTOR'S SYNDROME (2940)
- LIVER, METABOLISM, ENZYME (3579)
- LIVER, NUCLEOLI, ACTINOMYCIN D (7799)
- LIVER CIRRHOSIS, GALACTOSAMINE, AUTORADIOGRAPHY, RAT (8376)*
- LIVER DAMAGE, TUBERCULOSIS CHEMOTHERAPY (8337)
- MAST CELLS, DEGRANULATION, VACUOLATION (6283)*
- PANCREAS, ACUTE PANCREATITIS, PATHOGENESIS, CLINICAL PATHOLOGY (9034)
- PANETH CELL DISTRIBUTION, INTESTINE, RABBIT, HAMSTER (8517)
- RUMEN EPITELIUM, SODIUM, OVINE (6334)
- SMALL INTESTINAL MUCOSA, UNCONJUGATED BILE SALTS (7025)*
- SMALL INTESTINE, CHOLERA, MICROSCOPY, DOG (3416)*
- SMALL INTESTINE, VILLI, HISTOLOGY (1570)*
- UPPER ABDOMINAL MESENTERY, DEVELOPMENT MAN (8516)
- WILSON'S DISEASE, GLIOPATHY, HEPATOGENIC (8272)*

MOTILITY
- ADRENERGIC RECEPTORS, COLON (7854)*
- ALIMENTARY TRACT, MYENTERIC PLEXUS (4634)
- AMEBOID, ACITES TUMOR CELLS (3562)
- BACILLUS SUBTILIS, INTESTINAL TRANSIT, MICROFLORA, SALMONELLA TYPHYMURIUM (9220)
- BILIARY TRACT, KETOSCILIUM (7749)
- CHOLEDOCHODUODENAL SPHINCTER, DUODENUM, DRUG EFFECTS, TERBUTALINE, ISOPRENALINE, HEART RATE (5513)*
- COLON, ANGIOTENSIN, ACETYLCHOLINE, ATROPINE, PROCAINE, HEXAMETHONIUM (4795)*
- COLON, EXTRINSIC NERVES, BLOOD (3898)
- COLON, ILEUM, HYPOTHYROIDISM, SLOW WAVES (4786)*
- COLON, RECTUM, PERISTALSIS (7855)
- CONSTIPATION, CARMINE, FECES (6528)
- CONTINENCE, ULCERATIVE COLITIS, SURGERY, ILEUS, ILEOSTOMY, COLECTOMY, ANASTOMOSIS (5128)
- DIARRHEA, SPHINCTER, ANAL, ILEOCECAL, EXPERIMENTAL, VOLUMOGENIC (3886)*
- DIGESTION, METOCLOPRAMIDE PHARMACOLOGY (8577)
- DIGESTIVE TRACT, TRIGLYCERIDE (4799)

DUODENAL, DYSKINESIA, OBSTRUCTIVE, JAUNDICE, ODDI SPHINCTER, RADIOKINETICS (5322)
DUODENUM, JEJUNUM, ILEUM, RADIATION INJURY (4791)•
DUODENUM, SECRETIN, CHOLECYSTOKININ-PANCREOZYMIN (7194)•
DUODENUM, STOMACH, FOOD, HUNGER (7078)•
DUODENUM, STOMACH, MORPHOLOGY, DIVERTICULITIS (7258)
DUODENUM, STOMACH, NICOTINE (4801)
ELECTRICAL, MECHANICAL PAPAVERINE, TAENIA COLI (7857)
ELECTROMYOGRAPHY, ESOPHAGUS, GASTROESOPHAGEAL SPHINCTER, INTRALUMINAL PRESSURE, DEGLUTITION (4789)•
ELECTROMYOGRAPHY, STOMACH, ANTRUM, MUCOSA, MUSCLE, ELECTRICAL ACTIVITY, RECORDING, MAN (4796)•
ELECTROMYOGRAPHY, STOMACH, SEROSA, GASTRIN PENTAPEPTIDE (5514)•
ESOPHAGEAL (3897)
ESOPHAGEAL, STENOSIS, ACHALASIA, DYSCHALASIA (6601)
ESOPHAGUS (7280)
ESOPHAGUS, ALTERATION, DIABETES (2548)•
ESOPHAGUS, ANASTOMOSIS, HEMORRHAGE (4964)
ESOPHAGUS, DISTURBANCES (1848)
ESOPHAGUS, HIATUS HERNIA, ANATOMOPATHOLOGY (8070)
ESOPHAGUS, NERVOUS CONTROL, DOG (0043)•
ESOPHAGUS, SCLEROSIS (4126)
ESOPHAGUS, SPASM, GASTRIC CARCINOMA (5790)
ESOPHAGUS, STOMACH, MYOTONIA, ATROPHIC (0046)
ESOPHAGUS, WATER TEMPERATURE (2357)•
GALLBLADDER, CHOLESTEROL GALLSTONE, BILE CONSTITUENTS (7930)
GALLBLADDER, SPHINCTEROTOMY, SPHINCTER OF ODDI (8576)
GALLBLADDER, VEGETABLE JUICE (7086)
GASTRECTOMY, PROPHYLAXIS (7333)
GASTRIC, BIOELECTRIC ACTIVITY, DRUG EFFECT, SHEEP (0051)
GASTRIC, ELECTRIC RHYTHM (5524)
GASTRIC, ELECTROMYOGRAM, PACE-SETTER POTENTIALS (6387)
GASTRIC, MEDULLA OBLONGATA, SPLANCHNIC NERVE (0052)
GASTRIC, PENTAGASTRIN, VAGOTOMY, DOG (1644)•
GASTRIC, PROPAGATION VELOCITY, CARBOCHOLINE, LONGITUDINAL AND CIRCULAR MUSCLES (0050)
GASTRIC ANTRUM, PRIFINIUM BROMIDE (8575)
GASTRIC EMPTYING, ALCOHOL (7850)•
GASTRIC EMPTYING, FOODSTUFFS (6384)
GASTRIC EMPTYING, PITUITARY CONTROL (7088)
GASTRIC EMPTYING, VAGOTOMY (7082)
GASTRIC MUCOSA, ADENINE COMPOUNDS, FROG (3073)
GASTRODUODENAL, GASTROINTESTINAL DISEASES, METCLOPRAMIDE (8455)
GASTROINTESTINAL MYOGRAPHY, LAPAROSCOPY, MAN (8578)
GASTROINTESTINAL TRACT, ALKALI TEST, METOCLOPRAMIDE (1659)
GASTROINTESTINAL TRACT, DIAZEPAM, DUODENAL ULCER (6391)
GASTROINTESTINAL TRACT, INFERIOR VENA CAVA (5525)
GASTROINTESTINAL TRACT, MYENTERIC PLEXUS (3130)
GASTROINTESTINAL TRACT, PETHIDINE, MORPHINE, POSTOPERATIVE, MAN (3701)•
GASTROINTESTINAL TRACT, ULCER, STOMACH, DUODENUM (5032)
ILEUM, LONGITUDINAL MUSCLE, SCHULTZ-DALE RESPONSE (7856)
ILEUM, UTERUS ESTROGEN, ANTIGENS (8574)
INCONTINENCE, ANAL SPHINCTER, SURGERY, FASCIA PLASTIC, GRACILIS MUSCLE (4968)
INTESTINAL, DEHYDROBENZPERIDOL, FENTANYL, KETAMINE (6385)
INTESTINAL, SMOOTH MUSCLE, PRESSURE (7999)
INTESTINE, CIRCULATION, HYPEROSMOLARITY (5338)
ISOLATED SEGMENTS, CONTRACTILITY, TONE (5515)•
JEJUNUM, ILEUM, PROPLYENE GLYCOL, ANTAGONISTS (3885)•
JEJUNUM, RELAXATION, ANTIBIOTICS, BLOCKING AGENTS (4787)•
LARGE INTESTINE, DUODENAL RECEPTOR, DOG (7079)
LARGE INTESTINE, RECTUM, SIGMOID, FOOD, PRESSURE, GASTRECTOMY, PERNICIOUS ANEMIA, DUODENAL ULCER (4264)•
MOTOR RESPONSE, STOMACH, SYMPATHETIC STIMULATION, TONUS, RELAXATION, ATROPINE (5518)•
MUCOSA, VOLUME FLOW, TRANSMURAL POTENTIAL (6351)•
PENTAGASTRIN, STOMACH, SECRETION (1650)•
PERISTALSIS, ESOPHAGUS, MEASUREMENT, CLOSURE FORCE, INFUSED CATHETER (5507)•
PERISTALSIS, ISOLATED, COLON, INTRALUMINAL STIMULUS (5506)•
PERISTALSIS, MESENTERIC ARTERY OCCLUSION, DOG (6170)
PERISTALSIS, SEGMENTAL INVERSION, SMALL INTESTINE, RAT (8579)
PERISTALSIS, SMALL BOWEL, ACCELERATION, CHOLECYSTOKININ, CONTRAST STUDY (5694)
PERISTALTIC CONTRACTIONS, ESOPHAGOGASTRIC JUNCTION, INTRALUMINAL PRESSURE MEASUREMENTS, MAN (8714)
PORTAL VEIN, CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, THEOPHYLLINE, ADRENERGIC RECEPTOR (5627)•
PYLOROPLASTY, GASTRIC SECRETION, RECURRENT ULCER (1667)•

RADIOLOGY, HIATUS HERNIA, REFLUX, MORPHOLOGY (1809)•
RECTUM, MEGACOLON, NEONATE, CHILDREN (5929)
SMALL INTESTINE, ABSORPTION, HYPOTHERMIA, PERFUSION (5615)•
SMALL INTESTINE, CHRONIC ENTERITIS (6194)
SMALL INTESTINE, EXUDATE, MESENTERIC ARTERY (3891)•
SMALL INTESTINE, HORMONAL CONTROL, JEJUNAL CONTRACTIONS (5516)•
SMALL INTESTINE, HYPOPHYSECTOMY, PITUITARY GRAFT (7087)
SMALL INTESTINE, ILEUM, ELECTRICAL, STIMULATION (6378)•
SMALL INTESTINE, ILEUM, SMOOTH MUSCLE, CATECHOLAMINES, ADRENALINE, NORADRENALINE, ISOPRENALINE, ADRENOCEPTOR (5517)•
SMALL INTESTINE, INNERVATION, DOG (7081)
SMALL INTESTINE, LARGE INTESTINE, MANOMETRY (2538)
SMALL INTESTINE, MESENTERIC ARTERY OCCLUSION, DRUG EFFECTS (4788)•
SMALL INTESTINE, MYOELECTRIC ACTIVITY, SECRETIN EFFECT, ACTION POTENTIAL (5519)•
SMALL INTESTINE, SEROSA, MUCOSA, ATP, TRANSMEMBRANE POTENTIAL (4760)•
SMALL INTESTINE, SEROTONIN, COHERIN, BIEBLE LOOPS, DOG (5510)•
SMALL INTESTINE, SEX STEROIDS (7083)
SMOOTH MUSCLE, STOMACH, CAT (7084)
SPASM, ESOPHAGUS, DILATATION, SPHINCTER (5761)
SPASM, GASTROINTESTINAL TRACT, PSYCHOSOMATIC, ESOPHAGUS, CARDIA, PYLORUS, COLON (6204)
SPHINCTER, ESOPHAGUS, OPOSSUM (3123)•
STENOSIS, ESOPHAGUS, HYPERMOTILE, RADIOLOGY, SPASM, ACHALASIA (2554)
STOMACH, ANTRAL POUCHES, DENERVATED (1645)•
STOMACH, BACTERIAL LIPOPOLYSACCHARIDE, NERVOUS CONTROL, ADRENALECTOMY, ADRENERGIC MECHANISM (3893)•
STOMACH, DUODENUM, BILE FLOW (5526)
STOMACH, DUODENUM, NICOTINE, SITE OF ACTION, DOG (4793)•
STOMACH, GASTRIN PENTAGASTRIN, ACIDITY (4808)
STOMACH, NERVOUS CONTROL, CONTRACTION CYCLES (1657)
STOMACH, PRESSURE STUDIES, ACID SECRETION, DOG (0803)•
STOMACH, PROSTAGLANDIN-E1, GASTRIC POUCH (1648)•
STOMACH, REFLEX CONTROL, VAGAL EFFERENTS, PERIPHERAL STIMULATION, CENTRAL STIMULATION (5520)•
STOMACH, SECRETIN, GASTRIN, CHOLECYSTOKININPANCREOZYMIN, GLUCAGON (8573)•
STOMACH, SECRETION, NERVOUS CONTROL (5472)
STOMACH RELAXANT, PRESSURE (5767)
STOMACH SMOOTH MUSCLE, ATROPINE ELECTRODE RECORDING, GUINEA PIG (3865)•
TAENIA COLI, TEMPERATURE, GUINEA PIG (6386)

MOTOR ACTIVITY
ATROPINE, CHRONIC CHOLECYSTITIS, GALLBLADDER (2918)
BILE DUCT, DUODENUM, SPHINCTER OF ODDI, CHOLANGIOGRAPHY, PANCREATITIS (2914)
GASTROINTESTINAL TRACT, PERISTALSIS, BILIARY TRACT, CHOLECYSTOKININ (0070)•
OPISTHORCHOSIS, GALLBLADDER, DIAGNOSIS, RADIOLOGY (3003)
SECRETION, SURGERY, TOXIC GOITER, RADIOLOGY, STOMACH (2587)

MOUTH
LIP, CANCER, STOMACH DISORDERS (1885)
MUCOSA, METASTASIS, ADENOCARCINOMA, STOMACH (1099)
ULCERS, STRESS-INDUCED, GASTRIC, PHYSICAL RESTRAINT, DRUG EVALUATION, RAT (0305)

MUCOCELE
APPENDICITIS, SMALL INTESTINE, OBSTRUCTION (3499)
APPENDIX, TUMOR, EXTRACECAL, ILEOCECAL (6726)

MUCOSA
AUTORADIOGRAPHY, THYMIDINE-H3, ININFILTRATION (0222)
BLOOD FLOW, AMINOPYRINE-CLEARANCE, GASTRIN, VASOPRESSIN, SECRETORY INHIBITOR (1672)•
CANCER, STOMACH, CYTOLOGY, EXFOLIATIVE (0206)
CAT, COLON, DRUG EFFECT, PERISTALSIS (2477)
CIRCULATION, SEROTONIN, COLON (2317)
COLON, SMALL INTESTINE, SHIGELLA (3994)•
COLON, SOLUBLE ANTIGENS, BIOIMMUNOCHEMISTRY (3086)
COLONIC, BICARBONATE AND NON-NA COMPONENTS (2341)•
DUODENAL, HALF LIFE, ENZYME SECRETION, PANCREAS (7880)•
DUODENUM, ILEUM, VITAMIN D (2471)•
DUODENUM, JEJUNUM, ENZYME (3823)
DUODENUM, MUCOPOLYSACCHARIDES, PEPTIC ULCER (7394)
DUODENUM, PATHOLOGY, CYST, CHOLEDOCHOCELE, BILE FLOW, STONES (4131)•
ECTOPIC GASTRIC, ESOPHAGUS, HISTOGENESIS, COMPLICATION (2575)
EPITHELIAL CELLS, ISOLATION, INTESTINE (3091)
ESOPHAGUS, BLOOD FLOW (7300)
ESOPHAGUS, SURGERY, REGENERATION (3316)
FUNDIC, ANTRECTOMY (8089)•
GALLBLADDER, BILE, GLYCOPROTEINS, IMMUNOLOGY (7653)•
GALLBLADDER, HYPERPLASIA, CHOLECYSTOLITHIASIS (1458)•
GALLBLADDER, HYPERPLASTIC STATE, BILIARY PAIN (3680)
GASTRIC, ACID SECRETION, CHRONIC, ATROPHIC GASTRITIS (8128)

GASTRIC, ACUTE HYPERSIDERINEMIA, HYDROCHLORIC ACID, GASTRIC SECRETION (2382)
GASTRIC, AMINE STORING CELLS, MORPHOLOGY (6285)•
GASTRIC, ANTIGENISITY (2380)
GASTRIC, BLOOD LOSS, ASPIRIN (6614)•
GASTRIC, CL FLUXES, CO2 AND HCO3- (2354)
GASTRIC, CIRCULATION, PROSTAGLANDIN E1, NOREPINEPHRINE (2485)•
GASTRIC, DUODENUM, JEJUNUM, BACTERIAL FLORA (2190)•
GASTRIC, FINE STRUCTURE, SECRETION, PILOCARPINE (0737)•
GASTRIC, GASTRITIS, ATROPHIC, DIGESTION (6628)
GASTRIC, HISTOCHEMISTRY, CARBONIC ANHYDRASE, RAT (8589)
GASTRIC, HISTOLOGY, RHEUMATOID ARTHRITIS, GASTRIC HYPOACIDITY (8537)
GASTRIC, HYPERSECRETION, METABOLISM, XYLAMIDE (4149)
GASTRIC, IMMUNOHISTOCHEMISTRY, PERNICIOUS ANEMIA, HISTAMINE RESISTANT ACHYLIA (8851)
GASTRIC, IMMUNOPATHOLOGY (8105)
GASTRIC, INORGANIC IONS, CHOLINERGIC, LACERTA VIRIDIS (6401)
GASTRIC, LACTATE DEHYDROGENASE, JEJUNAL MUCOSA, SHEEP (8528)
GASTRIC, MAST CELL (3822)
GASTRIC, METABOLISM, CALCIUM, HISTAMINE, ULCER (2640)
GASTRIC, MORPHOLOGY, SUCTION BIOPSY, IMMUNOGLOBULINS, CHRONIC GASTRITIS (8839)
GASTRIC, MUCOUS CELLS, FUNDUS, PYLORUS CORTISONE (8585)•
GASTRIC, NA+ -K+ -DEPENDENT ATPASE, AMP (3914)
GASTRIC, PROLAPSE, DUODENUM, RADIOLOGY, DIAGNOSIS (2593)
GASTRIC, PROTEASE, ELECTROPHORESIS PEPSINOGEN (0784)•
GASTRIC, PYLORUS, ANTRUM, PREPYLORIC ANTRUM (6638)
GASTRIC, SCLEROSIS, SYSTEMIC, PROGRESSIVE (0688)
GASTRIC, SECRETION, ANESTHETICS, FROG (1681)
GASTRIC, SECRETION, HYPERTHYROIDISM (4181)
GASTRIC, SEROTONIN, PEPSIN, SECRETION (7868)
GASTRIC, UREASE-CARBODEHYDRASE-SUBSTRATE COMBINATION, GASTRIC SECRETION, RAT (8594)
GASTRIC, XYLAMIDE, GASTRIC ULCER, GASTRODUODENITIS (7387)•
GASTRIC BARRIER, LYSOLECITHIN, DIGITOXIN, PHOSPHOLIPASE A (8556)•
GASTROINTESTINAL, ELECTRON MICROSCOPY (3835)
HUMAN JEJUNAL, CYTOCHEMISTRY, NORMAL, MALABSORPTION (8931)
ILEUM, MALABSORPTION, JOHNE'S DISEASE, AMINO ACID ABSORPTION (0404)•
INTESTINAL, AMINO ACID TRANSPORT, ATPASE, CARDIOACTIVE STEROIDS, RAT (1639)
INTESTINAL, CELL-FREE, LIPOPROTEIN BIOSYNTHESIS (8685)•
INTESTINAL, DIPEPTIDASES, CELIAC DISEASE, CHILDREN (1216)•
INTESTINAL, DISACCHARIDASE, CYCLOPHOSPHAMIDE (4653)
INTESTINAL, ENZYMATIC ACTIVITY, BRONCHITIS (4636)
INTESTINAL, ENZYME, DISACCHARIDASE, ACTIVITY, DECREASE, COLCHICINE (3035)•
INTESTINAL, GALACTOSEMIA, GALACTOSE-1-PHOSPHATE URIDYL TRANSFERASE (8273)•
INTESTINAL, PROTEOLYTIC ENZYMES, SECRETIN, PANCREOZYMIN (0087)
INTESTINAL, PYRUVATE CARBOXYLASE, CARBOXYKINASE (3838)
INTESTINE, ADENOSINE DEAMINASE, CALF (2280)•
INTESTINE, CANCER, HISTOCHEMISTRY, ENZYMES (0014)•
INTESTINE, DISACCHARIDASE (3993)
INTESTINE, ENZYME, ACTH, CORTISONE (3853)
INTESTINE, FATTY ACID PATTERN, MAN (8691)
INTESTINE, LYMPH, PERMEABILITY (8508)•
INTESTINE, MALABSORPTION, CYTOSTATIC DRUG (3732)
INTESTINE, MICROSOMES, PHOSPHODIESTERASE I (8962)
INTESTINE, RAT, PHOSPHOLIPID, DISTRIBUTION (6492)•
INTESTINE, ULTRASTRUCTURE, HEDGEHOG, HIBERNATION (2501)•
JEJUNAL, PROTEIN-LOSING ENTEROPATHY, DERMATITIS HERPETIFORMIS (3447)•
JEJUNAL, SUCTION BIOPSY, LIPID METABOLISM, ALKALINE PHOSPHATASE (6346)
JEJUNUM, CELIAC DISEASE, PREDNISOLONE (3437)•
JEJUNUM, CELIAC DISEASE, STEATORRHEA (5085)
JEJUNUM, DISACCHARIDASE, GERIATRICS (0661)
JEJUNUM, DUODENUM, CHOLESTEROL ESTER STORAGE, ULTRASTRUCTURE (0358)•
JEJUNUM, ILEUM, ALDOSTERONE, TRANSFER SYSTEM (1630)•
RECTAL, CARCINOMATOUS, CYTOCHEMISTRY, ISOENZYMES (8940)•
RECTAL, DISSECTING MICROSCOPY (1605)
RECTAL, MORPHOLOGY, CYSTIC FIBROSIS, MUCOUS SECRETIONS (3464)•
RECTAL, SUCTION BIOPSY (4028)
REFLEX, SMALL INTESTINE, CONTRACTION (3129)
SEROSA POTENTIAL DIFFERENCE, COLON, MAN (1662)
SMALL INTESTINAL, DISACCHARIDASE LEVEL, NORMAL STUDY, HEPATITIS STUDY (3636)
SMALL INTESTINE (2339)•
SMALL INTESTINE, ACID HYDROLASE, ELECTRON MICROSCOPY (3796)•

SMALL INTESTINE, CELLS, QUANTITATION (3029)•
SMALL INTESTINE, ENZYME (1942)
SMALL INTESTINE, ENZYME, CHILDREN (3852)
SMALL INTESTINE, EPITHELIAL CELLS (7982)•
SMALL INTESTINE, EVERTED SACS, HISTOLOGY, MORPHOLOGICAL ALTERATION, ABSORPTION STUDY (3798)•
SMALL INTESTINE, GEOPHAGIA, ANEMIA (4216)•
SMALL INTESTINE, GLUCOSAMINE, GLYCOPROTEIN (8686)•
SMALL INTESTINE, HISTOCHEMISTRY, ULTRASTRUCTURE (1563)•
SMALL INTESTINE, ILEUM, HISTOLOGY, ULTRASTRUCTURE, FREEZING (2290)•
SMALL INTESTINE, ILEUM, TOXIC EFFECT (2334)•
SMALL INTESTINE, JEJUNUM, SODIUM, ENZYME (1633)•
SMALL INTESTINE, LAMBLIA, VILLI, MOUSE (3008)
SMALL INTESTINE, LARGE INTESTINE, PROLIFERATION, STARVATION (0910)•
SMALL INTESTINE, MORPHOLOGY (1563)•
SMALL INTESTINE, MOTILITY, EXUDATE, MESENTERIC ARTERY, VILLOUS BODIES (3891)•
SMALL INTESTINE, PEPTIDE ABSORPTION, COMPETITIVE INHIBITION (1626)•
SMALL INTESTINE, POTENTIAL DIFFERENCE, IONS (3862)•
SMALL INTESTINE, RADIATION (3736)
SMALL INTESTINE, RETINOIC ACID, ENZYME (1783)•
SMALL INTESTINE, SERIAL BIOPSY, KWASHIORKOR, NUCLEIC ACID, PROTEIN (3440)•
SMALL INTESTINE, STOMACH, METAPLASIA, ELECTRON MICROSCOPY (2582)•
SMALL INTESTINE, TRIGLYCERIDE SYNTHETASE (8503)•
SMALL INTESTINE, TUMOR (1939)
SMALL INTESTINE ULTRASTRUCTURE, AUTOLYSED SPECIMEN (7034)•
STOMACH, ABSORPTION, PATHOLOGY (1757)
STOMACH, ACETOSALICYLIC ACID, ABSORPTION (3098)•
STOMACH, AMINE STORING CELLS (6285)•
STOMACH, AMMONIA, UREASE (4127)•
STOMACH, ANTISERUM, IMMUNOFLUORESCENCE (0950)•
STOMACH, ANTRUM, FUNDUS, ION FLOW, WATER FLOW, POUCH DOGS (3905)•
STOMACH, ANTRUM, HISTOLOGY, MORPHOLOGY, BILE EFFECT (3027)•
STOMACH, BLOOD FLOW, ASPIRIN (3241)•
STOMACH, CHIEF CELLS, ULTRASTRUCTURE RABBIT (0012)•
STOMACH, COLON, ISOENZYMES, LACTASE DEHYDROGENASE (0062)•
STOMACH, CORTICOSTEROIDS, MUCUS (3342)•
STOMACH, DUODENUM, ANTRO-FUNDAL REGION (1903)•
STOMACH, ENZYMES, HISTOCHEMISTRY, RADIOISOTOPES (0071)•
STOMACH, ESOPHAGUS, POTENTIAL DIFFERENCE (3889)•
STOMACH, EXCISION, SUCTION BIOPSY (0214)
STOMACH, EXFOLIATION, RENEWAL, HORMONES, DRUGS (3909)•
STOMACH, FREEZING, HISTOCHEMISTRY, ENZYME, SECRETION, PH INDICATOR (1608)
STOMACH, FUNDUS, BORDER CELLS, MORPHOLOGY, RABBIT (0013)•
STOMACH, GASTRIN, CYTOLOGY, HISTOCHEMISTRY (0002)•
STOMACH, HEALING, SQUAMO-COLUMNAR JUNCTION (6607)•
STOMACH, HEXOSAMINE INTERMEDIATES, ION EXCHANGE, PAPER CHROMATOGRAPHY, FREEZING (4187)•
STOMACH, HISTAMINE, MAN (0007)•
STOMACH, HISTOCHEMISTRY, ULTRASTRUCTURE, ENTEROCHROMAFFIN CELLS, AMINE MECHANISMS (3793)•
STOMACH, HISTOLOGY, ULTRASTRUCTURE, HISTAMINE, SEROTONIN (2633)•
STOMACH, HUMAN, ANTIGEN, IMMUNOFLUORESCENCE, HETEROIMMUNSERA (3795)•
STOMACH, INTRINSIC FACTOR (3150)
STOMACH, ION TRANSPORT, ANIMAL (0030)•
STOMACH, IRON, EXCRETION (1640)
STOMACH, MOTILITY, OPTICAL DENSITY, ADENINE COMPOUNDS, FROG (3073)
STOMACH, PATHOLOGY, HYPERCHLORHYDRIA, PROTEIN-LOSING GASTROPATHY (1860)•
STOMACH, PATHOLOGY, ULTRASTRUCTURE, HISTOLOGY (1025)•
STOMACH, PATHOLOGY, ULTRASTRUCTURE, NEOPLASM, LEIOMYOBLASTOMA (1576)•
STOMACH, PEPSINOGEN, ELECTROPHORESIS (3393)•
STOMACH, PYLORUS, FUNDUS, FUCOSE, ACTH, CORTISONE (3904)•
STOMACH, QUATERON ACTION, MUSCLE LAYERS (0073)
STOMACH, SECRETION (4152)
STOMACH, SECRETION, ACID (2628)
STOMACH, SECRETION, HISTOLOGY, ENZYME ACTIVITY, B-GLUCURONIDASE (4129)•
STOMACH, SMALL INTESTINE, PATHOLOGY (1671)•
STOMACH, SMALL INTESTINE, SEROTONIN (2659)•
STOMACH, ULTRASTRUCTURE, ELECTRON MICROSCOPY, RAT (0017)
STOMACH, VAGUS, SURGERY (3354)
ULCER, HYPERSECRETION (1913)

MUCOVISCIDOSIS
  CIRRHOSIS (0523)
  EXOCRINE, PANCREATIC (3524)
  FIBROCYSTIC DISEASE, PANCREAS, INCIDENCE, NEW ZEALAND (2018)
  INTESTINAL AND PULMONARY COMPLICATIONS (0524)

MUSCLE
  ANAL, DEOXI-D-GLUCOSE PHOSPHORYLATION, TESTOSTERONE, INSULIN (3872)
  CIRCULAR, LONGITUDINAL, JEJUNUM, ELECTROPHYSIOLOGY, CAT, RABBIT (2358)•
  COLON, MOTILITY, ADRENERGIC RECEPTORS (7854)•

  - ESOPHAGEAL (3123)•
  - ESOPHAGEAL, CHANGES, MUSCULAR DYSTROPHY (0991)
  - GRACILIS, SURGERY, ANAL SPHINCTER INSUFFICIENCY (4968)
  - LARGE INTESTINE, TAENIA COLI, ULTRASTRUCTURE (6289)•
  - MALNUTRITION, ADIPOSE, INFANT (6227)
  - PHARMACOLOGICAL RESPONSE, ATROPINE, D-TUBOCURARINE, ESOPHAGUS (3317)
  - PHARYNGOESOPHAGEAL, ACTIVITY DURING SWALLOWING, MAN (1658)
  - PYLORIC, HYPERTROPHY, ADULT (0326)
  - RIGIDITY, SPASM, ESOPHAGEAL OBSTRUCTION (1850)
  - SKELETAL, ENZYME RELEASE, LIVER (3844)
  - SKELETAL, TYPE III GLYCOGENOSIS, LIVER PATHOLOGY, ULTRASTRUCTURE, GLYCOGEN (5986)•
  - SMOOTH, COLON, CONTRACTION, RELAXATION, CATECHOLAMINE, ALPHA RECEPTORS, BETA RECEPTORS, RAT (5509)•
  - SMOOTH, COLON, PERISTALSIS, INNERVATION, DRUG EFFECTS, GANGLION BLOCKING AGENTS (5508)•
  - SMOOTH, CONTRACTION, BLOOD, GASTRIC ULCER, DUODENAL ULCER (5521)
  - SMOOTH, CONTRACTION, TAPEWORM, POTASSIUM, SODIUM, MEDIUM, ANOXIA (2475)
  - SMOOTH, INTESTINAL, MOTILITY (7999)
  - SMOOTH, LEIOMYOMAS, DIGESTIVE TRACT, SYMPTOMS (0709)
  - SMOOTH, SMALL INTESTINE, ELECTROPHYSIOLOGY, BIOPOTENTIAL (0039)•
  - SMOOTH, SMALL INTESTINE, ILEUM, MOTILITY, CATECHOLAMINES, ADRENOCEPTOR (5517)•
  - SMOOTH, STOMACH, ANTRUM, ELECTRICAL ACTIVITY, RECORDING, MAN (4796)•
  - SMOOTH, STOMACH, BIOELECTRIC ACTIVITY, DRUG EFFECTS, SHEEP (0051)
  - SMOOTH, STOMACH, LOGITUDINAL, CIRCULAR, CONTRACTILE, CARBOCHOLINE, DOG (0050)
  - SMOOTH, STOMACH, POTENTIAL, TEMPERATURE, PYLORIC ANTRUM, CAT (0048)
  - SMOOTH, STOMACH LAYERS, QUATERON ACTION, ADRENALINE NORADRENALINE, MUCOSA (0073)
  - SMOOTH, TAENIA CECUM TONE, ELECTRICAL AND CHEMICAL STIMULATION, INNERVATION (0053)
  - STOMACH, ANTRUM, LONGITUDINAL, CIRCULAR, CONTRACTION, MEMBRANE POTENTIAL (2356)•
  - TAENIA COLI, ELECTRICAL, MECHANICAL ACTIVITY PAPAVERINE (7857)
  - WATER AND ELECTROLYTE CONTENT, PYLORIC STENOSIS (2583)•
- MYATONIA DYSTROPHICA
  - CONGENITAL, CHOLELITHIASIS (1481)
- MYCOSIS
  - CANDIDIASIS, BILIARY TRACT, ANTIBIOTIC (2919)
- MYELOMA
  - STOMACH, PLASMA CELL, INFILTRATION, RUGAL FOLDS, ULCER (0292)
- MYELOMENINGOCELE
  - CUTANEOUS URETERO-ILEOSTOMY, URINARY DIVERSION, CHILDREN (0372)
- MYENTERIC PLEXUS
  - MOTILITY, GASTROINTESTINAL TRACT (3130)
- MYONECROSIS
  - CLOSTRIDIAL, ULCERATED COLONIC ADENOCARCINOMA, RECOVERY (0480)
- MYOTOMY
  - SIGMOID, COLON, RECTUM, DIVERTICULAR DISEASE, INTRALUMINAL PRESSURE (3459)•
- MYOTONIA
  - ATROPHIC, GASTROINTESTINAL MANIFESTATIONS (0046)

- NASOGASTRIC TUBE
  - POSITION, GASTRIC SECRETION STUDY (3293)
- NECATOROSIS
  - LIVER FUNCTION TEST, ANEMIA, IRON DEFICIENCY (2265)
- NECROSIS
  - FATAL, SENSITIVITY, METHOXYFLURANE (3591)•
  - HEMORRHAGIC, MUCOSAL, GASTROINTESTINAL, PERFORATION (1098)
  - HEPATIC, ACUTE, SEVERE ICTERUS (3141)
  - LIVER, CARBON TETRACHLORIDE (2419)•
  - LIVER, HEMOBILIA, HALOTHANE (1399)
  - LIVER, RAT, REGENERATING, N-ACETYL-B-GLUCOSAMINIDASE (2394)•
- NEMATODE
  - STRONGYLOIDES STERCORALIS, CLINICAL EVALUATION (2268)
  - STRONGYLOIDES STERCORALIS, DIAGNOSIS TREATMENT (2262)
- NEOMYCIN
  - COLON, SURGERY, INDICATIONS (1261)
  - LACTULOSE, HEPATIC ENCEPHALOPATHY (6522)•
  - MALABSORPTION, INTESTINAL, COLCHICINE, MAGNESIUM SULFATE (2331)•
- NEONATE
  - JAUNDICE, STEROID, BILIRUBIN (4424)
  - LIVER, PROTEIN, METABOLISM (6440)•
  - RADIOLOGY, GASTROINTESTINAL TRACT (4088)
- NEOPLASM
  - ADENOCARCINOMA, ESOPHAGEAL EPITHELIUM, MALIGNANCY (8067)
  - ADENOCARCINOMA, GALLBLADDER, LIVER ALTERATIONS (9048)
  - ADENOMA, APPENDIX, RIGHT HEMICOLECTOMY (0487)
  - AMEBIASIS, LIVER (1560)
  - ANORECTAL MELANOMA, ANATOMOPATHOLOGY, HISTOPATHOLOGY (8980)
  - BENIGN TUMOR, ESOPHAGUS, RADIOLOGY (8824)
  - BENIGN TUMORS, GASTRODUODENAL ANATOMOPATHOLOGY, HISTOLOGY (8867)
  - BLADDER, UTERUS, RADIOLOGY, RECTUM, SIGMOID FLEXURE, TENESMUS, HYPEREMIA, SPASM, PAIN (2736)
  - CANCER, ESOPHAGUS, COBALT TELECURIETHERAPY (8804)

- CANCER, ESOPHAGUS, RADIOTHERAPY (8800)
- CANCER, GALLBLADDER, ETIOLOGY (9173)
- CANCER, LIVER, STOMACH, ALPHA-FETOPROTEIN (8876)
- CANCER, PANCREAS, LUNG INVOLVEMENT (9011)
- CARCINOID, LARGE INTESTINE, MALIGNANCY (8181)
- CARCINOID TUMOR, METASTASES, LIVER, RADIOTHERAPY (9069)
- CARCINOMA, DUODENUM, HETEROTOPIC PANCREAS (8848)
- CARCINOMA, LYMPHOSARCOMA, PANCREAS, DIFFERENTIAL DIAGNOSIS (8790)
- CECAL TUMOR, DOUBLE CONTRAST METHOD, DIFFERENTIAL DIAGNOSIS (8948)
- COLON, GLYCOGEN CONTENT, GLYCOGENESIS RATE (0469)
- COLON, RECTUM, SURGERY (1258)
- COLORECTAL, CARCINOMA, FLUOROURACIL, RADIOACTIVE GOLD (8209)
- ESOPHAGEAL TUMORS, CONGENITAL LESIONS, PERFORATION (8808)
- GASTRIC, DIAGNOSIS, RADIOISOTOPES (3920)
- GASTRIC, PHLEGMONOUS GASTRITIS, SURGERY, ANTIBIOTIC MANAGEMENT (8122)
- GASTRIC, ULCERATED, BENIGN ULCERATIONS DIAGNOSIS (0212)
- GASTRIC CANCER, CYTOLOGY, DIAGNOSTIC METHODOLOGY (8727)
- GASTRIC CANCER, ETIOLOGY, ANATOMOPATHOLOGY, HISTOLOGY (8874)
- GASTRIC CANCER, GASTRECTOMY, ESOPHAGEAL JEJUNODUODENOPLASTY (8852)
- GASTRIC CARCINOMA, DOUBLE CONTRAST ROENTGENOLOGY (8743)
- GASTRIC CARCINOMA, PROPHYLACTIC EXAMINATION, GERMANY (8861)
- GASTRIC LEIOMYOMA, CALCIFICATION, SURGERY (8869)
- GASTRIC LEIOMYOSARCOMA, DIAGNOSIS, THERAPY (8857)
- GASTRIC LYMPHOSARCOMA, GASTROSCOPY, HISTOLOGY (0322)
- GASTRIC NEURINOMA, HISTOLOGY, ANATOMOPATHOLOGY (8853)
- GASTRIC NEURINOMA, HISTOPATHOLOGY, PARTIAL GASTRECTOMY (8842)
- GASTRIC POLYPS, CANCERIZATION, PATHOGENESIS (8838)
- GASTRITIS, CHRONIC, ATROPHIC (1060)
- HEMANGIOPERICYTOMA, LIVER, HYPOGLYCEMIA (8302)
- HEPATOMA, ANATOMOPATHOLOGY, DIAGNOSIS (9061)
- HEPATOMA, CHRYSOIDIN, TRANSPLANTABLE CROCKER SARCOMA, MICE (0558)
- HEPATOMA, RIBOSOMAL PROTEINS, ANTIGENIC PROPERTIES, RAT (7809)
- HEPATOSPLENOSCINTOGRAPHY, SHORT LIFE RADIOISOTOPES, CHILDREN (8755)
- ILEOCECAL VALVE ADENOCARCINOMA, CLINICAL PICTURE (0430)
- ILEOJEJUNAL, RECKLINGHAUSEN'S DISEASE, COMPLICATION (0370)
- INTRARECTAL TUMOR, ARTERIOGRAPHY, SURGERY (8953)
- LEIOMYOFIBROMA, SMALL INTESTINAL VOLVULUS, DIVERTICULUM PERFORATION (8912)
- LEIOMYOMA, INTESTINE, MASSIVE MELENA (8910)
- LEIOMYOSARCOMA, STOMACH, GASTROSCOPY, CELIAC ANGIOGRAM (8837)
- LIPOMA, CECUM, ANATOMOPATHOLOGY (8962)
- LYMPHORETICULAR, GASTROINTESTINAL TRACT (4608)
- MALIGNANT LYMPHOGRANULOMA, STOMACH, NOSOLOGY (8854)
- MALIGNANT TUMOR, EXTRAHEPATIC BILE DUCTS, OBSTRUCTIVE JAUNDICE (9179)
- MYOGENIC TUMORS, STOMACH, GASTROSCOPY, PATHOLOGY (8118)
- PANCREATICODUODENAL RESECTION, PROPHYLAXIS, PANCREATIC STUMP NECROSIS (9004)
- PERIAMPULLARY, PANCREATODUODENECTOMY (0297)
- PRIMARY, LIVER, CARCINOMA, SPONTANEOUS RUPTURE, HEMATOPERITONEUM (9056)
- PRIMARY CANCER, GASTRIC STUMP, GASTRECTOMY, ULCER (8872)
- PRIMARY CARCINOMA, LIVER, HYPERLIPEMIA ERYTHROCYTOSIS (9051)
- PRIMARY LIVER CARCINOMA, METASTATIC, RESECTION, CHILDREN (8300)
- PRIMITIVE LYMPHORETICULAR, STOMACH, LYMPHOBLASTOMA, RETICULOSARCOMA, LYMPHOGRANULOMA (0284)
- RETENTION POLYPOSIS, COLON, RECTUM, CHILDREN (8189)
- SCHWANNOMA, SMALL INTESTINE, ARTERIOGRAPHY, HISTOLOGY (8907)
- TERATOMA, STOMACH, NEWBORN (8847)
- TRANSPLANTABLE, ALKYL GLYCERYL ETHERS, HEPATOMA (4387)
- VILLOUS ADENOMA, POLYPOSIS, RECTOSIGMOID (8985)

NERVOUS CONTROL
- MESENTERIC ARTERY, PERIARTERIAL NERVE PERFUSION STUDY (0930)
- MOTILITY, ESOPHAGUS, DOG (0043)*
- STOMACH MOTILITY, BACTERIAL LIPOPOLYSACCHARIDE, ADRENALECTOMY, ADRENERGIC MECHANISM, PARASYMPATHETIC SYSTEM (3893)*

NERVOUS SYSTEM
- ABDOMINAL VAGOTOMY, CARDIA COMPETENCE, DUODENAL ULCER (6642)
- ADRENEGIC INNERVATION, CHROMAFFIN CELLS, HUMAN FETUS (6328)
- ADRENERGIC RECEPTOR, GASTRIC ULCER, ALPHA-RECEPTORS, BETA-RECEPTORS, PHENYLEPHRINE HYDROCHLORIDE, RAT (5021)
- ADRENERGIC RECEPTOR, PORTAL VEIN, MOTILITY, CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, THEOPHYLLINE (5627)*
- AUTONOMIC SYNDROME, ALPHA-ORYZANOL THERAPY, COLITIS (4325)
- CENTRAL, DEGENERATION, VITAMIN B6, GASTRIC RESECTION (3916)
- CENTRAL, FUNCTION PARTIAL GASTRECTOMY (1103)

- CHOLINERGIC ACTION, ILEUM (3131)
- CHRONIC HEPATIC, ENCEPHALOPATHY, LACTULOSE (6026)
- COLD DENERVATION (3833)
- CONTROL, COLON, PERISTALSIS, INNERVATION, DRUG EFFECTS, GANGLION BLOCKING AGENTS, INHIBITION (5508)*
- CONTROL, STOMACH, MOTILITY, SECRETION (5472)
- ENCEPHALOPATHY, HEPATIC INSUFFICIENCY (6024)
- ENCEPHALOPATHY, LIVER, PORTACAVAL SHUNT, ALCOHOLISM (6233)
- EXTRINSIC, COLONIC MOTILITY, BLOOD (3898)
- GASTRIC MOTILITY, VAGO-VAGAL REFLEX, INHIBITION (5520)*
- GASTROINTESTINAL NEUROFIBROMATOSIS, CHRONIC ANEMIA, HEMORRHAGE (6245)
- HEPATIC COMA, FLAPPING TREMOR, PYRAMIDAL SIGNS, CORTICAL LESIONS, AMMONEMIA, HEMORRHAGE (5217)
- HEPATIC ENCEPHALOPATHY, AMMONIA (6029)
- HEPATIC ENCEPHALOPATHY, SURGERY (6897)
- HYPOTHALAMIC, LESION, HYPERPHAGIA, STEATOSIS, OBESITY, LIVER HYPERTROPHY, GOOSE (5188)
- LIMBIC SYSTEM, CEREBRAL RELEASE, GASTRIC ACID INHIBITOR (6408)
- MYENTERIC PLEXUS, DISORDERS (6171)
- MYENTERIC PLEXUS, GUT MOTILITY (4634)
- NERVE CELL, TRACT WALLS, DIGESTIVE TRACT ACTIVITY (5637)
- NERVE PLEXUS, INTESTINAL INNERVATION, INNER MUSCLE LAYER, ULTRASTRUCTURE (4696)*
- NEURINOMA, PEDUNCOLATED, STOMACH (4987)
- NEUROPATHY, WILSON'S DISEASE, COPPER, CIRRHOSIS, LIVER, LENTICULAR DEGENERATION (6019)
- PACINIAN CORPUSCLE, BETA RADIATION, MESENTERY (4882)
- PELVIC PLEXUS, RECTUM AMPUTATION, CYSTOMETRIC EXAMINATION, HYPOTONUS, BLADDER PRESSURE (5095)
- PERIARTERIAL NEURECTOMY, HEMODYNAMICS, VASOMOTOR ACTION, LIVER (4874)
- PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)
- RECEPTOR SITES, STOMACH, SMOOTH MUSCLE MOTILITY, ALPHA RECEPTORS, BETA RECEPTORS, SYMPATHETIC STIMULATION (5518)*
- SELECTIVE, VAGOTOMY, GASTRODUODENAL ULCER, BILLROTH I RESECTION (5846)
- SENSORY-MOTOR DEGENERATION, OPHTHALMOPLEGIA, CELIAC DISEASE (3456)
- SYMPATHETIC AND PARASYMPATHETIC, REFLEX ACTIVATION, COLONIC BLOOD FLOW EFFECTS (3258)
- SYMPATHETIC BLOCK, COMMON BILE DUCT, CHOLEDOCHODUODENAL PASSAGE (6149)
- VAGOTOMY, DRUG EFFECT, GASTRIC LESION, ASPIRIN, 2-DEOXYGLUCOSE (5763)*
- VAGOTOMY, DUODENAL ULCER (7402)*
- VAGOTOMY, DUODENAL ULCER, SURGERY (5778)
- VAGOTOMY, DUODENUM, ULCER, PYLOROPLASTY (5842)
- VAGOTOMY, ESOPHAGUS, ELECTRICAL ACTIVITY, DEGLUTITION, GASTROESOPHAGEAL SPHINCTER (4789)*
- VAGOTOMY, GASTRIC ANALYSIS, STASIS, GASTRIC ULCER, HEMORRHAGE (5667)
- VAGOTOMY, GASTRIC EMPTYING (7082)
- VAGOTOMY, GASTRIC ULCER (7392)
- VAGOTOMY, GASTRODUODENAL ANASTOMOSIS, ANTRECTOMY, RADIOLOGY (6648)
- VAGOTOMY, HEMIGASTRECTOMY, PANCREAS (5954)
- VAGOTOMY, LIVER, CHOLELITHIASIS, CHOLECYSTECTOMY (5304)
- VAGOTOMY, LIVER, GALLBLADDER (5178)
- VAGOTOMY, PANCREATIC ACTIVITY, SECREIN STIMULATION, FLOW RATE, BICARBONATES, AMYLASE (5825)*
- VAGOTOMY, PEPTIC ULCER (7404)
- VAGOTOMY, POST-VAGOTOMY SYNDROME, DIARRHEA, GASTRIC (5375)
- VAGOTOMY, STOMACH, RESECTION, CANCER, ULCER, POLYP (5805)
- VAGOTOMY, STRESS ULCER, HEMORRHAGE, PYLOROPLASTY (5835)
- VAGOTOMY, ULCER, DUODENUM, PARIETAL CELL MASS (5030)
- VAGUS PRESERVATION, GASTRECTOMY (7366)
- VON RECKLINGHAUSEN'S DISEASE, MALIGNANT CARCINOID, AMPULLA OF VATER (6726)

NESIDIOBLASTOSIS
- PANCREAS, LEUCINE-SENSITIVE HYPOGLYCEMIA (2020)

NEURINOMA
- PANCREAS, ICTERUS, RESECTION, CHILD (4342)

NEURINOMATA
- SMALL INTESTINE, NEOPLASM (0384)

NEUROLOGICAL DISEASE
- PARTIAL GASTRECTOMY (1882)

NEUTROPENIA
- PANCREAS, IMMUNOGLOBIN (2605)

NICOTINE
- CHOLINERGIC EFFECT, BLOCKING AGENT, MECHANISMS (2360)
- LABELED, METABOLISM, LIVER, IN VITRO (0891)

NITROFURANTOIN
- TOXICITY, LIVER (1405)

NITROGEN
- FECES, FAT, PANCREAS (3282)
- POSITIVE BALANCE, ABDOMINAL OPERATION (2987)

NOREPINEPHRINE
- NITROGEN METABOLISM, ACETYLCHOLINE (3255)
- PROSTAGLANDIN E1, CIRCULATION, GASTRIC MUCOSA (2485)*
- PYRIDOXAL PHOSPHATE, ENZYMES, LIVER (7121)*
- STOMACH, MUSCLE LAYERS, MUCOSA, QUATERON ACTION, EPINEPHRINE (0073)
- STOMACH, NEUROGENOUS DYSTROPHY, DOPA, RESERPINE, ULCERATION (0329)

NORTRIPTYLINE
- PLASMA DISAPPEARANCE, STEROIDS, PERFUSED RAT LIVER, DOG (2457)

UCLEIC ACID
  AMINO ACID, LIVER, METABOLISM, ENZYME (1710)•
  DESOXYRIBO, RIBO, FETAL LIVER, COBALT RADIATION (5166)
  DESOXYRIBO, ULCERATIVE COLITIS, HYPERSENSITIVITY, ANTIBODY, AUTOLOGOUS LEUCOCYTES, SALAZOPYRINE, TISSUE DAMAGE (5132)
  DESOXYRIBOSE, ENZYME, INTESTINE, MUCOSA (4723)
  DESOXYRIBOSE, LIVER, PROTEIN, RAT (4718)
  DNA, HEPATOCYTE, EMBRYO, CYTOPLASM, MOUSE (6312)
  DNA, LIVER NUCLEI, DEGRADATION (6343)
  DNA, RNA, LIVER, 7, 12-DMBA, BENZOPYRENE (7563)
  DNA INJECTION, PERIARTERIAL NEURECTOMY, LIVER, HEPATOCYTE, NUCLEAR MEMBRANE (5203)
  DNA POLYMERASE, RNA POLYMERASE, CANCER (7137)•
  DNA SYNTHESIS, DUODENAL CRYPT CELLS, CHELATING AGENTS (7198)
  DNA SYNTHESIS, MITOCHONDRIA, LIVER, ENZYME (6474)
  GASTRIC ACANTHOMA, HISTOCHEMISTRY, FLUOROMICROSCOPY (0019)
  LIVER, PROTEIN SYNTHESIS (0726)•
  LIVER, RAT, HEPATECTOMY, REGENERATION (2468)
  LIVER MITOCHONDRIA, ENDOPLASMIC RETICULUM, PURIFICATION, PREPARATION, GUINEA PIG (4739)
  LYSOSOME, LIVER, TUMOR (1712)•
  NUCLEAR DNA, AGE FACTOR, FLUORESCENT EMISSION, DNA-PO4-GROUPS, GUINEA PIG (4715)
  NUCLEAR RNA, SYNTHESIS, LIVER, STERIGMATOCYSTIN, OROTIC ACID (5457)
  PREGNANCY, RAT, LIVER, NUCLEOTIDE, ENZYME (2469)
  RIBO-, LIVER, URIDINE, ETHANOL, PARENCHYMA, ADRENALECTOMY, RAT (5574)•
  RIBOSOMAL, RNA, LIVER, CORTISONE RAT (4824)•
  RNA, BREAKDOWN, LIVER, RAT, CORTISONE (4842)•
  RNA, CARCINOGENESIS, LIVER (0855)•
  RNA, DNA, HEPATOMA CELL, PHENETHYL, ALCOHOL, RAT (5989)•
  RNA, DNA TRANSCRIPTION, LIVER SUPERNATENT, POLYMERASE, TEMPLATE AFFINITY, ATP (4697)•
  RNA, LIVER, CELLS, FASTING, RAT (4702)•
  RNA, LIVER, PROTEIN SYNTHESIS, AMINO-ACID, INCORPORATION, SYNTHESIS INHIBITORS, RAT (5600)
  RNA, LIVER POLYRIBOSOMES, HOMOPOLYMERS, ADENINE, POLYNUCLEOTIDES, ACTINOMYCIN D (4699)•
  RNA, POLYDISPERSE, NUCLEOPLASMIC, SYNTHESIS, ACTINOMYCIN D, LIVER, RAT (2313)
  RNA, POLYNUCLEOTIDES, ADENINE, LIVER POLYRIBOSOME CARRIER RNA, ACTINOMYCIN K (4693)•
  RNA, REGENERATING LIVER, NUCLEAR TEMPLATE CAPACITY, CYCLOHEXIMIDE (4821)•
  RNA, RIBOSOMAL, TRANSFER, GENES, LIVER, RATS (1602)
  RNA, SYNTHESIS, CORTISOL BINDING, POLYMERASE, ACTINOMYCIN (4710)•
  RNA, SYNTHESIS, LIVER REGENERATION (5592)
  RNA TURNOVER, LIVER, PROTEIN-DEFICIENCY, RAT (5561)•
  SYNTHESIS, LIVER, CORTISONE (3051)
  T-RNA, ARGININE, INDOSPICENE, PROTEIN, LIVER, METABOLISM (5568)•
  TRYPTOPHANYL-TRNA, PANCREAS, PROTEIN CHROMOPHORES, SPECTROFLUOROMETRY, TRYPTAMINE (4738)
  28S RIBOSOMAL RNA, OLIGONUCLEOTIDES NOVIKOFF HEPATOMA (6817)

NUCLEOPROTEIN
  DNA, RNA, ANAL GLANDS, RABBIT, FEULGEN REACTION (6344)

NUCLEOSIDE
  ADENOSINE, ENZYME, LIVER, NUCLEOTIDE (4850)
  ADENOSINE 3'5' MONOPHOSPHATE, AMINO ACID TRANSPORT, LIVER SLICE (5493)•
  CYCLIC 3'5'-AMP, DIBUTYRYL 3'5'-AMP, MOTILITY, PORTAL VEIN, ADRENERGIC RECEPTOR (5627)•
  LIVER, ENZYME, INTERACTION (4862)
  URIDINE, RNA, LIVER, ETHANOL, PARENCHYMA, RAT (5574)•

NUCLEOTIDE
  ADENINE, ENZYME, LIVER, ADENOSINE (4850)
  ADENINE DINUCLEOTIDE PHOSPHATE, LIVER, REDOX STATE (1589)
  ADENINE NUCLEOTIDE SYSTEM, EQUILIBRIUM, ATP, ADP, LIVER, RAT (4733)
  ATP, LIVER, HEPATIC INJURY, CARDIOPATHOGENIC DIET, HISTOLOGY (5993)•
  ATP, PH, SODIUM BINDING, MAGNESIUM BINDING, CELLULAR MEMBRANE, EDTA, LIVER MICROSOME (5449)
  ATP, SMALL INTESTINE, TRANSMURAL POTENTIAL, ELECTROPHYSIOLOGY, SEROSA, MUCOSA (4760)•
  COMPOSITION, NUCLEOLAR 45 S RNA, AZO DYE-INDUCED HEPATOMA, RAT (3590)
  DIPHOSPHOGYRIDINE, LIVER, COENZYME (1726)
  ENZYME, LIVER, METABOLISM (2284)•
  GUANOSINE-3', 5'- MONOPHOSPHATE, INTESTINE (0911)•
  LIVER, NAD-NADH, NADP-NADPH, ETHANOL (7971)
  LIVER, SYNTHETASE, FATTY ACID (1778)
  MONO, ENZYMATIC FLUX RATES, LIVER, MOUSE (0819)•
  NADH OXIDATION, INHIBITION, N'-ALKYLNICOTINAMIDE CHLORIDE (7926)
  NUCLEOSIDE DI- AND TRI-PHOSPHATES, HYDROLYSIS BY PYROPHOSPHATASES, LIVER, YEAST (3200)
  OLIGO-, 28S RIBOSOMAL RNA, NOVIKOFF HEPATOMA, LIVER (6817)

- POLYVINYLPYRIDINE-N-OXIDE, BLOCKING EFFECT, SPLEEN/LIVER, RETICULOENDOTHELIAL CELLS, PHAGOCYTE ACTIVITY, RABBITS (4872)*
- PYRIDINE, ATP, PHOSPHOLIPID, SYNTHESIS (2416)*
- PYRIDINE, ENZYME, LIVER (1769)
- RIBONUCLEOSIDE TRIPHOSPHATE POLYMERIZATION INHIBITION, ALPHA-AMANITIN INJECTION (3180)
- TRNA METHYLASES, LIVER, RAT (6341)
- TYROSINE AMINOTRANSFERASE ACTIVITY (5562)*

NUCLEUS
- DNA, SYNTHESIS, LIVER (7145)*

NUTRITION
- CALORIC DEFICIENCY, RESTRICTION, NUCLEIC ACIDS, ZINC, MANGANESE, LIVER, RAT (4829)*
- CHRONIC CHOLESTASIS, BILIARY CIRRHOSIS (6047)
- COMMENCEMENT OF FEEDING, BLOOD BILIRUBIN LEVEL, PREMATURE INFANT (3213)
- DUODENAL ULCER (1149)
- EDEMA, LIVER FUNCTION (7000)
- FASTING, PANCREAS, SECRETION, ENZYME (4813)
- GASTROENTERITIS, ELECTROLYTE (5384)
- GASTROINTESTINAL CANCER (3759)
- INTESTINAL PARASITES, INCIDENCE, SOUTH CAROLINA, CHILDREN (3777)
- INTESTINE, SURGERY, RESECTION, NEONATE (4231)
- IRON (3742)
- KWASHIORKOR, ENXYME ACTIVITY, LIVER, CHILDREN (5394)
- LIVER DISEASE, NEONATE, CHILDREN (5996)
- MAL-, BIAFRAN CHILDREN, PROTEIN, ANEMIA, LIVER, SPLEEN, CARDIOPATHY, CONVULSIONS, BACTERIAL INFECTIONS (5340)
- MAL-, DIARRHEA, DIPHENOXYLATE HYDROCHLORIDE THERAPY, INFANT (6965)
- MAL-, DISACCHARIDES, INTESTINE, LACTASE, SUCRASE, MALTASE, RAT (5622)
- MAL-, PHYSICAL GROWTH (6968)
- MAL-, PROTEIN, MALABSORPTION, SMALL INTESTINE (5377)
- MAL-, PROTEIN, PANCREAS (5360)
- MAL-, PROTEIN, WEIGHT, HIGH MORTALITY, SENEGALESE CHILDREN (5349)
- PANCREATITIS (3531)
- PARASITISM, RURAL CHILDREN, ASCARIS LUMBRICOIDES, TRICHURIS TRICHIURA (6276)
- PARENTERAL (2998)
- PARENTERAL, DISEASE STATE (2983)
- PARENTERAL, GASTRIC ULCER, LIVER, PANCREAS, ADRENAL CORTEX (7407)*
- PARENTERAL, GASTROINTESTINAL DISEASE (2984)
- PELLETED DIET, ENERGY REQUIREMENT, MAGNESIUM, GASTRIC SECRETION, RABBIT (4879)
- RABBIT, MICROORGANISMS, COLON, PROTEIN, NITROGEN, VITAMINS, ENZYMATIC SECRETIONS (4886)*
- RICKETTS, JEJUNUM, DIVERTICULOSIS, MALABSORPTION, OSTEOMALACIA (5078)
- TRIGLYCERIDE, MILK FORMULA, LOW WEIGHT INFANT (2326)*
- TUBE FEEDING, CERVICAL ESOPHAGOSTOMY (1493)

OBESITY
- JEJUNOCOLOSTOMY (3428)
- JEJUNOILEOSTOMY, GLUCOSE, INSULIN (5865)
- LIVER CIRRHOSIS, ALCOHOLISM, ALKALINE PHOSPHATASE, PROGNOSIS (6888)
- LIVER HYPERTROPHY, HYPERPHAGIA, HYPOTHALAMIC LESION, GOOSE (5188)
- MORBID, JEJUNOILEAL SHUNT, VITAMIN A, VITAMIN C (5876)

OBIDOXIN
- TOXOGONIN, PARENCHYMAL DAMAGE, ALKALINE PHOSPHATASE (6467)

OBSTRUCTION
- ACUTE, SMALL INTESTINE, HISTOPLASMOSIS (1952)
- ACUTE INTESTINAL, SURGERY, CIRCULATION, RESPIRATORY INSUFFICIENCY, PNEUMONIA, SUPPURATION (2963)
- APPENDIX, FISTULA (3500)
- ARTERIOMESENTERIC, DUODENUM, CHILD (4176)
- CONGENITAL, NEWBORN INFANTS, SURGERY ENTEROANASTOMOSIS (0382)
- DUODENUM, AORTIC ANEURYSM (2601)
- DUODENUM, CHILDREN, INFANTS, EMBRYOLOGY, CONGENITAL (0287)
- GALLBLADDER, CHOLELITHIASIS (4542)
- GASTROINTESTINAL TRACT, ANASTOMOSIS, ULCER, IATROGENESIS, SURGERY (2959)
- ICTERUS, HEMATOIDIN, BILIRUBIN (3685)
- ILEUS, GASTRECTOMY, ORANGE PITH (1139
- INTESTINAL, CANCER (3714)
- INTESTINAL, CARDIAC PATIENT, SURGERY (9210)
- INTESTINAL, CONGENITAL, SURGICAL TREATMENT (2680)
- INTESTINAL, ETIOLOGY, MORTALITY (4606
- INTESTINAL, FLUIDS, ELECTROLYTES, MECHANICAL ADYNAMIC ILEUS (0369)
- INTESTINAL, LIVER, MICROSOME, ENZYME (1950)
- INTESTINAL, OBTURATOR HERNIA, MAN (1166)
- INTESTINAL, VOLVULUS, GALLSTONE, ILEUS, MEGACOLON (0705)
- INTESTINE, GYNECOLOGICAL DISEASE (1185)
- INTESTINE, INTESTINAL TUBE, TREATMENT (0391)
- INTESTINE, LARGE, CARCINOMA, DIAGNOSIS (0466)
- INTESTINE, MECKEL'S DIVERTICULUM, RADIOLOGY (3421)
- INTESTINE, SURGERY (7716)
- INTESTINE, SURGERY, GERIATRICS (4630)
- LARGE INTESTINE, HERNIA, IRREDUCIBLE (8121)
- MECKEL'S DIVERTICULUM, SURGERY, SMALL INTESTINE (3430)

- POSTOPERATIVE ADHESIVE INTESTINAL, CHILDREN (3727)
- PYLORIC, ''CRST'' SYNDROME (1866)
- RECURRENT ILEUS, STAPHYLOCOCCIC GASTROENTERITIS, RESPIRATORY DISTURBANCES (0364)
- SIGMOID COLON, CROHN'S DISEASE, ETIOPATHOGENESIS, THERAPY (0467)
- SIGMOID COLON, ENDOMETRIOSIS (1235)
- SMALL INTESTINE, APPENDECTOMY, NORMAL APPENDIX (1277)
- SMALL INTESTINE, APPENDICITIS (3499)
- SMALL INTESTINE, BARIUM, ORAL, DIAGNOSIS (0369)
- SMALL INTESTINE, DUODENOJEJUNAL JUNCTION (8076)
- SMALL INTESTINE, E. COLI, ENDOTOXIN, MICE (3245)*
- SMALL INTESTINE, ILEUS, GALLSTONE (2667)
- SMALL INTESTINE, NON-SUTURE PLICATION METHOD (0355)*
- SMALL INTESTINE, PARASITE, ILEUS (3016)
- SMALL INTESTINE, RADIOLOGY (1812)
- SMALL INTESTINE, SEROTONIN, MUCOSA (2659)*
- SMALL INTESTINE, SURGERY, ADHESION (2670)
- TUMOR, LIVER, CHOLEDOCHUS (4421)
- ULCER, SURGERY, PERFORATION (2645)
- UPPER GASTROINTESTINAL, ACUTE SUPERIOR MESENTERIC ARTERY SYNDROME, SEVERE BURNS (2211)
- VOLVULUS, COLONIC, BARIUM ENEMA, TREATMENT (0491)

CLUSION

- ACUTE, RECURRENCE (2208)
- CONGENITAL, ANNULAR PANCREAS, NEONATAL SURGERY (6640)
- DUODENUM, ARTERY (3358)
- DUODENUM, NEONATE (2617)
- ESOPHAGUS, NORMAL, ABNORMAL (4096)
- INTESTINAL, ATRESIA, ILEUS, INFANTS (9212)
- INTESTINAL, LIPID ABSORPTION (3874)
- INTESTINAL, OMENTUM, CONSTRICTION (4234)
- INTESTINAL, REANIMATION, PREOPERATIVE POSTOPERATIVE (1204)
- INTESTINAL, RETROPERITONEAL CYST, WOLFFIAN BODY, PAIN, LAPAROTOMY (2663)
- MEGACOLON, SIGMOIDITIS, PARALYTIC ILEUS, CARCINOMA, RECTOSIGMOID (0704)
- POSTOPERATIVE, SMALL INTESTINE, GASTRIC INTUBATION, ASPIRATION (6674)
- SMALL INTESTINE, RADIOGRAPHY, OPAQUE INDICATOR, DIAGNOSIS (0232)
- SUPERIOR MESENTERIC ARTERY, NON-OCCLUSIVE INTESTINAL GANGRENE (6938)*
- VASCULAR, SMALL INTESTINE, ISCHEMIA (2756)
- VEIN, DIAGNOSIS (3737)

I, SPHINCTER OF

- BILE DUCT, DUODENUM, CHOLANGIOGRAPHY, MOTOR ACTIVITY, PANCREATITIS (2914)
- INFLAMMATION, ASYMPTOMATIC CHOLECYSTOCHOLEDOCHOLITHIASIS, CHOLECYSTODUODENAL FISTULA (9194)
- LIVER, ATP-ASE, MG++ (7968)
- SPHINCTEROTOMY, ACUTE PANCREATITIS, PROPHYLAXIS, MORTALITY RATE (8258)
- SPHINCTEROTOMY, MAN (0665)
- STENOSIS (2935)

OPAQUE SUBSTANCE

- IODINIZED, BILIARY RADIOLOGY, ACCIDENT PREVENTION (3273)

OPTICAL DENSITY

- GASTRIC MUCOSA, ADENINE COMPOUNDS, FROG (3073)

ORGANISM

- ARIZONA, CHILDHOOD DIARRHEA, INDIA (1528)*

ORTHOPHOSPHATE

- TURNOVER, LIVER, EXTRACELLULAR AND INTRACELLULAR SPACE (0818)*

OSMORECEPTOR

- LIVER, OSMOLAR CLEARANCE, OSMOREGULATION (1701)*
- LIVER, VAGAL NERVE, AFFERENT DISCHARGES (0923)*
- SALINE INFUSION, LIVER, PORTAL BLOOD (1723)*

OSMOREGULATOR

- LIVER, OSMORECEPTORS, OSMOLAR CLEARANCE (1701)*

OSTEOARTHROPATHY

- HYPERTROPHIC, ETIOLOGY, DIAGNOSIS, TREATMENT, PORTAL CIRRHOSIS (2159)

OSTEOMALACIA

- DIAGNOSIS, CELIAC DISEASE (6685)*

OUABAIN

- PANCREAS, ENZYME SECRETION, ATPASE (0809)*
- WATER, ELECTROLYTE ABSORPTION, INTESTINE, RAT (2348)

OXIDATIVE PHOSPHORYLATION

- CARCINOMA CELL BIOCHEMISTRY, HYDOGEN-ION TRANSPORT, EHRLICH, ACITES TUMOR CELL (1774)
- ELECTRON TRANSPORT, LIVER, MITOCHONDRIA, HALOTHANE, RAT (1707)*
- LIVER, ATP-ASE, MG+ (7968)

OXYGEN

- AVAILABILITY, GLUCOSE TRANSPORT, SMALL INTESTINE (6361)
- CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, DUODENUM, PANCREAS (6507)
- CONSUMPTION, HYPOTHYROIDISM, SLOW WAVES, COLON, ILEUM, RABBITS (4786)*
- HYPOXIA, HYPEROXIA, ANOXIA, HEPATOCYTE (6849)
- HYPOXIA, RECTUM, MUCOSA, PROTON RADIATION, GAMMA RADIATION (5645)
- TENSION, GASTRIC WALL, INTESTINE (7053)
- UTILIZATION, LIVER, EXTERNAL PRESSURE (2459)

OXYGEN CONSUMPTION

- BLOOD FLOW, PERITONEUM, SPLANCHNIC FLOW (3739)

OXYGEN UPTAKE

- SMALL INTESTINE, GLUCOSE UTILIZATION, JEJUNUM (1587)

OXYURIS

- REINFESTATION, CHILDREN (3729)

PAIN
  ABDOMINAL, REFLUX, ESOPHAGITIS (6570)
  ABDOMINAL, SIGMOID DIVERTICULOSIS, AGED SUBJECTS, INFLAMMATION, PERFORATION (2740)
  ABDOMINAL, SURGERY (8438)
  ABDOMEN, ULCERS, DYSPEPSIA, HIATAL HERNIA (6551)
  ACUTE, ABDOMEN, ETIOLOGY, SYMPTOMATOLOGY (9238)
  CHRONIC, PANCREATITIS, SPLANCHNICECTOMY, FIBROSIS, SURGERY (6752)
  DIGESTIVE DISEASES, BP106 (4593)
  GASTRITIS, DOG (1862)
  GASTRODUODENAL, TREATMENT (0313)
PANCREAS
  ABERRANT, DUODENUM, CYSTIC DYSTROPHY (5147)
  ABSCESS, ACUTE PANCREATITIS (2029)
  ABSCESS, SERRATIA MARCESCENS, MAN (1341)
  ABSORPTION, ADVANCED AGE, DIGESTION (2964)
  ACINAR CELL, PENTAGASTRIN, RAT (8309)
  ACINAR CELL DIFFERENTIATION, EMBRYOS, ORGAN CULTURE, RATS (0749)•
  ACINAR-ISLET CELLS, ADULT CAT (3080)
  ACTINOMYCOSIS, LIVER (2842)
  ACUTE CHOLECYSTO-, PANCREATITIS, LIVER FUNCTION (5973)
  ACUTE DAMAGE, ALCOHOLISM (2021)
  ACUTE INFLAMMATION, TREATMENT (0521)
  ACUTE PANCREATITIS, ALCOHOLISM (5966)
  ACUTE PANCREATITIS, ALPHA AMYLASE, SERUM TRANSAMINASES (2027)•
  ACUTE PANCREATITIS, CELLULAR MECHANISM SUBCELLULAR MECHANISM (7513)
  ACUTE PANCREATITIS, CHRONIC, GLUCOSE TOLERANCE, LIPASE, AMYLASE (4938)
  ACUTE PANCREATITIS, CREATIVE PHOSPHOKINASE (5970)
  ACUTE PANCREATITIS, DIAGNOSIS (5713)
  ACUTE PANCREATITIS, DIAGNOSIS, MYOCARDIAL INFARCTION (5711)
  ACUTE PANCREATITIS, DIAGNOSIS, RADIOLOGY (4905)
  ACUTE PANCREATITIS, DUODENAL FISTULA, TRYPSIN INACTIVATOR (4981)
  ACUTE PANCREATITIS, ENZYMATIC TOXEMIA, DIALYSIS, HYPOTHERMY, DOG (5148)
  ACUTE PANCREATITIS, EXTRACORPOREAL CIRCULATION, DUODENAL ULCER (5967)
  ACUTE PANCREATITIS, HEMORRHAGE, ENZYMATIC TOXEMIA (5154)
  ACUTE PANCREATITIS, HYPOTHERMIA (5974)
  ACUTE PANCREATITIS, LIPASE, ANTITHROMBIN III, ENZYME INHIBITORS, APLANCHNIC BLOCK, HYPOTHERMIA (5163)
  ACUTE PANCREATITIS, POLYA GASTRECTOMY AFFERENT-LOOP OBSTRUCTION (1789)
  ACUTE PANCREATITIS, SERUM LIPASE DETERMINATION, DIAGNOSTIC VALUE (9012)
  ACUTE PANCREATITIS, SOLAR PLEXUS GANGLIA (5972)
  ACUTE PANCREATITIS, SURGERY, TREATMENT (5975)
  ACUTE PANCREATITIS, SURGICAL INTERVENTION (2797)
  ADENOMA, ARTERIOGRAPHY, DIAGNOSIS (4336)
  ALCOHOL, EXOCRINE, FUNCTION, ULTRASTRUCTURE, ACINAR CELLS (1580)•
  ALLOGRAFT, HEMODYNAMICS, DOG (0931)
  AMPULLA OF VATER, OBSTRUCTION, ABDOMINAL PAIN (6916)
  AMPULLA OF VATER, PANCREOZYMIN, BILE, PANCREATOGRAPHY (6516)•
  AMYLASE, SALIVA, REDUCING SUBSTANCE, GLYCOGEN (6418)
  AMYLASE ACTIVITY, LIVER, SERUM, FETAL RATS (8601)
  ANAPLASTIC CARCINOMA, INTESTINE, STOMACH (6970)
  ANEMIA, EXCRETION, EXOCRINE FUNCTION (1310)
  ANGIOGRAPHY, CANCER, PANCREATITIS, INSULINOMAS (0198)
  ANNULAR, ADULT, DUODENAL OBSTRUCTION, CONGENITAL ANOMALY (5956)
  ANNULAR, INTESTINAL OCCLUSION, SURGERY, NEWBORN (9006)
  ANNULAR, NEONATAL SURGERY, DUODENAL OCCLUSION (6640)
  ANOMALY, SURGERY, DIAGNOSIS, STENOSIS, ULCER (2782)
  ARTERIOGRAPHY, SCINTIGRAPHY, ANGIOSCINTIGRAPHY, CARCINOMA, SURGERY(4948
  ARTERIOGRAPHY, SCINTOGRAPHY, METHIONINE, PANCREATITIS (6562)
  ASCARIASIS, ACUTE ABDOMEN (7007)
  AUTOTRANSPLANT, CANCEROUS (4532)
  BIOPSY (4033)
  CALCIFICATION, ETIOLOGY, CEYLON (6750)
  CALCIFICATION, PROTEIN MALNUTRITION, NIGERIA (1319)
  CALCIUM EXCRETION, PANCREOZYMIN, DOG (8602)
  CANCER, ADENOMA, CHOLANGIOGRAPHY, ARTERIOGRAPHY, MICROSCOPIC EXAMINATION, SURGERY (5146)
  CANCER, AMPULLA OF VATER (4084)
  CANCER, ANASTOMOSIS, METASTASES, BIOPSY (5141)
  CANCER, CHRONIC LESIONS, DIABETES (2024)
  CANCER, ISLET CELL TUMOR, VATER'S PAPILLA, ADENOCARCINOMA (6744)
  CANCER, LUNG INVOLVEMENT, ESOPHAGEAL SYMPTOMS (9011)
  CANCER, PANCREATITIS, CHRONIC, ALCOHOLIC (6746)
  CANCER, SURGERY (7510)
  CANCER, SURVIVAL (4331)
  CARCINOMA, BIOPSY, DIAGNOSIS (1313)
  CARCINOMA, CHRONIC PANCREATITIS (2031)
  CARCINOMA, DIAGNOSIS, PREOPERATIVE, RETROSPECTIVE (8705)•
  CARCINOMA, DIAGNOSIS, RETROPERITONEAL GAS STUDY (2023)
  CARCINOMA, DUODENAL CYTOLOGY, SECRETIN (7221)•
  CARCINOMA, EARLY DIAGNOSIS, GASTROINTESTINAL ORGANS (0055)
  CARCINOMA, EARLY DIAGNOSIS, SURGERY (8239)
  CARCINOMA, 5-FLUOROURACIL, TELECOBALT (5136)•

ARCINOMA, IDIOPATHIC STEATORRHEA, GLUTEN-FREE DIET (6739)
ARCINOMA, LIVER METASTASES, FLUOROURACIL (6014)
ARCINOMA, PANCREATODUODENECTOMY, SURGERY, BYPASS OPERATIONS (5953)
ARCINOMA, SPECIFIC AND NON-SPECIFIC TESTS, SELENOMETHIONINE SCANNING (8039)
ARCINOMA, SYMPTOMS, RISING INCIDENCE (0501)
AUDA, FASCIAL FORMATIONS, PERITONEUM, SPLEEN (3090)
ELIAC DISEASE, ARTERIOGRAPHY, ISCHEMIA, ADENOPATHY, STENOSIS (5348)
ELLULAR MORPHOLOGY, BLOOD FLOW, ENZYMES, PANCREOZYMIN, ZYMOGEN (1572)*
HOLECYSTOKININ-PANCREOZYMIN, RECENT DEVELOPMENTS (3232)
HOLECYSTOPANCREATITIS, ACUTE, PRIMARY RECURRENT (5878)
HOLERAIC DIARRHEA, SECRETIN, GASTRIN, TUMOR, BLOOD, EXTRACT, BIO-ASSAY (6156)*
HROMOPHORES, INTRINSIC, EXTRINSIC, TRYPTAMINE, TRYPTOPHANYL-TRNA (4739)
HRONIC AND ACUTE PANCREATITIS, CARCINOMA, PSEUDOCYSTS, TRAUMA, ABDOMINAL PAIN, LAPAROTOMY, ABSCESS (5144)
HRONIC ASCITES, ALCOHOLICS, PSEUDOCYST (8243)*
HRONIC GASTRITIS, AMYLASE, LIPASE (7351)
HRONIC HEPATITIS, AMYLASE (4082)
RONIC PANCREATITIS, ADRENAL CORTEX, ADDISON'S DISEASE (7518)
RONIC PANCREATITIS, ALCOHOLISM, DIABETES (5157)
RONIC PANCREATITIS, BILE DUCT, ANASTOMOSIS, FIBROSIS, THORACIC SYMPATHECTOMY, SPLANCHIECTOMY (5162)
RONIC PANCREATITIS, BILIARY LITHIASIS, ANASTOMOSIS, WIRSUNG'S CANAL, CHOLANGIOGRAPHY (5151)
RONIC PANCREATITIS, DIAGNOSIS, MANAGEMENT (6760)
RONIC PANCREATITIS, LITHIASIS, DIET, RADIOLOGICAL EXAMINATION, GLUCOSE TOLERANCE, SURGERY (5962)
RONIC PANCREATITIS, PANCREOZYMIN-SECRETIN TEST (6757)
RONIC PANCREATITIS, RADIOLOGY (6759)
RONIC PANCREATITIS, SECRETION, HIGH-PROTEIN DIET (7519)
RONIC PANCREATITIS, SURGERY, HEMIPANCREATECTOMY, PAIN (5979)
YOSURGERY, PRIMATE (3527)
LTURE, METHIONINE, ULTRASTRUCTURE, ENZYME ACTIVITY, RAT EMBRYO (4701)*
CLIC AMP, THEOPHYLLINE, ENZYMES (6412)*
STIC ADENOMA, ADENOCARCINOMA (4334)
STIC FIBROSIS, CHROMOSOMES, DERMATOGLYPHICS DYSPLASIA, PERIPHERAL BLOOD (5138)
STIC FIBROSIS, FAT (4344)
CYSTIC FIBROSIS, GENETICS (6748)
CYSTIC FIBROSIS, H. INFLUENZAE (0500)*
CYSTIC FIBROSIS, INTESTINAL ATRESIA, MECONIUM ILEUS, PANCREATIC FUNCTION, MUCOVISCIDOSIS, NEWBORN INFANT (5063)
CYSTIC FIBROSIS, KALLIKREIN, SALIVA, URINE, PLASMA (1306)
CYSTIC FIBROSIS, MECONIUM ILEUS, INFANT, JAPAN (2672)
CYSTIC FIBROSIS, MUCOVISCOIDOSIS, THROMBOCYTOPENIA, INFANT (2770)*
CYSTIC FIBROSIS, VAS DEFERENS, FETUS (0509)
CYSTOADENOMA, SURGERY, ETIOLOGY (8228)
CYSTS, DIAGNOSIS ANALYSIS, CHILDREN (3517)
CYSTS, PSEUDOCYSTS, CYSTADENOMAS, PRESSURE, SURGERY, DRAINAGE, ANASTOMOSIS (5139)
CYSTS, PSEUDOCYSTS, RADIOLOGY, SURGERY, DRAINAGE (5140)
CYTOLOGY, NUTRITION, AGE (7103)
DEVELOPMENT, MORPHOLOGY (7780)*
DIABETES MELLITUS, FAT ABSORPTION, INSULIN (1624)*
DIABETES MELLITUS, HEPATOMEGALY, LIVER (2833)
DIABETES MELLITUS, MUCOVISCIDOSIS, CARBOHYDRATE METABOLISM (5959)
DIAGNOSIS, PALPATION, SURGERY (4903)
DIAGNOSIS, PSEUDOCYST, SURGERY (2775)
DIARRHEA, CHILD (4332)
DIGESTIVE SYNDROME, CYSTIC FIBROSIS (4335)
DISEASE, ARTERIOGRAPHY, DIAGNOSIS, MAN (0505)
DISEASE, CYSTIC FIBROSIS (4328)*
DISEASE, CYSTIC FIBROSIS, RECTAL MUCUS (4329)*
DISEASE, PLEURAL EFFUSION, ENZYME, COMPLICATIONS, SURGERY (5957)
DISEASE, RENAL ABNORMALITY (7507)
DISEASE, SCANNING, RADIOACTIVE SELENIUM (0208)
DISEASE, SECRETION, DIAGNOSIS (7285)
DISEASES, UNCOMMON (2771)
DISTAL DUCT, INFLAMMATION, SPHINCTEROPLASTY (7516)
DRAINAGE, WIRSUNG'S TECHNIQUE, ACUTE PANCREATITIS (9033)
DUCT, ELECTRICAL POTENTIAL, SECRETIN (3864)*
DUCT, SECRETION, CASEIN HYDROLYSLATE, FISTULA (5555)
DUCT LIGATION, IMMUNOFLUORESCENCE (0724)*
DUCT LUMEN, PATHOLOGY, PHYSIOLOGY (0528)
DUODENAL INJURY, PANCREATODUODENECTOMY (7509)
DUODENUM, CLOSED TRAUMA, SURGERY (8288)
EDTA-MED, LIVER, KIDNEYS, BLOOD SUGAR (5641)
ELASTASE, STRUCTURE, HOMOLOGOUS PROTEINASES (2361)*
ELECTRON MICROSCOPY, PANCREATIC DUCTS TOPOGRAPHY (0739)*

ENDOCRINE FUNCTION, CHRONIC PANCREATITIS, HISTOLOGY (8251)
ENDOSCOPY, CANCER (6519)*
ENDOTHELIUM, PERMEABILITY, HORSERADISH PEROXIDASE (4770)
ENZYME, AUTORADIOGRAPHY, HISTOLOGY, ADRENALECTOMY (8598)*
ENZYME, DYSENTROZYM, BACTERIOSTATICS, QUINOLINE DERIVATIVES (6417)
ENZYME, ISOLATION, PORCINE (1590)
ENZYME, MORPHOLOGY, EMBRYONIC (0748)*
ENZYME, PANCREATITIS, HEMORRHAGE, SERUM AMYLASE (6756)
ENZYME, PROTEIN, DIET (1573)*
ENZYME ACTIVITY, SOYBEAN FLOUR (6410)*
ENZYME SECRETION, ELECTROTHERAPY, CHRONIC GASTRIC DISEASE (6161)
ENZYME SECRETION, HALF LIFE (7880)*
ENZYME SECRETION, OUABAIN, ACETAZOLAMIDE, ATPASE (0809)*
ENZYME SECRETION, TRYPSIN INHIBITOR (3153)*
EROSION, GASTRODUODENAL ARTERY, PSEUDOCYST, HEMORRHAGE (0503)
ETHANOL, DL-ETHIONINE, PROTEIN DEFICIENCY, LEUCINE AMINOPEPTIDASE, RAT (1683)*
EXOCRINE, ELECTRON MICROSCOPY, COBALT CALORIDE (0743)*
EXOCRINE, ENDOCRINE, ELECTRON MICROSCOPY, LIGHT MICROSCOPY (4726)
EXOCRINE, GLUCAGON, SECRETION (3156)*
EXOCRINE, HISTOLOGY, HEDGEHOG, HIBERNATION (2320)
EXOCRINE, INSUFFICIENCY, GLUTENENTEROPATHY, PHYSIOPATHOLOGY (8169)
EXOCRINE, MALNUTRITION, PROTEIN (5360)
EXOCRINE, MORPHOLOGY, FERRIC CITRATE, LIPOMATOSIS (7790)*
EXOCRINE, MUCOVISCIDOSIS (3524)
EXOCRINE, PAROTID GLAND, FOOD REDUCTION, RAT (5556)
EXOCRINE, PATHOLOGY, CHRONIC DISORDER (1332)
EXOCRINE, SECRETION (0088)
EXOCRINE, SECRETION, ACROMEGALY (4343)
EXOCRINE, SECRETION, SECRETIN, PANCREOZYMIN (3289)
EXOCRINE, ULTRASTRUCTURE, HIBERNATING FROG (7793)*
EXOCRINE ACTIVITY, ISCHEMIA, EARLY CHANGES (1304)*
EXOCRINE FUNCTION, AUGMENTED SECRETIN TEST, DUODENAL BICARBONATES (8768)
EXOCRINE FUNCTION, BICARBONATE, ENZYME SECRETION, PROTEIN-CALORIE MALNUTRITION DISEASE (0807)*
EXOCRINE FUNCTION, DUMPING SYNDROME, GASTRIC RESECTION, ULCER (8130)
EXOCRINE FUNCTION, EXPERIMENTAL ISCHEMIA, HYDROPIC DEGENERATION (1305)*
EXOCRINE FUNCTION, MARASMUS, INFANTS (8426)
EXOCRINE FUNCTION, RADIO-OPAQUE MEAL, DIAGNOSIS (0972)
EXOCRINE INSUFFICIENCY, GLUTENENTEROPATHY (7450)
EXOCRINE SECRETION, ANTIHYPERTENSION AGENT, RAT (2491)
EXOCRINE SECRETION, METHODOLOGY (1690
EXPERIMENTAL ALLOGRAFT, NATURAL DEVELOPMENT, FUNCTIONAL AND MORPHOLOGICAL, ALTERATIONS (9007)
EXPLORATION, DUODENAL INTUBATION, MAN (8750)
EXTERNAL INSUFFICIENCY, GRANULOPENIA, BONE ANOMALY (3523)
FALSE CYST, CHRONIC PANCREATITIS, PLEURISY, PATHOGENESIS (9032)
FALSE CYST, COLON INVOLVEMENT, INTESTINAL OCCLUSION (8231)
FALSE CYST, MYOCARDIAL ISCHEMIA, GANGRENE OF LEG (9009)
FAST SCANNING (7214)*
FECES, FAT, NITROGEN (3282)
FIBROBLASTIC SARCOMA, HISTOLOGY, ETIOLOGY (8230)
FIBROCYSTIC DISEASE, NEW ZEALAND (2018)
FIBROSIS, TRANSFUSIONAL SIDEROSIS (0634)*
FISTULA, ACUTE VIRAL HEPATITIS (6094)
FISTULA, BICARBONATE RESPONSE, DUODENAL ACIDIFICATION (8552)*
FISTULA, GASTRIC SECRETION STIMULATIO (3147)
FISTULA, METABOLIC DISORDERS, PANCREATODUODENECTOMY (0508)
FISTULA, PANCREATIC JUICE, ELECTROLYTE EXCRETION (0083)*
FISTULAR, MANAGEMENT, SURGERY (3518)
FUNCTION, ALCOHOLIC CIRRHOSIS, SECRETIN, AMYLASE, LIPASE, PANCREOZYMIN (5278)
FUNCTION, AMYLASE, GLYCO-AMYLASE TEST (5728)
FUNCTION, CHOLELITHIASIS, SECRETION (6146)
FUNCTION, CHRONIC HEPATITIS, CIRRHOSIS, PROSERINE TEST, DIASTATIC CURV (6111)
FUNCTION, PROXIMAL GASTRIC RESECTION, GASTRIC FUNCTION, ABSORPTION (1020)
FUNCTION TESTS, ENZYME AND GLYCEMIC LOAD (3525)
FUNCTION TESTS, PANCREATITIS, ACUTE, CHRONIC, CARCINOMA, CYSTIC FIBROSIS (8040)
GLYCO-AMYLASE BLOOD TEST STUDY (3309)
HEAD, CARCINOMA, DIAGNOSIS (8241)
HEAD, CARCINOMA, OBSTRUCTION, GASTRECTOMY, PANCREATECTOMY, DUODENECTOMY (5955)
HEAD, CARCINOMA, SURGERY (4340)
HEAD, SURGERY, AMYLASE (3519)
HEMORRHAGIC PANCREATITIS, METHEMALBUMIN (7265)
HEMORRHAGIC PANCREATITIS, THORACIC DUCT, PROTEOLYTIC ENZYMES, LIVER, EDEMA, SECRETIN (5781)
HETEROTOPIA, PHYSIOPATHOLOGY, SURGERY (8235)
HETEROTOPIC, DUODENAL CARCINOMA, HISTOPATHOLOGY, PATHOLOGICAL ANATOMY (8848)

TEROTOPY, DUODENAL WALL, BILE DUCT
OBSTRUCTION (9178)
STOCHEMISTRY, ENZYME SECRETION
(2276)•
STOLOGY, ENZYME, DRUG EFFECTS (3158)
STOLOGY, METABOLISM, PROTEIN SECRE-
TION (0742)•
STOLOGY, ULTRASTRUCTURE, ISLET
CELLS, BETA CELLS, INSULIN ANTIBODY
(2780)
STOPATHOLOGY, CARCINOMA, FIBROSIS
(9002)•
HOTRANSPLANT, DOG (0089)
PERPARATHYROIDISM, SECRETIN-
PANCREOZYMIN, AMYLASE, LIPASE
6936)•
OKALEMIA, ZOLLINGER-ELLISON SYN-
ROME (2176)
UNOPATHOLOGY, ANTIGEN ADMINISTRA-
ION (1311)
UNOPATHOLOGY, EXCRETORY FUNCTION,
NTITISSUE ANTIBODY (1311)
LANTATION (8234)
LAMMATION, MAN (0520)
LAMMATORY DISEASE, ASCITES, TREAT-
ENT, THORACIC DUCT DECOMPRESSION,
YMPHATIC OBSTRUCTION (2785)•
URY, DIAGNOSIS, SERUM AMYLASE
8237)
UFFICIENCIES, EXTERNAL, INFANT
0507)
UFFICIENCIES, INFANT (0507)
UFFICIENCY, ENTEROKINASE, TRYPSIN,
HYMOTRYPSIN (8029)
UFFICIENCY, IMMUNOGLOBIN, NEUTRO-
ENIA (2774)
UFFICIENCY, MALABSORPTION, ENTER-
TIS (5076)
UFFICIENCY, PANCREATECTOMY, DOG
5137)•
ULAR CARCINOMA, HETEROTOPIA,
NTERIC SEQUESTRATION, SURGERY
6742)
ULIN STRESS, ALPHA-CELLS, ALKALINE
HOSPHATASE (0812)•
ET CELL, ADENOMA, HYPERINSULINISM
IAGNOSIS, TREATMENT (2019)
ET CELL TUMOR, ADENOMA, DIAGNOSIS,
REATMENT (1314)
ET CELL TUMOR, CHOLERA (6231)
ET CELL TUMOR, HYPOGLUCEMIC COMA,
EMIPLEGIA, EEG, CENTRAL PARALYSES,
OLBUTAMIDE TEST, ULCER, DIARRHEA
5952)
ET CELL TUMOR, ZINC CONTENT,
IABETES MELLITUS, BETA CELLS,
ISTOCHEMISTRY (3516)•
ET OF LANGERHANS, INSULIN, HIST-
LOGY (1685)•
ET OF LANGERHANS, ULTRASTRUCTURE,
SLET CELLS, ALLOXAN TOXICITY,
GRANULES, A GRANULES (1694)•
ETS, INSULIN, TOLBUTAMIDE, GAS-
RECTOMY (4207)
AMYLASES, AMINO ACID CONTENT
7030)•
CE, HUNGER, SECRETION, PANCREOZY-
IN (2363)

JUICE, PANCREATITIS, SERUM PROTEIN, TRYPSIN (5977)
JUICE COLLECTION, SURGERY (4772)
LESIONS, ACUTE PANCREATITIS, ANATOMOPATHOLOGY (9014)
LESIONS, CARCINOMA, PANCREATITIS (7216)•
LESIONS, LIQUID DIET, FLORA (8227)•
LIPASE, ACTIVITY DETERMINATION (4066)
LIPASE, ADSORPTION, SODIUM TAUROCHOLATE (6413)•
LIPASE, CORTISONE, FAT, RATS (5961)•
LIPASE, ELASTASE, CANCER, PANCREATITIS, ACUTE (0193)•
LIPASE, INHIBITION, PROTEIN FACTOR (6303)•
LIPASE, ISOLATION, PURIFICATION (2272)•
LIPASE, KINESIS, LIPID MONOLAYERS (3843)
LIPASE, TETRACYCLINE (4814)
LIPASE, TRIOCTANOIN (4817)
LITHIASIS (3526)
LITHIASIS, PANCREATITIS, SURGERY (3537)
LIVER, PATHOLOGY, SECRETIN TEST (1308)
LIVER, RADIOISOTOPES (0935)•
MALIGNANCY, CHILDREN (7506)
MALIGNANT TUMORS, IDENTIFICATION (0563)
METABOLISM, PROTEIN HYDROLYSATES, DOG (7104)
MITOCHONDRIAL VULNERABILITY, OXIDATIVE PHOSPHORYLATION, LIPID METABOLISM (0059)
MORPHOLOGY, HISTOCHEMISTRY, VACUOLATION, ACINAR CELL, RAT (3038)•
NEOPLASM, ANGIOGRAPHY, CELIAC AXIS (4019)•
NEURINOMA, ICTERUS, CEPHALOPANCREATECTOMY, CHILD (4342)
NUCLEAR SCINTOGRAPHY (4057)
O2 CONSUMPTION, ARTERIOVENOUS SHUNT, STOMACH, DUODENUM (6507)
PANCREATECTOMY, DUODENECTOMY, AVASCULAR CLEAVAGE, LIGATION (0323)
PANCREATECTOMY, HYPERINSULINISM (2016)
PANCREATECTOMY, INSULIN INFUSION, GLUCOSE TURNOVER (0813)
PANCREATECTOMY, PANCREATITIS (4357)
PANCREATECTOMY, 2-STAGE PROCEDURE, METABOLISM (9003)•
PANCREATIC-CHOLERA, PEPTIDE-SECRETION (5958)
PANCREATIC DUCT, HEMORRHAGE, ANGIOGRAPHY (2017)
PANCREATIC DUCT, INTRADUCTAL PRESSURE, PANCREATITIS, METHODOLOGY (2032)
PANCREATIC DUCT, OBSTRUCTION, MORPHOLOGY (0755)•
PANCREATIC DUCT, OPERATIVE INJURIES (2776)
PANCREATIC DUCT LIGATION, ULTRASTRUCTURAL DEGENERATION, ETHIONINE, METHIONINE, ACINAR CELL DEGENERATION (3034)•

PANCREATIC LIPASE, TRIGLYCERIDE, GOMORI TECHNIQUE, SPECIFICITY OF PANCREATIC LIPASE ACTIVITY (1687)*
PANCREATIC PSEUDO-CYST, RUPTURE, RADIOLOGY (5965)
PANCREATICODUODENECTOMY, TRAUMA (1316)
PANCREATITIS, ACUTE, BIOPSY (0525)
PANCREATITIS, ACUTE, PREGNANCY, SURGERY (2931)
PANCREATITIS, ACUTE, RECURRENT, BILIARY LITHIASIS (6754)
PANCREATITIS, ACUTE, RECURRENT, SERUM AMYLASE, HYPOTHERMIA (6756)
PANCREATITIS, ACUTE ABDOMINAL PAIN, CHOLELITHIASIS, SPASMOLYTIC, PYRAZOLONE DERIVATIVE, ANALGESIC (5369)
PANCREATITIS, ALBUMIN, AMYLASE (5156)
PANCREATITIS, AMYLASE, AUTOANALYZER, GLYCEMIA, DIAGNOSIS (4942)
PANCREATITIS, ANATOMICAL CHARACTERISTICS, CLASSIFICATION (0524)
PANCREATITIS, ANGIOGRAPHY, DIAGNOSIS (5729)
PANCREATITIS, BILIARY DUCT, PERFORATION, PERITONITIS, THROMBOSIS,, NECROSIS (5149)
PANCREATITIS, BILIARY LITHIASIS, AMYLASE, LIPASE, ABDOMINAL PAIN, LEUCOCYTES, HYPOCALCEMIA (5153)
PANCREATITIS, BILIARY TRACT, LYMPHATIC SYSTEM, COMMUNICATION (2786)*
PANCREATITIS, CELIAC TRUNK, FIBROSIS (5160)
PANCREATITIS, CHOLECYSTITIS, PERICARDITIS (3689)
PANCREATITIS, CHRONIC, DIAGNOSIS, TREATMENT PATHOGENESIS (2796)
PANCREATITIS, CHRONIC, SURGICAL TREATMENT (2028)
PANCREATITIS, CHRONIC, TREATMENT (8259)
PANCREATITIS, CHRONIC SURGERY (8246)
PANCREATITIS, DESOXYRIBONUCLEASE, DIAGNOSIS (0526)
PANCREATITIS, DIAGNOSIS, AMINO ACID ARYLAMIDASE, ISOENZYMES (0182)*
PANCREATITIS, DIURETIC (4356)
PANCREATITIS, DUCT SYSTEM, RADIOGRAPHY (6749)*
PANCREATITIS, ENZYME, DIAGNOSIS (3283)
PANCREATITIS, ENZYME ACTIVATION, SECRETION (5971)
PANCREATITIS, ETIOLOGY, NUTRITION (3531)
PANCREATITIS, FUNCTIONAL DIAGNOSIS, SECRETIN, AMYLASE, LIPASE, ACUTE ABDOMEN, DUODENAL JUICE, STOOLS (5666)
PANCREATITIS, GASTRODUODENAL ULCER, HEMORRHAGE, BLOOD TRANSFUSION (4994)
PANCREATITIS, HEMORRHAGIC PSEUDOCYST (5976)
PANCREATITIS, HYPERPARATHYROIDISM (2794)
PANCREATITIS, INTERNAL BURN, PERITONEAL DIALYSIS, SHOCK, TRYPSIN INHIBITORS, AMYLASE (5150)
PANCREATITIS, JEJUNAL INFARCTION, COMPLICATION (5968)
PANCREATITIS, LYSOSOMAL PROTEASES (7512)
PANCREATITIS, MEDICAL TREATMENT, SURGERY (2778)
PANCREATITIS, MEXASE, COLON, BILIARY TRACT (5356)
PANCREATITIS, OSTEOMALACIA, BLIND LOOP SYNDROME, MALABSORPTION (5159)
PANCREATITIS, PATHOLOGY (0519)
PANCREATITIS, PATHOPHYSIOLOGY, PHARMACOTHERAPY (5964)
PANCREATITIS, PREGNANCY, DIABETES, CHILDREN (5161)
PANCREATITIS, PROTEIN SYNTHESIS (4345)*
PANCREATITIS, SCORPION STING (5158)
PANCREATITIS, SECRETIN-PANCREOZYMIN TEST, SECRETORY FUNCTION (0514)
PANCREATITIS, SECRETION, PRESSURE, CAT (3154)*
PANCREATITIS, SERUM LIPASE, SERUM AMYLASE (4015)*
PANCREATITIS, SPHINCTER OF ODDI (5969)
PANCREATITIS, SPLENIC COMPLICATIONS, CLINICAL MANIFESTATIONS (0511)*
PANCREATITIS, SULFONAMIDES (2030)
PANCREATITIS, SURGERY, GALLSTONES, NECROTIC LESIONS, X-RAY TREATMENT, PERITONEAL DIALYSIS (5152)
PANCREATITIS, SYMPTOMS (0527)
PANCREATITIS, TRANSVERSE AXIAL STRATIGRAPHY, ANATAMO-RADIOLOGIC CORRELATIONS (2798)
PANCREATITIS, UROLITHIASIS, BLOOD GROUP (6937)*
PANCREATITIS, VASCULATURE, BILE (1325
PANCREATODUODENECTOMY, HERKSHEIMER-MANSFELD PHENOMENON (0303)
PANCREATODUODENECTOMY, PERIAMPULLARY CARCINOMA (0297)
PANCREATOLITHIASIS, PANCREATITIS, RADIOLOGY (4337)
PANCREOZYMIN, SECRETIN (0811)*
PANCREOZYMIN, TRYPSIN, SECRETIN, BICARBONATE (0963)
PARATHYROID, SCANNING, STAINING AGENT ANALOGS, DOG (5650)*
PARENCHYMATOUS CARCINOMA, PALLIATIVE SURGERY, SURVIVAL (1317)
PARTIAL PANCREATECTOMY, TRANSPLANTABLE PITUITARY TUMORS, HORMONALLY INDUCED DIABETES, SPLANCHNOMEGALY, RAT (1691)
PATHOLOGY, CYSTIC FIBROSIS, ULTRASTRUCTURE, FIBROBLASTS (2769)*
PATHOLOGY, DIAGNOSIS, CLINICAL SIGNIFICANCE (1312)
PATHOLOGY, DIAGNOSIS, ENZYMES, SERUM VALUES (6548)
PERFUSION, SECRETIN, DOG (6414)
PERFUSION STUDY, OUTPUT (3266)*
POSTOPERATIVE, PANCREATITIS, NECROSIS GASTRIC RESECTION, DUODENAL ULCER, CARCINOMA (5155)
PROTEIN-DEFICIENT DIET, ENZYME ACTIVITY, KWASHIORKOR (1151)*

ROTEIN SECRETION, FERRETS, RATS (0808)•
ROTEOLYTIC ENZYMES (0087)
ROTEOLYTIC ENZYMES, PURIFICATION, FIN WHALE (0815)
SEUDOCYST (8233)
SEUDOCYST, ACUTE PANCREATITIS, LITHIASIS, HYDATIC CYST (6745)
SEUDOCYST, CYSTOGASTROSTOMY, HEMORRHAGE (4341)
SEUDOCYST, FALSE ANEURYSM OF HEPATIC ARTERY, SURGERY (8236)
SEUDOCYST, HEMOBILIA, HEMORRHAGE (7508)
SUEDOCYST, LEIOMYOBLASTOMA (0698)
SEUDOCYST, POSTPANCREATITIS, POSTTRAUMATIC, ANASTOMOSIS (2779)
SEUDOCYST, POSTTRAUMATIC, GASTROINTESTINE, BLEEDING (4333)
SEUDOCYST, RUPTURE, DUODENUM (1315)
SEUDOCYST, SURGERY, LITHIASIS, PORTAL HYPERTENSION (6745)
UNCTURE BIOPSY, OBSTRUCTIVE JAUNDICE (3676)
ADIOISOTOPE SCAN (7293)
ADIOLOGY, ANGIOGRAPHY, ARTERY OCCLUSION, BALLOON CATHETER (3262)•
EGENERATION, DEGENERATION, HISTONE, CHANGES (5553)•
ESPONSE, INTESTINAL ACIDIFICATION, BICARBONATE (8597)•
IBONUCLEASE, ALKYLATION, BROMOACETATE (2307)
IBONUCLEASE, PH, BROMOACETATE (2306)
IBONUCLEASE, PRIMARY STRUCTURE, DISULFIDE BOND, PIG (2316)
IBONUCLEASE, PROTEIN, BOVINE (4750)
NA HISTOCHEMISTRY, LIVER, ETHIONIN TOXICITY (3836)
UPTURE, ABDOMEN, SURGERY, ANTIBIOTIC, CLOSED TRAUMA (2783)
UPTURE, PANCREATECTOMY, HEMORRHAGE, WIRSUNG CANAL (6743)
CAN, LIVER (4749)
CANNING, IMAGE SEPARATION, DATA PROCESSING, LIVER (5652)•
CANNING, LABELED SELENOMETHIONINE, PANCREATIC FUNCTION (2025)
CANNING, PANCREATITIS, PSEUDOCYSTS, TUMORS (6535)
CINTIGRAPHS, SELENIUM-LABELED METHIONINE (0196)•
CINTIGRAPHY, DIAGNOSTIC PROCEDURE (1307)
CINTIGRAPHY, LIMITATIONS, CHRONIC PANCREATITIS (8751)
CINTIGRAPHY, PANCREATITIS, PANCREATIC TUMOR (8737)
CINTILLOGRAPHY, SURGERY, DRAWBACKS (8015)
ECONDARY, PANCREATITIS, ACUTE, PARATHYROID ADENOMA (2795)
ECRETIN (3921)
ECRETIN, CYCLIC AMP, SECRETION (1689)
ECRETIN, HYDROCHLORIC ACID SECRETION (2385)
ECRETIN, STOMACH, INTESTINE, BICARBONATE RESPONSE (3228)•
SECRETION, ACETYLCHOLINE, VICHY WATER, AMYLASE (6416)
SECRETION, AMYLASE (4816)
SECRETION, BICARBONATE, MAXIMAL (3925)
SECRETION, BILE SALTS (7881)•
SECRETION, CAPILLARY, MORPHOLOGY (0736)•
SECRETION, CERULEIN, ACIDITY, PEPSIN (7877)•
SECRETION, CERULEIN, BILE (7878)•
SECRETION, CHOLECYTOKININ, PANCREOZYMIN (7882)
SECRETION, CHOLELITHIASIS, GALLBLADDER (5329)
SECRETION, CIRCULATION, SECRETIN, URECHOLINE, PANCREOZYMIN, PENTAGASTRIN, CARDIAC OUTPUT (3152)•
SECRETION, COLLECTION, CANNULA (7101)•
SECRETION, DRUGS, REGULATION (7879)•
SECRETION, ELASTASE, DRUG EFFECT (2364)
SECRETION, ENZYME, PERFUSION, AMINO ACID (6409)•
SECRETION, ENZYME, PROTEIN-CALORIE MALNUTRITION (4327)•
SECRETION, ENZYME, SURGERY, CHRONIC PANCREATITIS (2788)
SECRETION, EXOCRINE, ENZYME, GLUCAGON, GLUCOSE (5552)•
SECRETION, FASTING, ENZYME (4813)
SECRETION, INHIBITION, HYPERLIPOPROTEINEMIA (4359)
SECRETION, LIPASE, TRIBUTYRINE (4815)
SECRETION, MODIFIERS, BLOOD SUGAR, NAHCO3 (3924)
SECRETION, NERVOUS CONTROL, BICARBONATE, ENZYME, ACETYLCHOLINE (1686)•
SECRETION, NERVOUS CONTROL, PANCREOZYMIN, CIRCULATION, HORMONE (1688)•
SECRETION, PEPTIC ULCER, STOMACH, DUODENUM (5843)
SECRETION, PEPTIDE, STOMACH (2481)•
SECRETION, PROTEIN, TRYPSIN (3854)
SECRETION, RENAL DISEASE, AMYLASE, BICARBONATE, LIPASE, PANCREOZYMIN, SECRETIN (4330)•
SECRETION, SECRETIN, JEJUNAL ACIDIFICATION, BICARBONATE OUTPUT, VOLUME FLOW (3903)•
SECRETION, VAGAL STIMULATION, DOG (3157)
SEPTIC ABSCESS, TOXIC ABSCESS, ACUTE PANCREATITIS, SURGERY, MORTALITY (8248)
SPHINCTER PRESSURE, DOG, STOMACH DISTENTION (5522)
STANDARD RADIOLOGY, CRITICAL EVALUATION, GASTRODUODENAL AND BILE DUCT RADIOGRAPHY (8734)
STASIS, HEART FAILURE, CIRRHOSIS, LIVER (1321)
STIMULATION, BLOOD ENZYME LEVEL, HISTOLOGY (1693)
SUBCUTANEOUS RUPTURE (7365)
SUBDIAPHRAGMATIC VAGOTOMY, ULCER, SECRETIN, SECRETION (5825)•
SURGERY (0506)
SURGERY, CHRONIC PANCREATITIS, DRAINAGE, CIRRHOSIS (6758)

- SURGERY, MAN (0504)
- SURGERY, PAPILLOTOMY, TRANSDUODENAL SPHINCTEROTOMY (1956)
- SYSTEMIC STEATONECROSIS (3521)
- THIAMINE PYROPHOSPHOKINASE, THIAMINE ABSORPTION, PHOSPHORYLATION, TRANSKETOLASE, THIAMINE PYROPHOSPHATE (5143)
- TOTAL PANCREATECTOMY, HYPOGLYCEMIA HORMONE REPLACEMENT (1692)
- TRANSPLANT (3926), (3927), (3928)
- TRANSPLANT, DOG, IMMUNOSUPPRESSIVE (2362)
- TRANSPLANT, HETERTROPIC (0086)
- TRANSPLANT, TECHNIQUE (0510)
- TRANSPLANTATION, ALLOGRAFTS, ISLET CELL FUNCTION, NEPHROPATHY (6736)
- TRANSPLANTATION, REJECTION (3923)
- TRAUMA, CELIAC ARTERIOGRAPHY, SUPERIOR MESENTERIC ARTERIOGRAPHY (8765)
- TRAUMA, CONTUSION, RUPTURE, PSEUDOCYST (6741)
- TRAUMA, DIAGNOSIS, THERAPY (9008)
- TRAUMA, FISTULA, PANCREATO-DUODENECTOMY, PSEUDOCYSTS, RUPTURE, AORTOGRAPHY (5142)
- TRAUMA, PHYSIOPATHOLOGY, SURGERY (9013)
- TRAUMA, POSTOPERATIVE PANCREATITIS, BILIARY AND GASTRIC SURGERY (8252)
- TRAUMA, SURGERY, ASSOCIATED ORGANS (8232)
- TRAUMA, TRANSECTION, SPLENECTOMY (4339)
- TRAUMATIC PANCREATITIS, MAN (1342)
- TRYPSIN INHIBITOR, DOG (7102)
- TRYPSIN INHIBITORS, ISOLATION, PIG (0085)*
- TRYPSIN INHIBITORS, KALLICREIN, HUMAN SERUM (6415)
- TUMOR, BILIARY-JEJUNAL BYPASS, JEJUNUM BILE DUCT (5300)*
- TUMOR, DIAGNOSIS (7241)
- TUMOR, DIAGNOSIS, PAIN (8242)
- TUMOR, DIAGNOSIS, ULTRASOUND (8053)
- TUMOR, ENDOCRINOPATHY, STATUS (0708)
- TUMOR, HISTOLOGY, DIARRHEA, EARLY DIAGNOSIS, SELENOMETHIONINE SCAN (8238)
- TUMOR, HYPOGLYCEMIA, HYPERINSULINISM, COMA (6747)
- TUMOR, ISLET CELL (1314)
- TUMOR, ISLET CELL, HORMONE (2772)
- TUMOR, NONBETA ISLET CELL, DIARRHEAL SYNDROME (3520)
- TUMOR, PORTAL VARICES, GI HEMORRHAGE (8226)*
- TUMOR, SCLEROSIS (5181)
- TUMOR, SURGICAL DIFFERENTIATION (8240)
- TUMOR, ULCEROGENIC (2022)
- TUMOR, ZOLLINGER-ELLISON SYNDROME, ACHLORHYDRIA, ATROPHIC GASTRITIS (1887)
- TUMOR, ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS (2235)
- TUMOR, ZOLLINGER-ELLISON SYNDROME, PEPTIC ULCER, ENDOCRINOPATHY (1524)
- TUMOR, ZOLLINGER-ELLISON SYNDROME, SURGICAL TREATMENT (2202)
- TUMOR, ZOLLINGER-ELLISON SYNDROME, TOTAL GASTRECTOMY (2240)
- TUMOR SURGERY, ZOLLINGER-ELLISON SYNDROME, ANTICHOLINERGICS (8479)
- ULTRASTRUCTURE, ACINOCYTES, CISTERNAE (0744)*
- VAGOTOMY, PARTIAL GASTRECTOMY (5954)
- VASCULARIZATION, LIVER, COLON, SURGERY, CELIAC TRUNK (5145)
- VIRAL HEPATITIS, DIABETES MELLITUS, ETIOLOGY (8362)
- WEBER CHRISTIAN SYNDROME, PHYSIOPATHOLOGY (9010)
- ZOLLINGER-ELLISON SYNDROME, BROCRESINE, GASTRIC SECRETION (6214)
- ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS (2773)
- ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS BIOASSAY, GASTRIN (4921)
- ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS POLYENDOCRINOPATHY (1520)
- ZOLLINGER-ELLISON SYNDROME, GASTRECTOMY (2613)
- ZOLLINGER-ELLISON SYNDROME, GASTRIC SECRETION, ULCER (3265)*
- ZOLLINGER-ELLISON SYNDROME, GASTRIN BIOASSAY (0933)*
- ZOLLINGER-ELLISON SYNDROME, ISLET CEL TUMOR, GASTRIN, DIARRHEA (5381)
- ZOLLINGER-ELLISON SYNDROME, SECONDARY AMENORRHEA, FATAL OUTCOME (2210)
- ZOLLINGER-ELLISON SYNDROME, TUMOR (7747)

PANCREATECTOMY
- HYPERINSULINISM, PANCREAS (2016)
- HYPERTROPHIC PANCREATITIS, PLEURAL ENZYME EFFUSION (8256)
- PANCREATITIS (4357)
- RUPTURE, PSEUDOCYST, DRAINAGE, EXCISION (6741)
- SURGERY, FRACTURE, HYPOGLYCEMIA, DIET, LIPID, GLUCAGON (2781)

PANCREATIC DISEASE
- ANGIOGRAPHY, DIAGNOSIS, SECRETIN (2768)*
- ENZYME AND GLYCEMIC LOAD TESTS (3525
- PANCREATITIS, ACUTE AND CHRONIC, CARCINOMA, GLUCOSE, INSULIN (1333)
- TEST, VITAMIN A ABSORPTION (3267)*
- UNCOMMON (2771)

PANCREATIC DUCT
- CANNULATION, PANCREATIC SECRETION (7101)*
- HEMORRHAGE, ANGIOGRAPHY, PANCREAS (2017)
- ISCHEMIA, EARLY CHANGES, EXOCRINE ACTIVITY (1308)
- OPERATIVE INJURIES (2776)

PANCREATICOJEJUNOSTOMY
- PANCREATITIS, CHRONIC, ALCOHOLIC, CANCER (6746)

PANCREATITIS
- ACUTE, ABDOMEN, ATHEROSCLEROSIS (768
- ACUTE, ALPHA AMYLASE, SERUM TRANAMINASES, ENZYMES (2027)*
- ACUTE, AMYLASE, LIPASE, TRYPSIN, SER
(7257)
- ACUTE, AMYLASE DETERMINATION, EARLY LAPAROTOMY, DIAGNOSTIC VALUE (8738

CUTE, ANTICOAGULANTS (3535)
CUTE, BILIARY DISEASE, BILIARY SURGERY (1340)
CUTE, BILIARY LITHIASIS (1334)
CUTE, BLOOD, PROTEIN, TRYPSIN (2787)
CUTE, BLOOD FLOW, EDEMA, VASO-DILATATION (6753)
CUTE, CATIONIC METABOLISM DISORDERS (3536)
CUTE, CHOLELITHIASIS, FATTY NECROSIS, INTRAABDOMINAL (6751)
CUTE, CHRONIC, FUNCTIONAL TESTS, PANCREATIC CARCINOMA, CYSTIC FIBROSIS (8040)
CUTE, CHRONIC, PSEUDOCYSTS, SE75 BILIARY LITHIASIS (6754)
CUTE, DESOXYRIBONUCLEASE, DIAGNOSIS (0526)
CUTE, DIAGNOSIS, CHILDREN (1343)
CUTE, DIURETIC (4356)
CUTE, DRAINAGE, WIRSUNG'S TECHNIQUE (9033)
CUTE, DUODENAL NECROSIS (1335)
CUTE, EARLY DEVELOPMENT, SURGERY, CHOLELITHIASIS (9029)
CUTE, EDEMA, NECROSIS, SURGERY (8257)
CUTE, ELEVATED SERUM AMYLASE, DIAGNOSIS (0276)
CUTE, EMERGENCY PANCREATECTOMY, ANATOMOPATHOLOGY, INDICATIONS (9028)
CUTE, ETIOLOGY, MORTALITY, SURGERY (8248)
CUTE, FAT NECROSIS, ISCHEMIA, PANCREATIC ENZYMES (8261)
CUTE, GASTRIC ULCER PERFORATION, DIFFERENTIAL DIAGNOSIS (7234)
CUTE, HEART COMPLICATIONS (4352)
CUTE, HEMODYNAMICS, TRYPSIN, SHOCK (7515)
CUTE, HEMORRHAGIC, INTRADUCTAL PANCREATIC PRESSURE, METHODOLOGY (2032)
CUTE HEMORRHAGIC, PLASMA KININS (4358)
CUTE, HYPERLIMEMIA, DIABETES MELLITUS (0515)
CUTE, HYPERPHOSPHATURIA, HYPOCALCEMIA (0516)
CUTE, INTRALUMINAL DIVERTICULUM, DUODENUM, PHYSIOPATHOLOGY (0335)
CUTE, INTRAVASCULAR COAGULATION, HEPARIN-RELIEVED ANURIA (3540)
CUTE, LIPID METABOLISM (3534)
CUTE, LOCAL GASTRIC HYPOTHERMIA (1331)
CUTE, METABOLIC, VIRAL, ALLERGIC (9017)
CUTE, MYOCARDIAL INFARCTION, ENZYMATIC TOXEMIA (2791)
CUTE, PANCREAS, ABSCESS (2029)
CUTE, PANCREATIC ABSCESS, ANATOMOPATHOLOGY, SURGERY (9014)
CUTE, PATHOGENESIS, BILE (8244)
CUTE, PATHOGENESIS, DIAGNOSIS, PROGNOSIS (9024)
CUTE, PATHOGENESIS, TRYPSIN (7514)
CUTE, PEDIATRICS (1328)
CUTE, PERITONEAL CAVITY, DRAINAGE, HEMORRHAGE, NECROSIS (2790)
ACUTE, PLEURAL ENZYME EFFUSION, CONSERVATIVE AND SURGICAL TREATMENT (8256)
ACUTE, RECURRENT, POSTOPERATIVE, METHIONINE (6535)
ACUTE, RECURRENT, SERUM AMYLASE, MICROCIRCULARY DYNAMICS (6756)
ACUTE, SCINTIGRAPHY, LABELED SELENIOMETHIONINE (8732)
ACUTE, SELECTIVE HYPOTHERMIA, ABDOMEN (7206)
ACUTE, SELENIUM METHIONINE, SCANNING, PROGNOSIS (8044)
ACUTE, SERUM METHEMALBUMIN (7521)
ACUTE, SHOCK, HEMODYNAMIC ALTERATIONS, THERAPY (9035)
ACUTE, SPHINCTER OF ODDI, PROPHYLAXIS, MORTALITY RATE (8258)
ACUTE, SURGERY (3511)
ACUTE, SURGICAL INTERVENTION (2797)
ACUTE, SYSTEMIZATION, PATHOLOGY (0519)
ACUTE, THROMBOSIS, ENZYMATIC TOXEMIA, HEART, LUNG, LIVER, KIDNEY (2789)
ACUTE, TRANSLUMBAR AORTOGRAPHY (4348)
ACUTE, TRASYLOL, THERAPY (1339)
ACUTE, TREATMENT (0521), (4349)
ACUTE, TREATMENT, TRASYLOL ADMINISTRATION, RADIOLOGY (4354)
ACUTE, XYLAMIDE, ANTISECRETORY-ANTIGASTRIN (4350)
ACUTE HEMORRHAGIC, PLASMA KININS, FORMATION AND DESTRUCTION, DOG (2026)•
AEROBIC AND ANEROBIC BACTERIAL FLORA (3538)
AFFERENT-LOOP OBSTRUCTION, POLYA GASTRECTOMY (1872)
ALCOHOLIC, BILIARY, IDIOPATHIC VASCULAR, SURGERY (8253)
ALCOHOLIC, CHRONIC, SURGERY (4355)
ALCOHOLIC, ETIOLOGY, PATHOGENESIS, HISTOLOGY (8245)
BILE DUCT, SPHINCTER OF ODDI, DUODENUM, CHOLANGIOGRAPHY, MOTOR ACTIVITY (2914)
BILE-INDUCED, PANCREAS, VASCULATURE (1325)
CALCAREROUS, P/CA METABOLISM, HYPERPARATHYROIDISM (4351)
CALCIFYING, LITHIASIS, SURGERY (3537)
CHOLECYSTITIS, LIVER HISTOCHEMISTRY (8254)
CHOLECYSTITIS, PERICARDITIS (3689)
CHRONIC, ACUTE, CANCER, DIAGNOSIS (2522)
CHRONIC, ALCOHOLISM, RADIOLOGY, BILIARY TRACT DISEASES (9016)
CHRONIC, ANATOMICAL CHARACTERISTICS, CLASSIFICATION (0524)
CHRONIC, ANATOMOPATHOLOGY, PATHOGENESIS, TRYPTIC NECROSIS (9025)
CHRONIC, ARTERIOGRAPHY, SCINTOGRAPHY, SELENOMETHIONINE (6562)
CHRONIC, CALCIUM ABSORPTION, DIGESTIVE TRACT DISEASES (0035)
CHRONIC, CANCER, PANCREATICOJEJUNOSTOMY, WIRSUNG'S DUCT (6746)
CHRONIC, CARCINOMA, PANCREAS (2031)

CHRONIC, CHOLECYSTECTOMY, VIRAL HEPATITIS, GASTRIC ULCER (7522)
CHRONIC, CHOLECYSTIC, LIVER, MORPHOLOGY, BILE DUCT ALTERATIONS (8407)
CHRONIC, DIABETES, INSULIN LEVEL, BLOOD GLUCOSE (3528)•
CHRONIC, DIABETES MELLITUS (8247)
CHRONIC, DIAGNOSIS, GLUCOSE TOLERANCE TEST (6523)•
CHRONIC, DIAGNOSIS, TREATMENT, PATHOGENESIS (2796)
CHRONIC, DUODENAL EXPLORATION, ENZYMATIC STUDIES (1323)
CHRONIC, DUODENUM, ELECTRICAL STIMULATION (7520)
CHRONIC, DYSPHAGIA, ESOPHAGEAL STENOSIS (9031)
CHRONIC, ELASTASE, ANTIELASTASE (0517)
CHRONIC, ENDOCRINE, PANCREATIC FUNCTION, HISTOLOGY, POTENTIAL DIABETES (8251)
CHRONIC, ENDOCRINE FUNCTION, GLUCOSE LOADING, PLASMA, INSULIN (8250)
CHRONIC, ENZYME SUBSTITUTION, STEATORRHEA, STOOL EXAMINATION (0518)
CHRONIC, EPIDEMIOLOGY, NUTRITION, ALCOHOL, ETIOLOGY (9020)
CHRONIC, ETIOLOGY, PATHOGENESIS, INCIDENCE (9023)
CHRONIC, EXPERIMENTAL SURGERY, PANCREATICO-JEJUNAL ANASTOMOSIS, PIG (9026)
CHRONIC, INDICATIONS, TREATMENT (0520)
CHRONIC, JAUNDICE, PANCREATICO-JEJUNOSTOMY, CHILDREN (9027)
CHRONIC, LYMPHANGIOGRAPHY, DIFFERENTIAL DIAGNOSIS (6567)
CHRONIC, PLASMA INSULIN LEVEL, EXOCRINE AND ENDOCRINE PANCREAS, DIABETES MELLITUS (8362)
CHRONIC, PLEURAL ENZYME EFFUSION, SURGERY, HEMORRHAGIC ASCITES (8255)
CHRONIC, PLEURISY, PATHOGENESIS (9032)
CHRONIC, PORTAL HYPERTENSION, SPLENOPORTOGRAPHY (3539)
CHRONIC, PSEUDOTUMOR, BILIARY OUTFLOW SYSTEM (1327)
CHRONIC, SPLANCHNICECTOMY (9019)
CHRONIC, SPLANCHNICECTOMY, ALCOHOLISM, PANCREATIC FIBROSIS (6752)
CHRONIC, SPLEEN, JAUNDICE, CHOLANGIOGRAPHY (9030)
CHRONIC, SPLENIC COMPLICATIONS (0511)
CHRONIC, SURGERY (1332), (8246)
CHRONIC, SURGERY, DIFFUSE CALCIFICATION (1344)
CHRONIC, SURGERY, DRAINAGE, CIRRHOSIS (6758)
CHRONIC, SURGERY, ENZYME (2788)
CHRONIC, SURGERY, STATISTICS, GENEVA (9022)
CHRONIC, SURGICAL TREATMENT (2028), (3532)
CHRONIC, TOTAL PANCREATECTOMY, FOLLOW-UP, LIPOSOLUBLE VITAMINS (9021)
CHRONIC, TRANSVERSE AXIAL STRATIGRAPHY, ANATAMO-RADIOLOGIC CORRELATION (2798)
CHRONIC, TREATMENT (8259)
CHRONIC, VASCULARY ETIOLOGY, PERIPHERAL ARTERITIS (9037)
CHRONIC, VEGETATIVE NERVOUS SYSTEM, SURGERY (7523)
DEVELOPMENT, LEFT COLON (0514)
DIABETES MELLITUS (3533)
DIAGNOSIS, ENZYME ACTIVITY, AMYLASE, LIPASE (4015)•
ENZYME, DIAGNOSIS, LIPASE (3283)
ENZYME, SERUM, URINE, DUODENAL, SECRETIONS (6548)
ENZYME TESTS, ALCOHOLISM, CARCINOMA (9015)•
ETHANOL, DL-ETHIONINE, PROTEIN DEFICIENCY, LEUCINE AMINOPEPTIDASE ACTIVITY, RAT PANCREAS (1683)•
ETIOLOGY, NUTRITION (3531)
ETIOLOGY, PATHOGENESIS (9018)
EXPERIMENTAL, TREATMENT, DEXTRAN, HEMATOCRIT (3529)•
EXPERIMENTAL, TREATMENT, DEXTRAN, PLASMA (4346)•
HEMORRHAGE, KIDNEY TRANSPLANT, THERAPEUTICS (2793)
HEMORRHAGIC, ANTIFERMENTS (1326)
HEMORRHAGIC, POSTGANGLIONIC SYMPATHECTOMY, MICROCIRCULATION (1322)•
HEMORRHAGIC, PREVENTION, HEPARIN, FIBRINOLYSIN (1324)•
HISTOPATHOLOGY, LESIONS, FIBROSIS (6749)•
HYPERPARATHYROIDISM (2794)
ION CONCENTRATION, DUODENUM, CALCIUM, MAGNESIUM (4347)•
LIPASE, ELASTASE, CANCER (0193)•
MEDICAL TREATMENT, SURGERY (2778)
METHEMALBUMIN, HEMORRHAGE, ABDOMINAL EMERGENCY (6940)•
PANCREAS, AFFERENT LOOP SYNDROME, STOMACH (1858)•
PANCREATECTOMY (4357)
PANCREATOLITHIASIS, RADIOLOGY (4337)
PARASITES, ALCOHOLISM, PANCREATIC CARCINOMA (9036)
PATHOGENESIS, MORPHOGENESIS, CLINICAL PATHOLOGY (9034)
PATHOLOGY, SURGERY, DRUG EFFECTS (1330)
PLEURISY, SYMPTOM, EARLY (0527)
POSTOPERATIVE, BILIARY AND GASTRIC SURGERY, PATHOGENESIS (8252)
PROTEIN SYNTHESIS (4345)•
PROTEINASE INACTIVATOR, ACUTE (1337)
RECURRENT, ANTISECRETORY, HYPERLIPOPROTEINEMIA (4359)
RECURRENT, ENZYME, TRYPSIN (2966)
RESEARCH METHODS, ACINAR CELLS (8260)
SCANNING, RADIOACTIVE SELENIUM (0280)
SCINTILLOGRAPHY, SELENOMETHIONINE SE75 (6755)
SECRETIN, CHRONIC PANCREATITIS, SURGERY, STOOL ANALYSIS (6757)
SECRETIN STIMULATION, ENZYME STUDIES (0944)•
SECRETION, ENZYME, EDEMA, ACUTE, DIAGNOSIS SCLEROSIS (2792)
SECRETION, PRESSURE, CAT (3154)•

  - SULFONAMIDES, TREATMENT (2030)
  - TRASYLOL, THERAPY (1338)
  - TRAUMATIC, MAN (1342)
- ANCREATODUODENECTOMY
  - CARCINOMA, PERIAMPULLARY (0297)
  - COMPLETE PANCREATIC FISTULAE, METABOLIC DISORDERS (0508)
  - FISTULA, POSTOPERATIVE, MANAGEMENT (3518)
  - TRAUMATIC LESIONS, SURGERY (1318)
- ANCREATOLITHIASIS
  - PANCREATITIS, RADIOLOGY (4337)
- ANCREOZYMIN
  - CHOLECYSTOKININ-, DUODENUM, GASTRIC PEPSIN, GASTRIN, INHIBITION OF SECRETIONS (3135)*
  - CHOLECYSTOKININ-, RECENT DEVELOPMENTS (3232)
  - CHOLECYSTOKININ-, VILLIKININ, GALLBLADDER, SMALL INTESTINE (3442)*
  - MOTOR CONTROL, PERISTALSIS, DOG (0175)
  - PANCREATIC JUICE, HUNGER, SECRETION (2363)
  - SECRETIN, PANCREAS (0811)*
  - SECRETIN, PANCREAS, BICARBONATE, TRYPSIN (0963)
- ANCYTOPENIA
  - INFECTIOUS HEPATITIS, BONE MARROW APLASIA, IMMUNOLOGIC PATHOGENESIS (0623)
- ANETH CELL
  - SMALL INTESTINE, GOBLET CELL (3031)*
  - SMALL INTESTINE, REGENERATION, MITOSIS (1567)*
- APILLA OF VATER
  - CANCER, ANEMIA, JAUNDICE (6744)
- APILLOMA
  - GALLBLADDER, LIPOMA, ADENOMA (3682)
- APILLOMATOSIS
  - DISSEMINATED, HEPATOBILIARY TRACT, CYSTIC ENLARGEMENT (8288)
  - GALLBLADDER, METACHROMATIC LEUKODYSTROPHY (1493)
- ARAGONIMIASIS
  - EXTRAPULMONARY, CIRRHOSIS, JAUNDICE (3659)
- ARASITE
  - ALIMENTARY TRACT INVASION, VIETNAMESE APPRENTICES, ERADICATION (3780)
  - AMEBIC ABSCESS, LIVER (7762)
  - ANISAKIS LARVA, ILEAL, EOSINOPHILIC GRANULOMA, INTESTINAL OBSTRUCTION (8489)
  - ASCARIS, BILE DUCT, PANCREATITIS (8495)
  - ASCARIS, ENTERITIS, JEJUNUM, ILEUM (5358)
  - ASCARIS, LIVER, ABSCESS (5399)
  - ASCARIS LUMBRICOIDES, BILE DUCT, OBSTRUCTION (1559)
  - ASCARIS LUMBRICOIDES, TRICHURIS TRICHIURA, NUTRITION, RURAL CHILDREN (6276)
  - ASCARIS LUMBRICOIDES, BILIARY CALCULUS (4665)
  - ASCARIS SUUM, ANTIGEN, HOST COMPONENTS, IMMUNITY (6268)
  - ASPERGILLUS PARASITICUS, LIVER HISTOCHEMISTRY, BILE CANALICULI, HEPATOCYTES, PATHOLOGY (4444)*
  - BILHARZIASIS, HEMATURIA, ANTIBODIES (7008)
  - BILHARZIASIS, SCHISTASOMA (2251)*
  - CESTODIASIS, TREATMENT, NICLOSAMIDE (7010)
  - CLONORCHIASES, CONTROL, NEW ANTHELMINTIC (4476)
  - COLON, GRANULOMA, CECUM, SCHISTOSOMIASIS (2250)*
  - COLON, HELIGMOSOME, RODENTS (5405)
  - CYSTICERCOSIS, MADAGASCAR, CANCER (4678)
  - DIARRHEA, LARGE INTESTINE, FECAL FLORA (2195)*
  - ECHINOCOCCUS, LIVER, RADIOLOGY, RADIOISOTOPE (8013)
  - ENTAMEBA HISTOLYTICA, INTESTINE, METRONIDAZOLE TREATMENT (8501)
  - ENTAMEBA HISTOLYTICA, LIVER CYSTS, HAMSTER (8490)
  - ENTAMEBA HISTOLYTICA, SEROLOGY, ANTIGEN (5403)
  - FASCIOLA HEPATICA, ANTHELMINTIC (4199)
  - FASCIOLA HEPATICA, HEPATIC BILE DUCT, IRAN (4668)
  - FASCIOLA HEPATICA, HEPATOPANCREAS, TYMNAEA TRUNCATULA (8700)
  - FASCIOLA HEPATICA, LIVER, ANTHELMINTIC TREATMENT, SGOT LEVELS (4661)*
  - FASCIOLA HEPATICA, SPECIFIC ANTIGEN, CHARACTERISTICS, IN SITU (8539)
  - GALLBLADDER, CAT (6282)
  - GASTROINTESTINAL TRACT, NEMATODE (6259)
  - HELMINTH, HETERAKIS GALLINARUM (6260)
  - HELMINTHIASIS, GASTROENTERITIS, CONTROL, CALF (8500)
  - HOOKWORM, IODOTHYMOL PIPERAZINE THERAPY (7006)
  - HOOKWORM, TETRACHLORETHYLENE, KWASHIORKOR, CHILDREN (4603)
  - HYDATID CYST, LIVER, BILIARY DUCTS (1535)
  - HYDATID CYST, LIVER, BILIARY TRACT, SURGERY, CHOLANGIOGRAPHY (5401)
  - HYDATID CYST, LIVER, CELIAC TRUNK, CYSTECTOMY, ARTERIOGRAPHY (4934)
  - HYDATID CYST, LIVER, LAPAROSCOPY, CYSTECTOMY, IMMUNOELECTROPHORESIS (5402)
  - HYDATID CYST, LIVER, SMALL INTESTINE (1561)
  - HYDATID CYST, SCINTOGRAPHY, ECHINOCOCCOSIS, TUMOR (4946)
  - HYMENOLEPSIS DIMINUTA, CHEMICAL CHANGES, RAT INTESTINE (9289)
  - HYMENOLEPIS DIMINUTA, DEVELOPMENT, VITAMIN DEFICIENT DIETS, HOST COPROPHAGY PREVENTION, RAT (2259)
  - HYMENOLEPIS MICROSTOMA, AMINO ACID, BILE (3023)
  - INFESTATION, MALABSORPTION SYNDROME, ACHYLIA, JEJUNUM (3786)
  - INTESTINAL, ASTHMA (2257)
  - INTESTINAL, CHEMOTHERAPY, PHENYLENE 1,4-DIISOTHIOCYANATE (8493)

- INTESTINAL, EPIDEMIOLOGY, ALGERIA (3022)
- INTESTINAL, NUTRITION, INCIDENCE, SOUTH CAROLINA, CHILDREN (3777)
- INTESTINAL, PREVALENCE, LUCKNOW (3778)
- INTESTINAL, TESTING, TROPICS (8493)
- INTESTINAL HELMINTH EGGS, IDENTIFICATION, OLD WORLD PRIMATES (3771)
- JEJUNUM, MALABSORPTION (5089)
- KALA-AZAR, LIVER CIRRHOSIS (8492)
- LAMBLIA INTESTINALIS, BLUE CYST, LUGOL'S SOLUTION, TROPHOZOITES (6254)
- LIVER, ABSCESS, EMETINE, CHLOROQUINE (2100)
- LIVER ALVEOCOCCOSIS, RADIOISOTOPE SCAN (3672)
- NEMATODE, CARNIVORES, BURSAL RAYS, ARTHROSTOMA GUILHONI N. SP. (6278)
- NEMATODE, FISH STOMACH, PSEUDOPROLEPTUS LAMYI N. SP. (6251)
- NEMATODES, THERAPY (7019)
- NIPPOSTRONGLUS BRASILIENSIS, REPRODUCTION, RAT INTESTINE (9288)
- OPISTHORCHOSIS, HETOL, THAILAND (8496)
- OXYURIS, REINFESTATION, CHILDREN (3779)
- PERITONEUM, HYDATID (2015)
- PNEUMATOSIS INTESTINALIS, CYST, INTESTINE (6267)
- PROTOZOA, HELMINTHS, DIAGNOSIS (3017)
- SALMONELLA, BILHARZIASIS, EPIDEMIOLOGY, SOUTH AFRICA (6277)
- SCHISTOSOMA MANSONI, EPIDEMIOLOGY, RHODESIA (8498)
- SCHISTOSOMA MANSONI, IMMUNOGLOBULIN LEVELS, EOSINOPHILIA (8499)
- SCHISTOSOMA MANSONI, SCHISTOSOMA HAEMATOBIUM, NIRIDAZOLE TREATMENT (8497)
- SCHISTOSOMIASIS, BILHARZIASIS (3021)
- SCHISTOSOMIASIS, BILHARZIASIS, INFECTIONS, TARTER EMETIC (2255)
- SCHISTOSOMIASIS, EPIDEMIOLOGY, KERMACK-MCKENDRICK THEORY (3775)
- SCHISTOSOMIASIS, NATURAL HISTORY, SINGLE AND MULTIPLE EXPOSURE, CHIMPANZEE (3776)
- SMALL INTESTINE, MALABSORPTION (5082)
- STRONGYLOIDES STERCORALIS, DUODENAL CONTENT, SAMPLING, NEW TECHNIQUE (3311)
- SYPHACIA OBVELATA, HELMINTH, TETRACHLOROTHIOPHENE, NEMATICIDE, PESTICIDES, MICE (5408)
- TAENIA HYDATIGENA, IMMUNOLOGY, HOST RESPONSE, COLOSTRUM (6273)
- TAENIA INFECTIONS, TREATMENT, PAROMOMYCIN (3773)
- TAENIA INFESTATION, APPENDIX (7013)
- TAENIARHYNCHUS SAGINATUS, EPIDEMIOLOGY KARL MARX CITY (9292)
- TAPEWORM, ENZYME, METABOLISM (3784)
- TAPEWORM, HOST RESPONSE, IMMUNOLOGY, EMBRYO, CYST (6279)
- TAPEWORM, IMMUNOLOGY, HOST RESPONSE, TAENIA HYDATIGENA, COLOSTRUM (6273)
- TETRAMERES, LIVER, MONKEY (4683)
- TOXOCARA CANIS, ANTIBODY RESPONSE, WHITE-CELL RESPONSE, SERUM-PROTEIN RESPONSE, BABOON (3774)
- TOXOPLASMA GONDII, RESISTANCE, GI CIRCULATION (8488)

PARASITIC DISEASE
- ACUTE AMEBIC DYSENTERY, DIARRHEA, PARASITOLOGICAL EXAMINATION, INTESTINAL COMPLICATIONS, FEVER (6253)
- ACUTE AMEBIC DYSENTERY, DRUGS, ANTIBIOTICS (7021)
- AMEBIASIS, CYST ANTIGEN, SERODIAGNOSIS (7279)
- AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
- AMEBIASIS, ENTAMOEBA HISTOLYTICA, DYSENTERY, INTESTINE (6272)
- AMEBIASIS, HEMAGGLUTINATION TEST (7249)
- AMEBIASIS, INTESTINE, METRONIDAZOLE (7759)
- AMEBIASIS, LIVER, DIAGNOSIS, SAIGON (9263)
- AMEBIASIS, LIVER, LAOS (9265)
- AMEBIASIS, SKIN TEST (8021)
- AMEBIC ABSCESS, LIVER, THERAPY (9266)
- AMEBIC HEPATITIS, DIAGNOSIS, INDIRECT IMMUNOFLUORESCENCE REACTION (9290)
- AMEBIC LIVER ABSCESS, CLINICAL STUDY (9273)
- AMEBIC LIVER ABSCESS, METRONIDAZOLE, NIRIDAZOLE, DEHYDROEMETINE, CHILDREN (7011)
- AMEBIC LIVER ABSCESS, REVIEW (8272)
- AMEBIC LIVER ABSCESS, RUPTURE, PREGNANCY (7012)
- AMOEBIASIS, DYSENTERY, ANTIBIOTIC (5383)
- AMOEBIASIS, HEPATOMEGALY, ORNITHINE-CARBAMYL TRANSFERASE, DIURESIS, HISTOLOGICAL LESIONS (5397)•
- AMOEBIASIS, LEISHMANIASIS, TRYPANOSOMIASIS (5398)
- ASCARIASIS, PANCREAS, ACUTE ABDOMEN (7007)
- ASCARIASIS, REINFECTION, TREATMENT, NUTRITION (9284)
- ASCARIASIS, SCHWARTZMAN PHENOMENON, ASCARIDE TISSUE (7201)
- ASCARIASIS, SURGICAL COMPLICATIONS, CHILDREN (7761)
- ASCARIASIS, THIABENDAZOLE TREATMENT, IRAN (9262)
- ASCARIASIS, TREATMENT, PIPERAZINE (6255
- BILHARZIAN LIVER, HEPATIC LESIONS, THERAPEUTIC INDICATIONS (6252)
- BILHARZIASIS, INTESTINE, DETECTION, CHILDREN (9279)
- BILHARZIASIS, LIVER, INTRAVENOUS HEPATIC OPOTHERAPY (9281)
- BILHARZIASIS, LUCANTHONE HYDROCHLORIDE CHEMOTHERAPY (7767)
- BILHARZIASIS, WOODY REGIONS, EPIDEMIOLOGY (9278)
- BOVINE POLYARTHRITIS, CHLAMYDIAL AGENT IMMUNOFLUORESCENCE (9208)
- CESTODIASIS, TREATMENT, NICLOSAMIDE (7010)
- CHRONIC AMEBIC COLITIS SYSTEMIC EFFECTS, LIVER (7017)

- COCCIDIOSIS, LIVER METABOLISM, CHICKEN (9283)
- DIARRHEA, MALNUTRITION, INFANT, KABUL (2999)
- DISTOMATOSIS, FASCIOLA HEPATICA, IMMUNOFLUORESCENCE, IMMUNOELECTROPHORESIS, COMPLEMENT FIXATION, LAPAROSCOPY (4907)
- DISTOMATOSIS, LIVER, LAPAROSCOPY, CAPSULITIS, BIOPSY (4908)
- ECHINOCOCCOSIS, E. CYSTICUS, E. ALVEOLARIS, LIVER TUMORS, BILE DUCT STASIS, METASTASES, SURGERY (5407)
- ECHINOCOCCOSIS, LIVER, DIAGNOSIS, CALCIFICATION (6271)
- ECHINOCOCCOSIS, RHEOHEPATOGRAPHY, DIAGNOSIS, PARASITE (5703)
- ECHINOCOCCUS, LIVER, DIAGNOSIS, LIVER SCAN (4887)•
- ENTAMOEBA HISTOLYTICA, SYMPTOMS, RHODESIANS (9286)
- EXPERIMENTAL, ECHINOCOCCUS GRANULOSUS, CYST FORMATION (9268)
- FASCIOLA HEPATICA, SHEEP (8491)
- FILARIASIS, CHYLURIA, LYMPHOGRAPHY (9291)
- GASTROENTERITIS, INFANT (1193)
- GIARDIASIS, DIARRHEA, CHILDREN (6264)
- GIARDIASIS, DIARRHEA, HALOQUINOL (6265)
- GIARDIASIS, DIARRHEA, PAIN, SIGMOIDOSCOPY, ADULT (6262)
- GIARDIASIS, FECES, PARASITE, BACTERIA, VIRUS (4880)
- GIARDIASIS, INTESTINALIS, METRONIDAZOLE, CYTOCHEMISTRY (6258)
- GIARDIASIS, METRONIDAZOLE THERAPY (6266)
- GIARDIASIS, SMALL INTESTINE, MALABSORPTION (6280)
- GIARDIASIS, SYMPTOMS, CHILDREN, MALABSORPTION (6263)
- HELMINTHIASIS, CUCURBITACINES, MOUSE (9280)
- HEPATIC AMEBIC ABSCESS, SCAN (7016)
- HEREDITARY TELANGIECTASIA, GASTROINTESTINAL HEMORRHAGE (6956)
- HISTOPLASMOSIS, GRANULOMATOUS HEPATITIS (5237)
- HOOKWORM, ANEMIA, HEMOGLOBIN, PROTEIN, CHILDREN (7014)
- HYDATID CYST (7760)
- HYDATID CYST, ASCITES, CHOLECYSTECTOMY (7758)
- HYDATID CYST, LIVER, SURGERY (9132)
- HYDATIDOSIS, LIVER, INDIA (7020)
- HYDATIDOSIS, LIVER, SURGERY, BILIARY TRACT (5400)
- HYDATIDOSIS, OBSTRUCTIVE JAUNDICE, CHOLANGIOGRAPHY (9269)
- HYMENOLEPIS, MIGRATION, INTESTINE, GLUCOSE (5404)
- INTESTINAL, SOUTH CAROLINA, ASCARIS, HOOKWORM, TRICHURIS (9285)
- INTESTINAL AMEBIASIS, EPIDEMIOLOGY, FRANCE (9264)
- INTESTINAL GIARDIASIS, METRONIDAZOLE, CHILDREN (6257)
- LEISHMANIOSIS, IMMUNOFLUORESCENCE, VISCERAL, CUTANEOUS, HAMSTERS, KALA-AZAR, LIVER, SPLEEN (5675)
- LIVER, AMEBIC ABSCESS, HEALING RATE, SCAN (7015)
- LIVER ECHINOCOCCOSIS, HYDATID CYST PERFORATION, OBSTRUCTIVE JAUNDICE (9276)
- MALARIA, ABSORPTION, INTESTINE, AMINO ACID (6275)
- MALARIA, LIVER METABOLISM, PHENOBARBITAL (6270)
- OPISTHORCHOSIS, CHLOROXYL THERAPY (7766)
- OPISTHORCHOSIS, LIVER, SURGERY, PERITONITIS (7754)
- OPISTHORCHOSIS, PERITONITIS, BILIARY PERFORATION (6250)
- SCHISTOSOMA JAPONICUM, LIVER LESIONS, EGGS (9271)
- SCHISTOSOMAL POLYPOSIS, COLON, PROTEIN LOSS (8487)•
- SCHISTOSOMIASIS, ANTIBODIES, NIRIDAZOLE (8486)•
- SCHISTOSOMIASIS, ENDEMIC, BANTU CHILDREN (8899)
- SCHISTOSOMIASIS, EPIDEMIOLOGY CAMBODIA (9275)
- SCHISTOSOMIASIS, FASCIOLIASIS, RHODESIA (9287)
- SCHISTOSOMIASIS, FLUORESCENT ANTIBODIES (8485)•
- SCHISTOSOMIASIS, HEPATOSPLENIC, NICARBAZIN, MOUSE (6269)
- SCHISTOSOMIASIS, MORPHOLOGY, SMALL INTESTINE (9274)
- SCHISTOSOMIASIS, PARATHYROID FUNCTION HEPATIC FIBROSIS (6281)
- SCHISTOSOMIASIS, PORTAL HYPERTENSION SYNDROME (7764)
- TRICHOCEPHALOSIS, THERAPY, N-(2'CHLORO-4'-NITROPHENYL)-5-CHLOROSALICYLAMIDE (9267)

PARASITOLOGY
- ASCARIS EGGS, ENTAMEBA HISTOLYTICA, CYSTS, SODIUM HYPOCHLORITE (1794)
- CHOLERA, ANTITOXIN RESPONSE (4571)•
- CHOLERA, EPIDEMIOLOGY, CHOLERA VACCINE, EAST PAKISTAN (4570)•
- CHOLERA, SEROLOGY, VIBRIOCIDAL ANTIBODY TITER, TOXIN NEUTRALIZATION TESTS (4586)
- CLONORCHIS SINENSIS, STOOL, IMMUNE SERA (0710)
- DIAGNOSIS, THERAPY, FECAL SMEAR, DIARRHEA (2199)
- ECHINOCOCCUS, LIVER, SURGERY (4679)
- ENTAMOEBA HISTOLYTICA, AGAR GEL DIFFUSION, INDIRECT HEMAGGLUTINATION REACTION (4659)•
- ESOPHAGUS, PHARYNX (3013)
- FECES, INTESTINE (3011)
- GALLBLADDER, MOTOR ACTIVITY, DIAGNOSIS, RADIOLOGY, OPISTHORCHOSIS (3003)
- HYDATID, TAPEWORM, LIVER (3010)
- INTESTINE (4672)
- INTESTINE, AMEBIASIS, HEPATIC DISEASE, TROPHOZOITE, INFANTS (0720)

  - INTESTINE, HELMINTHIASIS (4673)
  - LAMBLIA, SMALL INTESTINE, MOUSE, MUCOSA, VILLI (3008)
  - LARGE INTESTINE, AMEBIASIS, EPIDEMIOLOGY, LIVER ABSCESS (1549)
  - LIVER, HYDATID CYST, COMPLEMENT (4687)
  - MESENTERY, HEPATOSPLENOMEGALY (4671)
  - OBSTRUCTION, SMALL INTESTINE, ILEUS (3016)
  - PARASITIC NEMATODE, STRONYLOIDES STERCORALIS, HYPERINFECTION, HEMATOLOGIC DISEASE (3001)
  - PHARMACOLOGY, HELMINTH, ASCARIS (4669)
  - PLASMA FLUKE, METACERCARIAE, ERYTHROPOESIS, IRON UTILIZATION (3002)•
  - ROUNDWORM, LIVER, INTESTINE (3012)
  - S, MANSONI, SMALL INTESTINE, FECES, OVA (4463)•
  - SCHISTOSOMA MANSONI, RODENT (0176)
  - SCHISTOSOMIASIS, BLADDER CARCINOMA, EPIDEMOLOGY, ECOLOGY (0722)
  - STRONGYLOIDOSIS, DIAGNOSIS, SMALL INTESTINE (4077)
  - SURGERY, GASTRIC ULCER, DUODENAL ULCER, OPISTHORCHOSIS, DIAGNOSIS, CHOLECYSTITIS (3009)
  - TAPEWORM, EPIDEMIOLOGY, CYSTICERCOSIS (3019)
  - TRICHINOSIS, DIAGNOSIS, ENCORTON (4670)
  - VIBRIO CHOLERAE, DUODENUM, DETECTION, MAGNESIUM SULFATE PURGING, CARRIER STATE (4575)•

- PARASYMPATHOLYTIC
  - SURGICAL VAGOTOMY, SHAY ULCER, RAT(1023)•
- PARASYMPATHOLYTIC EFFECT
  - TOXOGONIN, ILEUM, GUINEA PIG (2476)
- PARATHION
  - BETA-GLUCURONIDASE, SERUM, LIVER, RAT (3617)
- PARATHYROID
  - ADENOMA, SECONDARY, PANCREATITIS, ACUTE, HYPERCALCEMIA, HYPERURICEMIA, HYPERTENSION (2795)
  - CALCIUM ABSORPTION, DIET, THYROIDECTOMY (6350)•
- PARATYPHOID FEVER
  - SEROLOGY, O-HEMAGGLUTINATION, O-H-VI-AGGLUTINATION, ANTIBODIES, TYPHOID (6538)
  - TRIMETHOPRIM, SULPHAMETHOXAZOLE, TYPHOID FEVER (0697)
- PARENCHYMAL CELL
  - LIVER, EPIDERMOLYSIS ACUTA TOXICA, CHILDREN (9098)
  - PROLIFERATIVE ACTIVITY, DIETHYLNITROSAMINE, PARTIALLY RESECTED LIVER (3573)
- PARIETAL CELL
  - ANTIBODY, GASTRITIS, SECRETION (3339)•
  - ANTIBODY, GASTRITIS, STOMACH (2602)
- PAROTID
  - SALIVA, IMMUNOGLOBULINS, ANTIBODIES (0903)•
  - TUMOR, GARDNER'S SYNDROME, ACROMEGALY (4306)
- PATHOGENESIS
  - ACUTE PANCREATITIS, DIAGNOSIS, PROGNO- (9024)
  - ACUTE PANCREATITIS, TRYPSIN (7514)
- PEDIATRICS
  - DIARRHEA, DYSPEPSIA (3750)
  - DUODENUM, ULCER, PSYCHOLOGY (1912)
  - ENTERITIS, DIARRHEA (3749)
  - ENTEROSTOMY, GASTROSTOMY, INCIDENCE (1074)
  - HYPERBILIRUBINEMIA, FUNCTIONAL, ENCEPHALOPATHY, DIAGNOSIS (1423)
  - LARGE INTESTINE, ANOMALY (1240)
  - PANCREATITIS, ACUTE (1328)
  - SCHISTOSOMA, ANUS, INFECTION (2254)
- PELVIC TRAUMA
  - DIAGNOSIS, SCINTIPHOTOGRAPHY (2510)•
- PEMPHIGOID
  - BULLOUS, CELIAC DISEASE, CHILD (0416)
- PENICILLIN
  - CUTANEOUS LESIONS, WILSON'S DISEASE, LIVER (0569)
- PENTAGASTRIN
  - GASTRIC MOTILITY, VAGOTOMY, SECRETION, DOG (1644)•
  - GASTRIC SECRETION, ACIDITY (0061)•
  - GASTRIC SECRETORY RESPONSE, SPONTANEOUS DECREASE (1682)
  - HISTAMINE, GASTRIC ACID SECRETION, MAXIMAL RESPONSE, SIDE EFFECTS (1670)•
  - HYPERSENSITIVITY, GASTRIC FUNCTION TEST (0078)
  - SECRETION, STOMACH, ATROPINE, VAGOTOMY (0064)•
  - SECRETION, STOMACH, HISTAMINE (3149)
  - STIMULATION, GASTRIC SECRETION, RESPONSE (6398)•
  - STIMULATION, HISTIDINE DECARBOXYLASE, STOMACH (6397)•
  - STOMACH, SECRETION, PEPSIN (3137)•
  - ULCER, DUODENUM, CARBACHOL, HISTAMINE (7386)•
- PENTENOIC ACID
  - GLUCONEOGENESIS, INHIBITION, LIVER, PERFUSED, RAT (2446)
- PEPSIN
  - ACID, DUODENUM, STOMACH, SECRETIN (2369)•
  - ACIDINE-, ACIDINE-MUCOSINE, GASTRIC SECRETION (3141)
  - ANABOLIC STEROID, PEPTIC ULCER, GASTRIC JUICE, GASTROINTESTINAL TRACT DISEASE (2955)
  - ANALYSIS, ABSORBANCE, P-NITROPHENYL SULFITE (6521)•
  - DRUG EFFECT, GASTROINTESTINAL TRACT, ABSORPTION (2489)
  - ENZYME, POLYVINYLPYRROLIDONE (7090)•
  - ESOPHAGITIS (4102)
  - GASTRIC JUICE, DOG, GASTRIC FISTULA, 2-DEOXY-D-GLUCOSE (2389)
  - PENTAGASTRIN, ATROPINE, VAGOTOMY (0064)•
  - SECRETION, GASTRIC PENTAPEPTIDE, HEIDENHAIN POUCH, DUODENAL POUCH PH (0081)
  - SECRETION, HISTAMINE, PENTAGASTRIN (7871), (7872)
  - STOMACH, PEPTIC ULCER, PENTAGASTRIN, I-HYASCYAMINE (3394)
  - STOMACH, SECRETION, ACID (3137)•

UROPEPSIN, SECRETION, ACUTE DYSENTERY (2957)

PEPSINOGEN
ELECTROPHORESIS, URINE, GASTRIC MUCOSA (3393)*
I, II, III, GASTRIC MUCOSA (2390)
PROTEASE, ELECTROPHORESIS, GASTRIC MUCOSA (0784)*
SECRETION, STOMACH, NEUTRALIZATION (0066)*
SERUM, GASTRIC SECRETION, HISTAMINE, POLAROGRAPHY (2384)

PEPTIDE
CHOLECYSTOKININ, CAERULIN, ACID SECRETION (2374)*
ENTEROGASTRONE, CHOLECYSTOKININ-PANCREOZYMIN (7095)*

PERFORATION
ANASTOMOTIC ULCER, DUODENUM, JEJUNUM (1200)
APPENDIX, SURGERY (2713)
COLON, INFANT, TREATMENT (1984)
COLON, INTESTINAL RESISTANCE (6695)
COLON, SPONTANEOUS, HEMODIALYSIS (8977)
COLON, STERCORACEOUS (1265)
DIVERTICULUM, GASTROINTESTINAL TRACT, SURGERY (7715)
DUODENAL ULCER, SURGERY, HEMORRHAGE (2636)
ESOPHAGEAL, GASTROCAMERA FIBERSCOPE (3328)
ESOPHAGEAL, PHYSIOPATHOLOGY, CHILD (4119)
ESOPHAGUS, HIATAL HERNIA, VAGOTOMY (1007)
ESOPHAGUS, RUPTURE, PATHOLOGY (6602)
ESOPHAGUS, SURGICAL TREATMENT (2576)
GALLBLADDER, PERITONITIS, AGED SUBJECTS (2916)
GANGRENE, DIAGNOSIS, ACUTE APPENDICITIS, SURGERY (2744)
GASTRIC, ISCHEMIA, MESENTERIC INFARCT, ILEUM (6679)
GASTRIC ULCER, GASTROBRONCHIAL FISTULA, RESECTION DRAINAGE (2596)
GASTRODUODENAL ULCER, ACUTE COMPLICATIONS, HEMORRHAGE, TREATMENT (0348)
IDEOPATHIC, COLON, NEWBORN (2718)
INTESTINAL, HEMORRHAGIC MUCOSAL NECROSIS (1098)
INTESTINE, EXCHANGE TRANSFUSION, INFANT (1228)
PEPTIC ULCER, DIAGNOSIS, TREATMENT (7408)
RECTOSIGMOID FUNCTION, FOREIGN BODY (1985)
RECTUM, BARIUM ENEMA, RADIOLOGY (2702)
SIGMOID DIVERTICULOSI, AGED SUBJECTS, ABDOMINAL PAIN, INFLAMMATION (2740)
SPONTANEOUS, BILE DUCT, INFANT (3677)
SPONTANEOUS, ESOPHAGUS (1853)
SPONTANEOUS, LARGE INTESTINE, ANATOMOPATHOLOGY, AGE INCIDENCE (8963)
ULCER, DUODENUM, SUTURE (4190)
ULCER, ESOPHAGUS (1833)
ULCER, PERITONEUM (4619)
ULCER, STOMACH, DUODENUM, DIAGNOSIS (4080)
ULCER, STOMACH, PREGNANCY (2648)
ULCER, SURGERY, OBSTRUCTION (2645)

PERFUSION
ACID, ESOPHAGITIS, HEARTBURN (6570)
CHOLANGIOGRAPHY, BILE DUCT INVESTIGATIONS, HAZARDS (8715)
FLUOROCARBON, ISOLATED LIVER, ULTRASTRUCTURE, RAT (8511)*
LIVER, COMA (2837)
LIVER, METABOLISM, ALCOHOL (3211)
RAT LIVER, IRRADIATION, GLUCOSE, GLYCOGEN (6480)
SLOW TECHNIQUE, CHOLANGIO-CHOLECYSTOGRAPHY (3310)
STOMACH SECRETION, 1-(3-(1-CYCLOHEXENYL)-3-PHENYLPROPYL)-1-METHYLPIPERIDINIUM BROMIDE (7875)
TECHNIQUE, ISOLATED LIVER FUNCTION, RAT (7934)

PERFUSION STUDY
ALLOGENIC HEPATIC EXTRACORPOREAL ASSIST, LIVER FAILURE (3765)
LIVER, INSUFFICIENCY, CIRRHOSIS (4517)
LIVER, ISOLATED, THERAPY APPLICATION (3179)
LIVER, PHARMACOLOGY (4012)
LIVER, TRANSMITTER OVERFLOW, GLUCONEOGENESIS, RAT (3932)*
LIVER, VASCULAR RESISTANCE (3259)
PANCREAS, STOMACH, GALLBLADDER (3266)*
SMALL INTESTINE, ISOLATED GUT (0168)

PERICARDITIS
CHOLECYSTITIS, PANCREATITIS (3689)
EFFUSION, AMEBIASIS, LIVER ABSCESS (2074)

PERIDIVERTICULITIS
CARCINOMA, SIGMOID, STENOSIS, NUTRITIONAL STATE (6703)
SIGMOID DIVERTICULITIS, MAN (0446)

PERIESOPHAGITIS
NECROTIC ESOPHAGITIS, PULMONARY INFLAMMATION, TRAUMA, BRACHYESOPHAGUS (0247)

PERIHEPATITIS
ADHESIVE, SURGERY (2101)

PERISTALSIS
BLOCKADE, MAGNESIUM (1653)
CAT, COLON, MUCOSA, DRUG EFFECT (2477)
COLON, STIMULATION, PHYSICAL FACTORS (3128)
COLONIC, SPONTANEOUS, BISACODYL, OXYPHENISATIN, MAN (0054)
DIGESTIVE TRACT, CHOLECYSTOKININ CONTROL, BILIARY TRACT, DOG (0175)
GASTRIC, REGIONAL CONTRACTION RATES (3127)
NACI EFFECT, GUINEA-PIG ILEUM (0038)*
STOMACH, POSTRESECTION (0044)*

PERITONEOSCOPY
CHOLECYSTITIS (7223)
EVALUATION, CONTRAINDICATIONS (0205)

PERITONEUM
ACUTE CHYLO-, HEMOLYTIC ANEMIA, MALIGNANT LYMPHORETICULOSIS (7745)
APPENDICULAR MUCOCELE, PSEUDOMYXOMA PERITONEI, CYST (2734)
ASCITES, HEMORRHAGIC, HEPATOMA, OVARIAN CANCER (1450)
BLOOD FLOW, HYDROGEN CLEARANCE, TRANSPERITONEAL EXCHANGE (3244)*

- CALCIUM, DTPA, PLUTONIUM (3252)
- COOLING, UPPER GASTROINTESTINAL HEMORRHAGE (7718)
- CYST, PARASITE, HYDATID (2015)
- DIALYSIS, COMPLICATIONS (4657)
- DIALYSIS, INFECTION (6957)
- DIALYSIS, LIVER, TRAUMA, HEMORRHAGE, CENTRAL HEMATOMA (6836)
- DIALYSIS, PANCREATITIS, GALLSTONES, X-RAY, NECROSIS (5152)
- DIALYSIS, PANCREATITIS, INTERNAL BURN, SHOCK, TRYPSIN INHIBITORS (5150)
- DRAINAGE, ACUTE PANCREATITIS, HEMORRHAGE, NECROSIS (2790)
- EFFUSION, ACUTE PANCREATITIS, ENZYMATIC TOXEMIA, DIALYSIS, HYPOTHERMY, DIALYSIS (5148)
- EMERGENCY PERITONEOSCOPY, TRAUMA (6558)
- FLUID, AMMONIA, APPENDICITIS, ILEUS (6572)
- FLUID, MAST CELLS, HISTAMINE (6283)•
- FLUID FLUX, PLASMA CLEARANCE, SERUM ALBUMIN, RABBIT (6373)
- HEMORRHAGE, ABDOMINAL TRAUMA, SURGERY, HEMATOMA (4909)
- INFECTION, COLON, RECTUM (4270)
- LARGE INTESTINE, APPENDIX, GELATIN DISEASE (4277)
- 125 CELLULAR ABSORPTION, I-LABELED HUMAN SERUM ALBUMIN, MOUSE (7839)
- OSMOSIS, TRANSPORT MECHANISM, OSMOLARITY, NET WATER FLUX, SOLUTE EXCHANGE (4758)•
- OXYGEN CONSUMPTION, BLOOD FLOW, SPLANCHNIC FLOW, INFECTION (3739)
- PARIETAL, PANCREAS, FASCIA, SPLEEN, ANATOMY (3090)
- PERFORATION, ULCER (4619)
- PERITONITIS, ACUTE APPENDICITIS (5937)
- PERITONITIS, APPENDICITIS, PEPTIC ULCER, DIVERTICULITIS (6961)
- PERITONITIS, BILE. ETIOLOGY. CLINICAL ASPECTS (0681)
- PERITONITIS, BILIARY PERFORATION, OPISTHORCHOSIS (6250)
- PERITONITIS, COLONIC PERFORATION, DIVERTICULUM, CANCER (7493)
- PERITONITIS, MECKEL'S DIVERTICULUM, SURGERY, INTESTINAL OBSTRUCTION, NEWBORN INFANT (5050)
- PERITONITIS, NEONATAL, COMPLICATION(2978)
- PERITONITIS, PANCREATITIS, BILIARY TRACT, PERFORATION, NECROSIS (5149)
- PERITONITIS, THERAPY (5389)
- PERITONITIS, ULCER PERFORATION (7165)
- PERMEABILITY, PLASMA CLEARANCE, UREA, P-AMINOHIPPURIC ACID, INSULIN, SERUM ALBUMIN (3242)•
- PNEUMO-, DIAGNOSTIC (4060)
- RECONSTRUCTION, HOMOLOGOUS GRAFT, DURA (5643)
- RECTUM, ANATOMY, PELVIS (2318)
- TRANSPORT MECHANISMS, SOLUTES, FLUID TRANSPORT, SOLVENT DRAG, FILTRATION CLEARANCE (4765)•
- TUMOR, PAREITOGRAPHY, PNEUMOPERITONEUM (5378)

PERITONITIS
- ACUTE ABDOMEN, SURGERY, UTERUS, ILEUS (6702)
- ACUTE APPENDICITIS, ILEUS (7495)
- APPENDICEAL, MEGACOLON, NEONATE (4282)
- APPENDIX RUPTURE (1226)
- BILE, ETIOLOGY, CLINICAL ASPECTS (0681
- BILE, FREE (2081)
- BILE, INTERNAL BILIARY FISTULA, BACTERIAL FLORA, DOG, MAN (3662)•
- BILE DUCT INFLAMMATION, CHOLELITHIASIS, PANCREATICO-BILIARY REFLUX (9197)
- CHRONIC, JEJUNO-ILEITIS, HISTOLOGY, RADIOLOGY (4232)
- CHRONICA FIBROSA ENCAPSULANS, DIAGNOSIS, ILEUS, APPENDICITIS (8764)
- CHYLOUS, TUBERCULOUS, DIAGNOSTIC ERROR, PANCREATIC CYSTS (3517)
- GALLBLADDER, PERFORATION, AGED SUBJECTS (2916)
- GENERALIZED, APPENDICITIS, NEWBORN (4287)
- HEPATIC SECRETION (3568)
- MECKEL'S DIVERTICULUM, GALLSTONE, SMALL INTESTINE (3430)
- MYXOMATOUS, APPENDICITIS (3499)
- NEONATAL, COMPLICATION (2978)
- PERFORATIVE, LACK OF PERFORATION, PATHOGENESIS, THERAPY (9250)
- PREGNANCY, PUERPERIUM (1173)
- PYELORENAL ORIGIN (2249)
- RUPTURED ILEUM, INGUINAL HERNIA, BLUNT TRAUMA (1957)
- SHOCK, SMALL BOWEL OBSTRUCTION, GRAM NEGATIVE SEPSIS (8152)
- STARCH GRANULOMATOUS, SURGICAL GLOVE POWDER (8421)•
- TRASYLOL, TREATMENT (1516)

PERNICIOUS ANEMIA
- ACHLORHYDRIA, BLOOD LOSS, ASPIRIN (6614)•
- ADDISONIAN, IRON ABSORPTION (0759)•
- GASTRIN CONCENTRATIONS, SERUM (1669)•
- MALABSORPTION, VITAMIN B12, FOLIC ACID (0411)•
- PARAPROTEINEMIA, IMMUNOGLOBULIN, CHROMOSOMAL ABBERATION (0413)
- SECRETION, GASTRIC ACID, INTRINSIC FACTOR, HYPERTHYROIDISM, HYPOTHYROIDISM (1668)•
- STOMACH, CARCINOMA, ANTIBODY, ACID (3363)
- STOMACH PATHOLOGY, STOMACH MUCOSA (1025)•
- VITAMIN B12, IMMUNOLOGY (0414)

PEROXISOME
- HALF-LIFE, PROTEIN COMPONENT, CATALASE (5610)
- LIVER, CYTOLOGY, FUNCTION, ENZYMES (5446)
- LIVER, KIDNEY, METABOLISM (3044)

PHARYNX
- DYSPHAGIA DIAGNOSIS (3323)
- ESOPHAGUS, CARCINOMA (1008)
- FUNCTIONAL DISORDERS (3320)
- PARASITOLOGY, WORM, ESOPHAGUS (3013)
- ZENKER'S DIVERTICULUM, DIAGNOSIS, SURGERY (2750)

PHENOBARBITAL
- BLOOD BILIRUBIN, NEWBORN (4401)
- HYPERBILIRUBINEMIA, NEONATE (0539)*
- PROTEIN SYNTHESIS, LIVER, TRACERS (7156)*
- TOXICITY, CARBON TETRACHLORIDE, ENHANCEMENT (8323)*

PHENOBARBITONE
- MICROSOME, ENZYME, LIVER (3046)

PHLEGMASIA
- STOMACH, ACUTE (3352)

PHLEGMON
- JEAN-LOUIS PETIT, BILE DUCT LESIONS (4537)
- JEJUNUM, LARVA, ANISAKIS (0388)

PHOSPHATASE
- ACID, ALKALI, HEPATIC ULTRASTRUCTURE, HEPATITIS (3084)
- ACID, SOLUBLE, MEMBRANE-BOUND, RAT, LIVER LYSOSOME (2278)*
- ALKALINE, ASSAY TECHNIQUE, SMALL INTESTINE, CELIAC DISEASE (3036)*
- ALKALINE, CHRONIC LIVER DISEASES, DIAGNOSIS, PROGNOSIS (4045)
- ALKALINE, INTESTINE, HEPATOBILIARY DISEASE (3675)
- ALKALINE, LIVER FUNCTION, BILIRUBIN, CHOLESTEROL, CONTRAST MEDIA (2465)
- ALKALINE, PLACENTAL, INTESTINAL, MOLECULAR PROPERTIES (2291)
- ALKALINE, SERUM, HEPATOBILIARY TRACT (4044)
- ALKALINE, SMALL INTESTINE, DECIDUAE (0167)
- LIVER, RAT, RELEASE, LYSOSOME, SULFONAMIDE, SULFAPYRIDINE (2413)*
- LIVER FUNCTION, ALCOHOLISM, GASTRITIS (2831)

PHOSPHATE
- INORGANIC, MECHANISM, UNCOUPLERS, LIVER, MITOCHONDRIA (1779)
- LIVER, ENZYME, METABOLISM (2294)

PHOSPHOFRUCTOKINASE ACTIVITY
- THROMBOGENIC DIET, GLUCOLYSIS (2405)

PHOSPHOLIPID
- AMINO ACID, INCORPORATION, LIVER, PREGNANT, RAT (0885)
- ENZYME, LIVER, MITOCHONDRIA (2286)*
- EXCHANGE, LIVER, PHARMACOLOGY (0826)*
- GOLGI APPARATUS, FATTY ACIDS, LIVER (1615)
- LIPID, PHOSPHATIDYL GLYCEROL PHOSPHATE, SYNTHESIS, MITOCHONDRIA, MEMBRANE (2416)*
- LIVER, ASCITES HEPATOMA, PLASMA MEMBRANES (0092)*
- LIVER, METABOLISM, LECITHIN (7107)*
- LIVER, METABOLISM, PROTEIN (3934)*
- LIVER, NUCLEI, NUCLEAR MEMBRANES, METABOLISM, RAT (0011)*
- LIVER, TRIGLYCERIDES, SYNTHESIS (0847)*
- LIVER SLICES, METHY-14C-CHOLINE, METHY-14C-METHIONINE, 1,2-14C-ETHANOLAMINE INCORPORATION, PREGNANT RATS (1752)
- MITOCHONDRIAL MEMBRANE, COMPOSITION, LIVER (2270)*
- PHOSPHATIDYLCHOLINE SYNTHESIS, LIVER, MITOCHONDRIA (2424)
- PHOSPHATIDYLINOSITOL, LIVER, CHARACTERISTICS (7781)*
- PLASMA, FATTY LIVER, CIRRHOSIS (2129)*
- SECRETION, BILE, BILE ACIDS, MAN (0102)*
- SYNTHESIS, LIVER, CHOLINE, METHIONINE (7138)*

PHOSPHORUS
- POISONING, SIMILAR LIVER CHANGES, CYTOTOXIC DRUGS (3623)

PHOSPHORYLASE
- LEUKOCYTE, GLYCOGENOSIS, METABOLISM (3062)
- LIVER, LOBE LIGATION, RAT (1599)

PHOSPHORYLATION
- LIVER, GLUCAGON, HISTONE, INSULIN (2421)*

PHOSVITIN
- LIVER, ESTROGEN, SERINE TRANSFER RNA (0879)

PHOTOSCAN
- LIVER METASTASIS, LYMPHOSARCOMAS (4016)*

PHOTOTHERAPY
- HYPERBILIRUBINEMIA, NEONATE, BLUE LIGHT, BILIVERDIN (6801)
- JAUNDICE, CONGENITAL NONOBSTRUCTIVE NONHEMOLYTIC, INFANT (2037)*, (2038)*

PHYCOMYCOSIS
- GASTRIC, DEBILITATING DISEASES, ANTIFUNGALS (0295)
- INTESTINE, ABDOMINAL WALL (2729)

PHYSIOPATHOLOGY
- DUODENUM, DIGESTION, ABSORPTION (3108)

PIGMENTATION
- POLYPOSIS, GENETICS (1180)

PITRESIN
- LIVER, ANGIOGRAPHY, INTRAHEPATIC PORTAL VASCULATURE (1709)*

PITUITARY GLAND
- HORMONAL REGULATION, TRNA, HYPOPHYSECTOMY, LIVER (6482)

PLACENTA
- BARRIER, PASSAGE, ANTIBODY, SCHISTOSOMA MANSONI (3770)*

PLASMA
- AUSTRALIA ANTIGEN, SERUM GLUTAMIC OXALACETIC TRANSAMINASE, HEPATITIS CARRIER (6862)
- CLEARANCE, INTESTINAL PERMEABILITY, UREA (7058)*
- FIBRIN-STABILIZATION FACTOR, METHODOLOGY, LIVER, KIDNEY DISEASE (2094)
- IRON-BINDING CAPACITY, ORAL OVERLOADING, NORMAL AND HYPERTHYROID PATIENTS (7847)
- LIPID METABOLISM, LIVER, HEPATECTOMY, PARTIAL, RAT (3550)*
- LIPOPROTEIN, LYMPH, RAT (3991)*
- PANCREATITIS, EXPERIMENTAL, DEXTRAN, TREATMENT (4346)*

PLASMA EXPANDER
- ESOPHAGEAL VARICES, RADIOLOGICAL VISUALIZATION, PORTAL HYPERTENSION (0213)

- PLASMA MEMBRANE FRACTION
  - LIVER, ENZYME (2283)•
- PLASMINOGEN
  - DIAGNOSTIC UTILITY, LIVER DISEASE (1392)
- PLEURISY
  - PANCREATITIS, EARLY SYMPTOMS (0527)
- PLICATION
  - STOMACH, WEIGHT REDUCTION (3744)
- PLUTONIUM
  - PERITONEUM, CALCIUM, DTPA (3252)
- PNEUMATOSIS
  - PORTAL VENOUS SYSTEM, PATHOGENESIS, PROGNOSIS (9214)
- PNEUMATOSIS INTESTINALIS
  - ABDOMINAL CYSTS, RETROPERITONEAL AIR, CHILAIDITI SYNDROME (6974)
  - CYSTOIDES, COLON, DIAGNOSIS, THERAPY (6698)
  - INTESTINE, GAS CYST, SURGICAL TREATMENT (2529)
  - SYMPTOMATOLOGY, RADIOLOGY, ETIOLOGY (8909)
- PNEUMOGASTROGRAPHY
  - GASTRODUODENAL ULCER, PERFORATION, DIAGNOSIS, TECHNIQUE (0219)
- POISON
  - ACTIVATED CHARCOAL, ASPIRIN, PENTOBARBITAL, LIVER, GASTROINTESTINAL TRACT (5639)
  - CARBON MONOXIDE, BILIRUBIN, HEME CATABOLISM, RAT (4825)•
  - CARBON TETRACHLORIDE, LIVER, ENZYMES (5425)•
  - CARBON TETRACHLORIDE, LIVER DAMAGE, HEPATOCYTE WALL, TAURINE N-CARBODITHIOATE (6080)
  - CARBON TETRACHLORIDE, LIVER DAMAGE, MAN (8335)
  - CARBON TETRACHLORIDE, LIVER NECROSIS, ENDOXAN (9096)
  - CCL4, ASPARTATE-AMINOTRANSFERASE ISOENZYMES, LIVER (6850)
  - CCL4, VITAMIN-PROTEIN PROFILE, LIVER, NUCLEIC ACIDS (7112)•
  - FOOD, BOTULISM (9216)
  - FOOD, DIARRHEA, STAPHYLOCOCCI, EPIDEMIC, HEMOLYSINS, BACTERIOPHAGE (5353)
  - FOOD, INTESTINAL MICROFLORA, PATHOGENOUS ENTEROCOCCUS (7724)
  - FOOD, SALMONELLA INFECTIONS (7706)
  - FOOD, SMALL INTESTINE, CLOSTRIDIUM, DIARRHEA (4884)
  - FUSEL OIL, TUMORS, LIVER PARENCHYMA, ALCOHOL, RAT (5226)
  - HYPOGLYCIN, TOXICITY, METABOLISM (5249)
  - LEAD, LIVER CELL ALTERATIONS, MAN (9103)
  - LIVER, CHLOROFORM, RETROSINE (8341)
  - METHYL ALCOHOL (3599)
  - MUSHROOM, ACUTE NON-VIRAL HEPATITIS, CARBOHYDRATE METABOLISM (6066)
  - MUSHROOM, PHALLOIDIEN HEPATITIS, DIARRHEA (5332)
  - NICOTINE, COTININE, METABOLISM, LIVER, MOUSE (4828)•
  - NICOTINE, DUODENUM, STOMACH, CONTRACTION (4801)
  - NICOTINE, GASTRIC SECRETION, RAT (5542)
  - NICOTINE, HEPATOCYTE, TRANSMEMBRANE POTENTIAL, CATECHOLAMINE (4782)
  - NICOTINE, SITE OF ACTION, STOMACH, DUODENUM, CONTRACTILITY, DOG (4793)•
  - NICOTINE, STOMACH, MUCOSA, SECRETION (4809)
  - NICOTINE, STOMACH, SECRETION, FISTULA (4998)
  - NICOTINE, TRYPTOPHAN PYRROLASE, LIVER (5466)
  - PASTRY CREAM, ENTEROTOXIC STAPHYCOCCUS EPIDEMIC (9229)
  - PESTICIDE, LIVER GLYCOGEN, RAT (7979)
  - PHALLOIDIN, MG2+-ATPASE, (K+-NA+)-ATPASE, K+-DEPENDENT P-NITROPHENYL PHOSPHATASE, PLASMA MEMBRANES, LIVER, RAT (3203)
  - 3-METHYLCHOLANTHRENE, AGE FACTOR, RAT (5277)•
  - 2,4-DINITROPHENOL, LIVER, ACID SOLUBLE NUCLEOTIDES (8340)
- POLYACRYLAMIDE GEL
  - ELECTROPHORESIS, COLON, SECRETION, LYSOGENIC FACTOR, RABBIT (0170)
- POLYARTERITIS NODOSA
  - GALLBLADDER, SURGERY (3686)
- POLYARTHRITIS
  - HEPATITIS, RHEUMATOID, BIOPSY (2083)•
- POLYCHONDRITIS
  - ULCERATIVE COLITIS, POLYARTHRITIS (2014)
- POLYCYSTIC DISEASE
  - HEPATO-RENAL (2848)
- POLYCYSTIC KIDNEY DISEASE
  - CONGENITAL HEPATIC FIBROSIS, ESOPHAGEAL HEMORRHAGE, CHILD (0266)
- POLYP
  - ADENOMA, STOMACH (3348)
  - ADENOMATOUS, VILLI CHANGE, COLON (1974)•
  - APPENDIX, ANATOMICOPATHOLOGY, RADIOLOGY, HISTOLOGY (0444)
  - COLON, ALLERGY, CHILDREN (8187)
  - COLON, RECTUM, CANCER (2707)
  - GASTRIC, ADENOMATOUS, MULTIPLE, FOCAL CHANGE, DOG (0301)
  - HIGH-LYING, RECTOSIGMOID, TRANSRECTAL REMOVAL (0492)
  - ILEAL, CARCINOID SYNDROME (4223)
  - LARGE INTESTINE, X-RAY DIAGNOSIS, ADENOMATOUS TUMOR (1290)
  - RECTOCOLITIS, CARCINOMA, VILLOUS TUMOR (6706)
  - RECTUM, CHILDREN (2723)
  - RETENTION, COLON, RECTUM, CHILDREN(8189)
- POLYPEPTIDE
  - GASTRIC-ACID SECRETION (3142)
  - LIVER, MICROSOME, PROTEOLYSIS (3063)
  - PROTEOLYSIS, LIVER, RIBOSOME (3060)
- POLYPOSIS
  - COLI, CARCINOMA, GENES (2930)
  - COLI, JUVENILE (4290)
  - COLON, FAMILIAL, LYMPHOID HYPERPLASIUM, ILEUM (2669)

- COLON, FAMILIAL, PREVENTATIVE SURGERY (8968)
- COLON, RECTUM, SURGERY (7460)
- COLONIC, MULTIPLE MANDIBULAR OSTEOMAS, GARDNER'S SYNDROME (0484)
- DETECTION, SIGMOIDOSCOPY (2499)•
- FAMILIAL, LARGE INTESTINE, ADENOMATOUS TUMOR, PEUTZ-JEGHERS SYNDROME (1229)
- FAMILIAL, LARGE INTESTINE, SURGICAL TREATMENT (1230)
- GASTROINTESTINAL (2989)
- GASTROINTESTINAL, PIGMENTATION, GENETICS (1180)
- JEJUNUM, PEUTZ-JEGHER'S SYNDROME (6680)
- LARGE INTESTINE, CARCINOMA, RESECTION (2737)
- MULTIPLE, GASTRITIS, REGIONAL ILEITIS (3364)
- MULTIPLE, PEUTZ-JEGHERS SYNDROME, PLURICYSTIC RENAL DISEASE (1948)
- MULTIPLE, STOMACH, GASTRITIS (1083)
- MULTIPLE, SURGICAL MANAGEMENT, CANCER, RETAINED BOWEL SEGMENT (3472)
- PEUTZ-JEGHERS SYNDROME, HISTOPATHOLOGY, SYMPTOMATOLOGY (8908)
- PSEUDO, ULCERATIVE COLITIS (0496)•
- RECTUM, COLON, RADIOLOGY (2728)
- STOMACH, CANCERIZATION, PATHOGENESIS (8838)

OLYRIBOSOME
- DISAGGREGATION, TANNIC ACID, LIVER, RAT (3620)
- RAT LIVER, DEGRADATION, BENZENE (7927)

OLYSACCHARIDE
- CELL WALL, SALMONELLA (2224)
- MUCOPOLYSACCHARIDE, SYNTHESIS, GASTRIC ULCER, PREVENTION, RAT (3345)

OLYSOME
- LIVER, GLYCOPROTEIN, RAT (1592)
- LIVER, P-CHLOROMERCURIBENZOATE (1756)
- STRUCTURE, MAGNESIUM DEFICIENCY, RIBONUCLEASE, ENZYMES AND INHIBITORS (1708)•

RPHYRIA
- ACUTE, DELTA-AMINOLEVULINIC ACID (8269)•
- CUTANEA TARDA, BIOPSY SMEARS, FLUORESCENT MICROSCOPY (2802)•
- CUTANEA TARDA, LIVER, IRON METABOLISM (2071)
- CUTANEA TARDA, PORPHYRINS, LIVER BIOPSY (1285)
- INDUCED, BILE, LIVER, PIG (1758)
- LIVER, MITOCHONDRIA, ENZYME (0553)
- METABOLISM, LIVER, POISONING (6839)

RPHYROGENIC AGENT
- 2-ALLY-2-ISOPROPYLACETAMIDE, HEME, CYTOCHROME, MICROSOME, LIVER (3041)

RTACAVAL SHUNT
- CIRRHOSIS, COLON, AEROBIC, ANAEROBIC, MICROFLORA (6941)•
- EMERGENCY, HEMORRHAGE, CIRRHOSIS (4513)
- GASTRIC HYPERSECRETION, INTESTINAL PHASE, HORMONE (6392)•
- HEPATIC CIRRHOSIS, CEREBRAL BLOOD FLOW, METABOLISM (1665)
- LIVER, AMMONIA METABOLISM, CIRRHOSIS (2134)•
- LIVER, ISCHEMIA, COAGULATION, SERUM ENZYME, THROMBIN TIME, PLATELET (6763)•
- MEDICAL TREATMENT, CIRRHOSIS, ASCITES ENCEPHALOPATHY (1441)•
- PORTAL HYPERTENSION, LIVER, ARTERIALIZATION (6933)•
- RENAL FAILURE, ALCOHOLIC CIRRHOSIS (6876)•
- SERINE METABOLISM, RAT (1704)•

PORTAL CIRCULATION
- HEMODYNAMICS, DIAGNOSIS, LIVER DISEASE (0145)
- INFERIOR VENA CAVA, PORTAL VEIN, THROMBOSIS, TREATMENT (2217)
- LIVER, CAT, RABBIT (1793)
- THROMBOSIS, ESOPHAGUS, BLEEDING, MESENTERIC INFARCTION, POLYCYTHEMIA VERA (2970)

PORTAL HYPERTENSION
- ANEURYSM, SPLENIC ARTERY (2979)
- ANGIOGRAPHY, BLOOD FLOW (1359)
- ARTERIALIZATION, LIVER, PORTACAVAL SHUNT (6780)•
- CIRRHOSIS, TREATMENT (2904)
- COLONIC VARICES, HEMORRHAGE, BARIUM ENEMA EXAMINATION (8299)
- ESOPHAGEAL VARICES, RADIOLOGICAL VISUALIZATION, PLASMAEXPANDER (0213)
- ESOPHAGEAL VEIN, PORTAL VEIN, MORPHOLOGY, SURGERY (7540)
- EXTRAHEPATIC, PREGNANCY (3583)
- GENERAL MEASURES (4507)
- HEMORRHAGE, ESOPHAGUS, STOMACH (7648)
- HEPATIC CIRRHOSIS, PROGNOSIS (4510)
- ILEAL VARICES, HEMORRHAGE, LIVER CIRRHOSIS (9155)
- INTESTINAL ABSORPTION, AMMONIUM CHLORIDE, LIVER CIRRHOSIS (9162)
- LIGATION, CHILDREN, ESOPHAGEAL VARICE, PROPHYLAXIS (6812)
- LIVER, BILE, CCL4, DOG (7557)
- LIVER, CIRRHOSIS, OBSTRUCTION, PLASMA VOLUME (1699)•
- LIVER, CIRRHOSIS, SPLEEN (7546)
- MECHANISM, CHRONIC HEPATITIS, CIRRHOSIS (2242)
- NORMAL LIVER MORPHOLOGY (6779)•
- PORTACAVAL SHUNT, COMPLICATIONS, LIVER CIRRHOSIS (9085)
- SURGERY, ETIOLOGY, CHILDREN (9055)
- SURGERY, LIVER, CHILDREN (4397)
- SURGERY, SHUNTING, ESOPHAGUS (3752)
- SURGICAL TREATMENT, CRITICAL STUDY(2056)

PORTAL VEIN
- FISTULA, HEMOBILIA, HEPATIC ARTERY(3586)
- FISTULA, HEPATIC ARTERY, PATHOPHYSIOLOGY (2980)
- INFARCTION, SMALL INTESTINE (2219)
- SMOOTH MUSCLE, METABOLISM, MITOCHONDRIA (3043)

POTASSIUM
- CONCENTRATION, MALARIA EFFECT, MONKEY (2273)•

  - HEPATIC CANCER, ZINC, COPPER (5698)
  - LIVER, METABOLISM (1740)
  - RELEASE, LIVER, INSULIN, SH-COMPOUND (1743)
  - SODIUM, MEDIUM, SMOOTH MUSCLE, CONTRACTION, ANOXIA (2475)
  - TAENIA COLI, CALCIUM, TENSION (2332)•
  - THERAPY, GASTROINTESTINAL LESIONS (3716)
- POTASSIUM CHLORIDE
  - ULCER GASTRIC, HISTOLOGY (2655)
- POTENTIAL DIFFERENCE
  - STOMACH, BILE, ALCOHOL, ASPIRIN (3705)•
- POULTRY
  - INFECTIOUS RESERVOIR, BACTERIA (9245)
- PRECIPITIN
  - STOOL, GASTROINTESTINAL SENSITIVITY, DIARRHEA (2949)•
- PREGNANCY
  - ABSORPTION, SMALL INTESTINE, LACTATION (4753)
  - ACUTE HEPATOSTEATOSIS (2827)
  - ANEMIA, SPRUE (7449)
  - ANEMIA, THERAPY, IRON, FOLIC ACID (2813)
  - APPENDICITIS, OVARIAN SURGERY, PROGESTERONE, LABOR, ILEUS, ABORTION (5092)
  - APPENDICITIS, STERILITY (3473)
  - CHOLESTASIS, ESTROGEN INDUCTION (6783)
  - COMPLICATION, FIBROMA, COLON (2698)
  - CROHN'S DISEASE, STERILITY (5883)
  - DISEASE, GALLBLADDER, PANCREAS, SURGERY (2931)
  - EMESIS, HIATAL HERNIA, ESOPHAGEAL ULCER (4100)
  - GASTRIC SECRETION, INDIAN WOMEN (1064)
  - GASTRIC ULCER, PERFORATION, STOMACH (2648)
  - HEMORRHOID, RECTUM, EPIDEMIOLOGY (5102)
  - ILEUS, PERITONITIS (1173)
  - INFECTIOUS HEPATITIS, NEWBORN INFANT (3630)
  - INFECTIOUS HEPATITIS, PUERPERIUM (1428)
  - JAUNDICE, ECLAMPSIA, CANCER, VIRAL HEPATITIS, HEMOLYTIC ANEMIA, FATTY LIVER, TETRACYCLINE THERAPY (5192)
  - JAUNDICE, HEPATITIS (5209)
  - KININS, KININOGEN (4504)•
  - LIPID, LIVER (5245)
  - LIVER, JAUNDICE (4422)
  - LIVER ATROPHY, LIVER BIOPSY, PLASMAPHERESIS, CYTOPLASMIC NECROSIS (5293)
  - OVULATION INHIBITORS, ICTERUS (4400)
  - PEPTIC ULCER (4211)
  - PEPTIC ULCER, HEMORRHAGE, PERFORATION, SURGERY (0352)
  - PORTAL HYPERTENSION (3583)
  - PROTEIN, CHOLESTASIS, LIVER, ICTERUS (4426)
  - RAT, LIVER, NUCLEOTIDE, ENZYME (4269)
  - RECTOSIGMOID CARCINOMA (5924)
  - RECURRENT CHOLESTASIS, CHOLESTYRAMINE (7553)
  - RECURRENT INTRAHEPATIC CHOLESTASIS (4439)
  - TOXEMIA, HEPATIC HEMORRHAGE (6835)•
  - TOXEMIA, LIVER, RUPTURE (5247)
  - ULCERATIVE COLITIS (4317)
  - VIRAL HEPATITIS (4492)
  - VIRAL HEPATITIS, LIVER, SAUDI ARARIA (2105)•
- PROBE
  - MOUSSEAU-BARBIN'S, PALLIATIVE THERAPY, TUMOR, ESOPHAGUS (2579)
- PROCTITIS
  - AMEBIC, ULCERATIVE, METRONIDAZOLE, SIDE EFFECTS (0493)
  - GRANULAR, SALAZOPYRIN TREATMENT (4296)
- PROCTOCOLITIS
  - SURGERY (4310)
- PROLAPSE
  - GASTRIC MUCOSA, DUODENUM, RADIOLOGY, DIAGNOSIS (2592)
  - MUCOUS GASTROJEJUNAL, HEMORRHAGE, RESECTION, HEMATEMESIS, MELENA (2593)
  - RECTAL, ANATOMY, SURGERY (4285)
  - RECTAL, RESECTION, COLONIC, RECTAL FIXATION (0481)
  - RECTUM, SURGERY, RADIOLOGY (8186)
- PROPHYLAXIS
  - GAMMA GLOBULIN, HEPATITIS (4487)
  - GASTRECTOMY, MOTILITY (7333)
  - GASTROINTESTINAL BLEEDING, DISTRESS, SULPIRIDE (7682)•
- PROSTAGLANDIN E1
  - MOTILITY, GASTRIC POUCH, STOMACH (1648)•
  - NOREPINEPHRINE, CIRCULATION, GASTRIC MUCOSA (2485)•
  - SMALL-INTESTINAL CONTRACTIONS, MORPHINE ANTAGONISM, GUINEA-PIGS (0041)•
  - UPTAKE, METABOLISM, LIVER (7913)•
- PROTEIN
  - ABSORPTION, AMINO ACID, DIGESTION (7054)•
  - ABSORPTION, DIGESTION, MAN (4768), (4769)
  - ABSORPTION, INTESTINE, GELATIN, MILK (5482)•
  - ABSORPTION, TANNIC ACID (7076)
  - ACUTE PANCREATITIS, CHOLEPANCREATITIS, TRYPSIN, BLOOD (2787)
  - ACYLATED, REDOX PIGMENT, LIVER, MITOCHONDRIA (6325)
  - ALANINE INCORPORATION, LIVER, VITAMIN A, NACL (3178)
  - ALBUMIN, BILIRUBIN, TOXICITY, DISTRIBUTION (7072)
  - ALBUMIN, CIRRHOSIS, BILIRUBIN, ASCITE, PROGNOSIS (6899)
  - ALBUMIN, GASTROENTERIC CLEARANCE, CIRRHOSIS, HEPATITIS (6112)•
  - ALBUMIN, PANCREATITIS, AMYLASE (5156)
  - ALBUMIN METABOLISM, LIVER, CIRRHOSIS (6902)
  - AMYLOID, LIVER, HEPATOCYTE, DUCK (5184)
  - ANTIGEN, CHOLERA, IMMUNOLOGY (5107)
  - ANTIHEMOPHILIC GLOBULINS, GASTRIC

RESECTION, HEMOPHILIA A, DUODENAL ULCER, TRANSFUSIONS (6162)
BETA-LA-GLOBULIN-(C'3), CHRONIC HEPATITIS, RHEUMATIC DISEASE, SCLERODERMA, KIDNEY DISEASE (6105)
BILE, CHOLECYSTITIS, DIAGNOSIS (2915)
BINDING, BILIRUBIN, SERUM ALBUMIN (4859)
BINDING, CHROMAFFIN SYSTEM, INTRINSIC FACTOR, ENTEROCHROMAFFIN CELLS, GASTRIC MUCOSA, POLYPEPTIDE HORMONES (5414)•
BIOSYNTHESIS, LIPID, LIVER, RESECTION (3177)
BIOSYNTHESIS, LIVER, CELL NUCLEUS, RAT (0155)
BIOSYNTHESIS, NUCLEUS, LIVER, METALS, RAT (4830)•
BLOOD, BONE MARROW, CIRRHOSIS (7641)
BRADYKININ, BLOOD, ENDOTOXIC SHOCK, DOG (3243)•
CALORIE, MALNUTRITION, KWASHIORKOR (2692)
CATABOLISM, GASTROINTESTINAL TRACT, X-RAY, MICE (2486)
CERULEIN, CHOLANGIOCYSTOGRAPHY, GUINEA PIG, CONTRAST MEDIA (2519)
CORE PARTICLE, RNA, RIBOSOME, RECONSTITUTION, LIVER, RATE (2310)
CORTISOL METABOLITE BINDER I, DIMETHYLAMINOAZOBENZENE BINDING PROTEIN, CYTOSOL, LIVER (3070)
DEFICIENCY, ETHANOL, DL-ETHIONINE, PANCREAS, LEUCINE AMINOPEPTIDASE, RAT (1683)•
DEFICIENCY, INCIDENCE, DIET, INDIA (6215)
DEFICIENCY, LIVER, RNA TURNOVER, RAT (5561)•
DEFICIENCY, LIVER INJURY, DIET (5250)
DEPLETION, HEPATIC PLASMA PROTEIN, ALBUMIN (7122)•
DIETARY, GASTRIC SECRETION, ULCER (4168)
DNA SYNTHESIS, PANCREATIC ACINAR CELL DIFFERENTIATION, EMBRYO, ORGAN CULTURE, RAT (0749)•
DRUG EFFECT, TRACER TECHNIQUE, ULCER (2488)
DYNAMICS, LIVER, BILE, SECRETION (7168)
ENZYMATIC, ELECTROPHORETIC BEHAVIOR, X-RAY, LIVER, HEART, RAT (2431)
ENZYME, INTESTINE, ABSORPTION (4767)
FACTOR, LIVER, INHIBITION, LIPASE, PANCREAS (6303)•
FETAL, CORRELATION WITH HEPATIC DISEASE (2060)
FETAL, HEPATOMA (3557)
FRACTION, LIVER, CIRRHOSIS, HEPATITIS, TRANSAMINASE, ALBUMIN, GAMMA-GLOBULIN, COAGULATION (4932)
FRACTIONATION, AMINO ACIDS, ABSORPTION (5483)•
GAMMA GLOBULIN, ACUTE VIRAL HEPATITIS, CIRRHOSIS, AMINO ACID (6013)
GAMMA GLOBULIN, CHRONIC HEPATITIS, LIVER (6107)
GAMMA GLOBULIN, MALABSORPTION, TETANY, SMALL INTESTINE (5077)
GAMMA GLOBULIN, METABOLISM, LIVER DISEASE (3643)•
GASTROENTEROPATHY, CORTICOSTEROID (4261)
GASTROFERRIN, GLYCOPROTEIN, GASTRIC JUICE (7785)•
GLUTEN, WHEAT, RYE, CELIAC DISEASE, CHILDREN (2691)
GLYCO-, CHRONIC HEPATITIS, LIVER, BLOOD, ENDOSCOPY, LIVER BIOPSY, DIABETICS, CIRRHOSIS, PROTEIN-BOUND POLYSACCHARIDES (5647)•
GLYCO-, GASTRIC MUCOSA, WHALE (5547)
GLYCO-, INTESTINAL MUCOSA, GALACTOSYLTRANSFERASE, INCORPORATION, CYTOPLASMIC FRACTIONS, RAT (4742)•
GLYCO-, LIVER, ENZYME, N-ACETYLGLUCOSAMINE TRANSFERASE, EXOGENOUS ACCEPTOR, ENDOGENOUS ACCEPTOR (5419)•
GLYCO-, SERUM, LIVER TRAUMA (7551)
GLYCOPEPTIDE, COLOSTRUM (3873)
GOLGI APPARATUS, LIVER, RAT (2297)
HEAT DAMAGE, LYSINE, ABSORPTION (7066)•
HEME, CATABOLISM, BILIRUBIN, CARBON MONOXIDE, RAT (4825)•
HEPARIN PROTEOGLYCAN, ISOLATION, LIVER CAPSULE, PIG (2303)
HEPATIC, DEFICIENCY, ANION-BINDING, HYPERBILIRUBINEMIA (0098)•
HEPATIC HEMOPROTEINS, CYTOCHROME P-450, OXYGEN ACTIVATION, ABSORPTION SPECTRUM (4822)•
HISTONE, CHANGES, REGENERATION, DEGENERATION, PANCREAS, RAT (5553)•
HISTONE UPTAKE, PERFUSED LIVER, INTESTINE, KIDNEY (6457)
HOOKWORM, HEMOGLOBIN, CYTOCHEMISTRY (3794)•
HYPOALBUMINEMIA, ASCITES, PORTAL HYPERTENSION, HEPATIC LYMPH (6217)
IMMUNOGLOBULIN, BOVINE SERUM, MILK, INCUBATION, PROTEASE ACTIVITY, STOOLS, GASTRIC JUICE, DUODENAL JUICE (5633)
IMMUNOGLOBULIN, CATABOLISM, CROHN'S DISEASE, PROTEIN LOSS, IRON DEXTRAN, STOOL EXCRETION (5872)•
IMMUNOGLOBULIN, CHRONIC HEPATITIS, CIRRHOSIS, IGA, IGM, IGG, DIAGNOSIS (6115)•
IMMUNOGLOBULIN, CHRONIC HEPATITIS, CIRRHOSIS, MITOCHONDRIA (5276)
IMMUNOGLOBULIN, HEPATITIS, TRANSAMINASE (5271)
IMMUNOGLOBULIN, SERUM, CIRRHOSIS, IGG, IGA, IGM (5688)
INTESTINAL ABSORPTION, ENTEROCOLITIS (7043)
INTESTINE, ACTIN, SMOOTH MUSCLE (3231)
LIPO-, CHOLOSTASIS, PHOSPHOLIPIDS, ANTISERUM, ANTIGENS, ALBUMIN (5310)
LIPO-, LYMPH, INTESTINE, ULTRASTRUCTURE TRANSPORT (5417)•
LIPO-, LYSOSOMES, HEPATIC, RENAL, ISOLATION (6338)

LIPO-, METABOLISM, FATTY LIVER, MYOSINOSITOL (7580)•
LIVER, ACUTE CHOLECYSTITIS, ELECTROPHORESIS (6154)
LIVER, CIRRHOSIS, ENZYME (4519)
LIVER, DNA, RAT (4718)
LIVER, DNA, RNA (3948)•
LIVER, METABOLISM, NON-HISTONE PROTEINS, SYNTHESIS, HEPATOMA 223 (2033)•
LIVER, METABOLISM, NUCLEIC ACID, ENZYME (1710)•
LIVER, PHOSPHOLIPID, METABOLISM (3934)•
LIVER, RAT, TRACER TECHNIQUE, CELL CULTURE (2463)
LIVER, SOLUBLE, AZODYE CARCINOGENS, AMINO ACID RESIDUE, TRACER STUDIES (2406)•
LIVER, SOLUBLE, DEGRADATION (7899)•
LIVER, SYNTHESIS, CELL-FREE SYSTEMS (7149)•
LIVER, VALINE, INSULIN INHIBITION, PROTEOLYSIS, RAT (4837)•
LIVER ISOZYME, RAT, GUANINE DEAMINASE (5453)
LIVER REGENERATION, RNA (5592)
LOSS, ENTEROPATHY, RETAINED INTESTINAL TUBE (2696)
LOSS, GASTROPATHY (2618)
LOSS, MALABSORPTION SYNDROME, ENTEROPATHY (0420)
LOW INTAKE, E.COLI INFECTION, PATAS MONKEY (8447)
LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)•
MALNUTRITION, BIAFRAN CHILDREN (4642)
MALNUTRITION, BIAFRAN CHILDREN, ANEMIA, CARDIOPATHY, CONVULSION (5340)
MALNUTRITION, DIMETHOATE, ACUTE ORAL TOXICITY, RAT (6995)
MALNUTRITION, MALABSORPTION, SMALL INTESTINE (5377)
MALNUTRITION, PANCREAS (5360)
MALNUTRITION, PATHOLOGY, BIAFRAN CHILDREN (4643)
MALNUTRITION, WEIGHT, MORTALITY, SENEGALESE CHILDREN (5349)
METABOLISM, CIRRHOSIS, DIET (5299)
METABOLISM, DNA, LIVER AUTOTRANSPLANTATION, RAT (0817)•
METABOLISM, LIVER (1758)
METABOLISM, PEPTIC ULCER, STEROID HORMONE (5849)
METHEMALBUMIN, HEMORRHAGIC PANCREATITIS (7265)
MICROSOMAL SYNTHESIS, FATTY LIVER (6848)
MITOCHONDRIA, LIVER, MEMBRANE (6301)•
NUCLEIC ACID, SYNTHESIS, LIVER (0726)•
NUCLEO-, LIVER MICROSOMES (7048)
NUCLEOHISTONE, LIVER, CIRCULAR DICHROISM (6329)
NUTRITION, HEPATO-INTESTINAL CIRCULATION (7694)
PANCREAS, ENZYME DIET (1573)•
PEPTIDE, NEW, BILIARY PATHWAYS (4534)
PLASMA, COPPER, METABOLISM, LIVER (0156)
PLASMA ALBUMIN, SYNTHESIS, PROTEIN DIETS (0726)•
POLYGLOBULISM, HEPATOMA, ERYTHROCYTOSIS, ELECTROPHORESIS, LIVER BIOPSY (5189)
PREGNANCY, CHOLESTASIS, LIVER, ICTERUS (4426)
PRIMARY LYMPHANGIECTATIC, GASTROENTEROPATHY, EOSINOPHILIA (7734)
REABSORPTION, DOG (8561)
RIBONUCLEASE, PANCREAS, BOVINE (4750)
RIBONUCLEIC ACID, SYNTHESIS, EDCYSTERONE, OROTIC ACID, ACTINOMYCIN D (0857)
RIBONUCLEO-, LIVER, POLYSOMES, NUCLEI (6311)
SECRETION, PANCREAS, TRYPSIN (3854)
SERINE TRANSFER RNA, LIVER, PHOSVITIN (0879)
SERUM, ALBUMIN, METABOLISM, CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
SERUM, BILE, ELECTROPHORESIS, IMMUNODIFFUSION (0095)•
SERUM, ELECTROPHORESIS, CHRONIC HEPATITIS, CIRRHOSIS, FATTY LIVER, GLOBULIN, ALBUMIN (5212)
SERUM, LIVER CIRRHOSIS, BIDIMENSIONAL ELECTROPHORESIS (9169)
SERUM, MORRIS HEPATOMA (6762)•
SERUM, PANCREATITIS, PANCREATIC JUICE, TRYPSIN (5977)
SERUM ALPHA 1-FETOPROTEIN, CANCER, LIVER (2073)
STARVATION, POLYSOMES, LIVER, RAT (0127)
STOMACH, CANCER, BLOOD (2589)
SYNTHESIS, CIRRHOSIS, ANABOLIC STEROIDS, LIVER FUNCTION TESTS (4505)•
SYNTHESIS, CIRRHOSIS, BLOOD CLOTTING FACTORS (8389)
SYNTHESIS, HEPATITIS, DNA VIRUS, RNA VIRUS, ANTINUCLEAR ANTIBODIES, CELL CULTURES (5257)
SYNTHESIS, INHIBITORY EFFECTS OF PH5 ENZYME, RAT LIVER (1749)
SYNTHESIS, INITIATION, LIVER, RAT (7817)
SYNTHESIS, LIVER, HYDRAZINE (3586)
SYNTHESIS, LIVER, INDOSPICENE, METABOLISM (5568)•
SYNTHESIS, LIVER, MAGNESIUM, ALBUMIN (6438)•
SYNTHESIS, LIVER, MICROSOMAL FACTOR (2064)
SYNTHESIS, LIVER, PHENOBARBITAL (7156)•
SYNTHESIS, LIVER, RNA, AMINO-ACID INCORPORATION, SYNTHESIS INHIBITOR, RAT (5600)
SYNTHESIS, LIVER, SERUM ALBUMIN, SULFATE, ANABOLISM, TRACER STUDIES (2408)•
SYNTHESIS, LIVER, WARFARIN, VITAMIN K (8662)
SYNTHESIS, LIVER RIBOSOME, RAT (7950)

  SYNTHESIS, MITOCHONDRIA, MICROSOMES, ASPARAGINASE INHIBITION (7136)•
  SYNTHESIS, NECROSIS, CCL4-DAMAGE, AUTORADIOGRAPHY (8325)•
  SYNTHESIS, PANCREAS, SECRETION, FERRETS, RATS (0808)•
  SYNTHESIS, PANCREATITIS (4345)•
  SYNTHESIS, PARTIAL HEPATECTOMY, DNA REPLICATION, KINASES, RIBONUCLEASE REDUCTASE, ANTIBIOTIC INHIBITION (4831)•
  SYNTHESIS, POLYSOMES, LIVER (8642)
  SYNTHESIS, RAT, RADIOLOGY, PARTIAL HEPATECTOMY, CELL CULTURE (2462)
  SYNTHESIS, SERUM, LIVER, METHYLCOBALAMIN, RAT (4819)•
  SYNTHESIS, SMALL INTESTINE (0162)•
  SYNTHESIS, THIAMINE DEFICIENT DIET, POLYSOME, LIVER, RAT (0134)
  THYMIDINE TRIPHOSPHATE, METABOLISM, ENZYME, HEPATOMA, RAT (2043)
  TRANSFER RNA, LIVER RIBOSOMES, POLYURIDILIC ACID (0880)
  TRIPEPTIDE, GLUTATHIONE, OXIDATION, HOMOGENATE, LIVER, RAT (5586)•
  TURNOVER, ENZYMES, TEMPLATE STABILITY, INTESTINE, EPITHELIAL CELLS (4692)•
  TURNOVER, LIVER MITOCHONDRIA, TRIIODOTHYRONINE (6291)•
  TURNOVER, OROTIC ACID, RAT LIVER (7937)
  WATER-SOLUBLE, MECONIUM, ILEUS (5450)
  YEAST CONCENTRATE, HEPATOCYTE (3821)
PROTEOLYSIS
  INDIGESTION, PANCREATIC ENZYMES, QUINOLINE DERIVATIVES (6417)
  LIVER, POLYPEPTIDE, MICROSOME (3063)
  POLYPEPTIDE, LIVER, RIBOSOME (3060)
PROTHIONAMID
  RIFAMPICINE, HEPATOBILIARY EFFECTS, RAT (5229)
PROTHROMBIN
  BIOSYNTHESIS, CYCLOHEXIMIDE INHIBITION, VITAMIN K, LIVER, RAT (3201)
PRURITUS
  ANUS, SURGERY (2726)
PSEUDOCYST
  BILE DUCT, PATHOGENESIS, DIAGNOSIS, THERAPY (9191)
  DIAGNOSIS, PANCREAS, SURGERY (2775)
  PANCREAS (8233)
  PANCREAS, FALSE ANEURYSM, HEPATIC ARTERY, SURGERY (8236)
  PANCREAS, POSTTRAUMATIC, POSTPANCREATITIS, ANASTOMOSIS (2779)
  PANCREAS, SURGERY, MAN (0504)
  POSTTRAUMATIC, PANCREAS, GASTROINTESTINAL BLEEDING (4333)
PSEUDOLYMPHOMA
  GASTRITIS, STOMACH (1865)
PSYCHOSOMATIC
  DIGESTIVE TRACT (4625)
  GASTROINTESTINAL DISORDER, SPASM, DIARRHEA (6204)
  SYMPTOMS, STEATORRHEA, CROHN'S DISEASE (7438)•
PULMONARY DISEASE
  TRANSFER DEFECT, CELIAC DISEASE (2684)•
PURINE
  SYNTHESIS, BRAIN, LIVER, RAT (2443)
PUROMYCIN
  CHOLESTEROL BIOSYNTHESIS, LIVER, IRRADIATION, ENDOCRINE STATE (0827)•
PYELOGRAPHY
  OPACIFICATION, GALLBLADDER (1820)
PYLEPHLEBITIS
  APPENDICITIS (3494)
PYLORIC ANTRUM
  ECTOPIC JUNCTION, BILE-DUCT, CHOLANGIOGRAPHY, ULCER (6667)
PYLORIC STENOSIS
  CONGENITAL, HYPERTROPHIC, SURGERY (1094)
  SKELETAL MUSCLE, WATER AND ELECTROLYTE CONTENT (2583)•
PYLOROPLASTY
  ANTRUM, GASTRIN, PRESSURE, STOMACH (1637)
  DIARRHEA, GASTROENTEROSTOMY, VAGOTOMY (1902)•
  DIARRHEA, VAGOTOMY, PEPTIC ULCER, GASTROJEJUNOSTOMY (2642)
  DUODENAL ULCER, Z INCISION, PYLORIC VEIN (6623)
  GASTRODUODENAL ULCERS, VAGOTOMY, VAGAL STIMULATION (6627)
  POST-, GASTRIC EMPTYING, VAGOTOMY (3370)
  RADIOLOGICAL ASSESSMENT, DUODENAL ULCER (2610)
  STOMACH, PEPTIC ULCER (1030)
  VAGOTOMY, GASTRIC MUCOSA, PEPTIC CELLS (0734)•
  VAGOTOMY, METABOLIC EFFECTS, CLINICAL EFFECTS (1069)
  VAGOTOMY, PEPTIC ULCER, CHILDREN (8117)
  VAGOTOMY, TREATMENT, PERFORATION, ULCERS, DUODENUM (0350)
PYLORUS
  ACID, SECRETION, GASTRITIS (3362)
  ACTIVITY, ELECTRIC POTENTIAL, ABDOMEN (3902)
  ANTRUM, ENDOSCOPY, GASTRIC MUCOSA, FIBROMUSCULAR ATRESIA (6638)
  DUPLICATION, NEONATE, SURGERY (7354)
  EPITHELIUM, HISTOLOGY, ULTRASTRUCTURE, CAT (6314)
  HYPERTROPHIC STENOSIS, INFANTS (8106)
  HYPERTROPHY, PARTIAL GASTRECTOMY, EOSINOPHILIC INFILTRATION (8841)
  LIGATION, ESOPHAGUS, ULCER (4191)
  LIGATION, GASTRIC SECRETION (3919)
  LIGATION, GASTRIC SECRETION, ACIDITY, RAT (8587)
  LIGATURE, ESOPHAGEAL LIGATURE, GASTRIC SECRETION, RAT (8588)
  OBSTRUCTION, ''CRST'' SYNDROME (1866)
  OBSTRUCTION, ESOPHAGUS, RUPTURE (4970)
  OBSTRUCTION, FORMIC ACID (5794)
  OBSTRUCTION, GASTRIC TUMOR, MYOID, POLYP, GASTROSCOPY (5017)
  PEPSINOGEN, AMYLASE, DOG (7096)
  PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)
  SPASM, CARDIAC ACHALASIA, MEGAESOPHAGUS, CACHEXIA, PYROPLASTY, CARDIOMYOTOMY (4963)

    SPHINCTER, INCOMPETENCE, VARIANT (8828)*
    STENOSIS, ACID EROSIONS OF ESOPHAGUS, PATHOGENESIS (8820)
    STENOSIS, CONGENITAL, INHERITANCE PATTERN (1893)
    STENOSIS, CONGENITAL, SURGERY (5820)
    STENOSIS, ETHNICITY (4989)
    STENOSIS, GASTRIC COMPLICATION, HYPERTROPHY, ULCER, CARCINOMA, GASTRITIS (6618)
    STENOSIS, GASTROJEJUNOSTOMY, RADIOLOGY, METHOCLOPRAMIDE (6568)
    STENOSIS, HYPERTROPHIC (4146)
    STENOSIS, HYPERTROPHY, CONGENITAL, PYLOROMYOTOMY (5770)
    STENOSIS, INCIDENCE IN RACIAL GROUPS, HAWAII (1871)
    STENOSIS, PRESURGICAL MANAGEMENT, METABOLIC CARE, ELECTROLYTE SUPPLY (8849)
    STENOSIS, SERVIX SIGN, GASTROSCOPY (5002)
    STENOSIS, SURGERY, VAGUS (3353)
    STENOSIS, X-RAY, DIAGNOSIS, GASTRIC DYSKINESIA (5705)
    TRANSPYLORIC PROLAPSE, MUCOSA, STOMACH, RADIOLOGY (4986)
    ULCERATION, CONGENITAL DUODENAL STENOSIS (0294)
    Z PYLOROPLASTY, MONKEY, HIATAL HERNIA, VAGOTOMY (6623)
PYRIDINE
    ENZYME, LIVER (1769)
PYRIDOXINE
    DEFICIENCY, GASTRIC TISSUE, HISTAMINE BIOSYNTHESIS, HISTIDINE DECARBOXYLASE (6403)

RADIATION
    AMINO ACID, INCORPORATION, REGENERATION, LIVER, PROTEIN (4826)*
    BETA, PACINIAN CORPUSCLE, MESENTERY (4882)
    CELL KINETICS, ASCITES TUMOR (4360)*
    COBALT, CANCER, MICROORGANISM, LARGE INTESTINE, MAN (3708)*
    COBALT, DNA-SYNTHESIS, PLACENTA, FETAL LIVER, RNA, PROTEIN (5166)
    DAMAGE, TRIPARANOL, INTESTINE, DRUG ABSORPTION, RAT (5855)*
    ENTERITIS, SURGICAL TREATMENT (0357)*
    ESOPHAGEAL CARCINOMA, THERAPY, HEMATOLOGY (8791)*
    ESOPHAGEAL LESION, LUNG DENSITY, X-RAY, COBALT-60 GAMMA-RAYS (6581)
    GAMMA, ADRENALECTOMY, LIVER NUCLEI, RNA POLYNERASE (6458)
    GAMMA, LIVER DRUG METABOLISM, MOUSE (7003)
    GAMMA RAYS, GASTROINTESTINAL TRACT, LD50 (4878)
    GENETICS, CHROMOSAOMAL ABERRATIONS, ULCERATIVE COLITIS (3509)*
    INJURY, SIGMOID STENOSIS, METASTASES, OVARIAN TUMOR (6577)
    INTESTINAL REACTIONS, ABDOMINAL IRRADIATION, EXPERIMENTAL THERAPY (2098)
    INTESTINE (6967)
    INTESTINE, ILEUS, GENITAL CARCINOMA (6673)
    INTESTINE, MUCOSA, HISTOCHEMISTRY, RAT (4698)*
    IRRADIATION, PRECURSORS, GLYCOGEN SYNTHESIS, GLUCOSE, GLUTAMIC ACID, GLYCERYL-TRIPALMITATE, MICE (4861)
    LIVER, RABBIT, DETOXICATION, GLUCURONIDE CLEARANCE, N-ACETYL-PARA-AMINOPHENOL (6053)
    PROTON, GAMMA, HYPOXIA, MUCOSA, RECTUM (5645)
    RADIOTHERAPY, CARCINOMA, RECTUM, MEGAVOLT THERAPY, LYMPHNODE METASTASES, RADIOACTIVE COBALT (5915)
    RADIOTHERAPY, TELECOBALT, 5-FLUOROURACIL, CARCINOMA, PANCREAS (5136)*
    RADIOTHERAPY, TUMOR, ABDOMEN (5378)
    RADIOTHERAPY, TUMOR, ABDOMINAL, GAS INSUFFLATION (4897)*
    SENSITIVITY, JEJUNUM, EPITHELIAL CELL, AGE (7044)
    SMALL INTESTINE, MUCOSA (3736)
    SMALL INTESTINE, MUCOUS MEMBRANE, ANIMAL (0914)*
    THERAPY, CANCER, COLON, RECTUM (5112)
    THERAPY, CANCER, ESOPHAGUS, CARDIA, RESECTION (5756)
    THERAPY, CARCINOMA, COLON (6975)
    THERAPY, CARCINOMA, STOMACH (0308)
    THERAPY, ESOPHAGEAL CARCINOMA, FACTOR (3315)
    THERAPY, HEMANGIOMA, LIVER (6017)
    THERAPY, HEPATITIS, PELIOSIS (5243)
    THERAPY, STOMACH, CARCINOMA (6625)
    TOXICITY, ADRENALECTOMY EFFECT, LIVER, POLYRIBOSOMES, RAT (4823)*
    ULTRAVIOLET, FORMATION, CONSTRICTED ULCER, RAT (0316)
    UPTAKE, MEASUREMENT, RECTUM, BLADDER (1998)
    WHOLE BODY, SMALL INTESTINE, MOTILITY (4791)*
    X-RAY, GAMMA RAY, LIVER, ENZYME, FATTY ACID SYNTHESIS (0890)
    X-RAYS, MITOCHONDRIA, ^{14}C-THYMIDINE (6443)*
RADIATION THERAPY
    CANCER, RECTUM, COLON (3504)
RADIOACTIVE DETERMINATION
    ENTEROHEPATIC CIRCULATION, URINARY ESTROGEN (1700)*
    PROTEIN, NEONATE (6440)*
RADIOACTIVE GASTRIN
    BIOLOGICAL ACTIVITY, ELECTROPHORESIS (6402)
RADIOCHROMATOGRAPHY
    PHOTODECOMPOSITION, BILIRUBIN, BILIVERDIN (1724)*
RADIOGRAPHY
    CHRONIC APPENDICITIS, LYMPHOCYTE COUNT, INFLAMMATION (6721)
    COLON, DIVERTICULOSIS, STENOSIS, TUMOR (6576)
    CONGENITAL TRACHEO-ESOPHAGEAL FISTULA (0984)
    DUODENOGRAPHY, MESENTERIOGRAPHY, ULCER (4090)

- ESOPHAGEAL RING, RADIOGRAPH, ESOPHAGEAL STENOSIS (6606)
- ESOPHAGUS, RUPTURE, MUCOSAL STRIPE SIGN (1014)
- GAS CONTENT, LUNG, GASTROINTESTINAL TRACT, RESUSCITATION, INFANTS (1085)
- HEMORRHAGES, UPPER GASTROINTESTINAL TRACT (0980)
- INTESTINAL LIPOMA, OCCLUSION, ABDOMINAL PAIN (6676)
- MUCOCELE, APPENDIX, EXTRACECAL, ILEOCECAL (6726)
- PANCREATITIS, BLOOD VESSELS (6749)*
- PARALYTIC ILEUS, ADRENOCORTICOIDS, K+ ECONOMY, WATER RETENTION (6952)
- PHARMACO-, SMALL INTESTINE (4052)
- PRESURGICAL, TRANSPARENT VALVES, BILE DUCT (4074)
- PYLORUS, STENOSIS, GASTROJEJUNOSTOMY, METHCLOPRAMIDE (6568)
- SIMPLE, EMERGENCY, ABDOMEN (4071)
- SMALL INTESTINE, DOUBLE CONTRAST (4051)
- STOMACH, TECHNETIUM, PERTECHNATE, RAT (2346)
- TRANSLUMBAR, AORTOGRAPHY, PANCREATITIS (4348)

RADIOISOTOPE
- DIAGNOSIS, CANCER, ESOPHAGUS (7233)
- INDIUM, SCANNING AGENT (2526)
- INTRAHEPATIC SHUNT DIAGNOSIS (3300)
- LIVER SCAN, RADIOACTIVE NUCLEI (4061)
- NAI 131, TEST, LIVER METASTASIS (4027)
- 99M TC AND I131, GASTRIC NEOPLASM, DIAGNOSIS (3920)
- SCANNING, LIVER ALVEOCOCCOSIS, JAUNDICE (3672)
- 65ZN, NUCLEAR UPTAKE, LIVER (2425)
- STUDY TECHNIQUES, STOMACH, MUCOSA (0071)*
- TRACER STUDIES, SMALL INTESTINE (0162)*
- YTTRIUM-90, LIVER, CANCER, INTRA-AORTA, INTRA-HEPATIC ARTERY, MORTALITY RATES (4369)*

RADIOLOGY
- ACUTE APPENDICITIS (2754)
- APPENDIX, SURGERY, PERFORATION (2713)
- BARIUM ENEMA, COMPLICATION (2508)*
- BILIARY TRACT, IODINIZED OPAQUE SUBSTANCES, ACCIDENT PREVENTION (3273)
- BILIARY TREE (2503)*
- CAERULIN, BILIARY TRACT (3124)*
- CANCER, ESOPHAGUS, DRUG EFFECT, SURGERY (2553)
- CHOLANGITIS, BILE DUCT (4526)*
- CHOLECYSTOGRAPHY, CONTRAST MEDIA (3279)
- COLITIS, CHRONIC, ULCERATIVE (2015)
- COLON, DIAGNOSIS, COLITIS (3277)
- COLON, ILEUS (3460)*
- CONTRAST MEDIUM, STORAGE, LIVER, LYMPHOGRAPHY, FOOT, HEPATOGRAPHY (2818)
- CONTRAST MEDIUM, SULPIRIDE (1817)
- DIAGNOSIS, BILIARY TRACT (1813)
- DIAGNOSIS, GASTRIC MUCOSA, PROLAPSE, DUODENUM (2593)
- DIAGNOSIS, OPISTHORCHOSIS, GALLBLADDER, MOTOR ACTIVITY (3003)
- DIAGNOSIS, SMALL INTESTINE, OCCLUSION (0232)
- DIVERTICULUM, ESOPHAGUS (1836)
- DUODENUM, STENOSIS, SURGERY (4151)
- ENTERITIS, SMALL INTESTINE (1959)
- ESOPHAGUS, DIVERTICULUM (1837)
- ESOPHAGUS, RADIOLOGY (1831)
- GALLBLADDER, BILIARY TRACT, CHOLANGIOGRAPHY (1819)
- GALLBLADDER, CHOLANGIOGRAPHY, BARIUM SULFATE, SPHINCTER OF ODDI (4036)
- GALLBLADDER, DIAGNOSIS, CANCER (1807)*
- GALLBLADDER SIPHON, ANATOMOPATHOLOGY, SURGERY (9188)
- GALLSTONE, ILEUM (1940)
- GASTRIC DIAGNOSIS, ULCERS (0212)
- GASTRIC ULCER, DIFFERENTIAL DIAGNOSIS, HEALING PROCESS (8836)
- GASTROINTESTINAL, LYMPHANGIOGRAPHY, ARTERIOGRAPHY (0233)
- GASTROINTESTINAL, NEONATE (4088)
- GASTROINTESTINAL TRACT, BRAIN TUMOR, PERISTALSIS, POSTOPERATIVE (2965)
- GASTROINTESTINAL TRACT, VENOGRAPHY, URETHROCYSTOGRAPHY, DOSE (3286)
- HEPATITIS, GASTRITIS, CHOLECYSTITIS (2206)
- HYPOTONIC DUODENOGRAPHY, AMPULLA OF VATER, OBSTRUCTIVE JAUNDICE (7217)*
- HYPOTONIC DUODENOGRAPHY, DUODENAL LESIONS, PANCREATITIS (7212)*
- LARGE INTESTINE, CONTRAST ENEMA (7227)
- LIVER, CANCER, VENOGRAPHY, METASTASES (2509)*
- LIVER SCANNING, COMBINED TECHNIQUE, 131I-HUMAN SERUM ALBUMIN, 198AU, HEMANGIOMA (3263)*
- MECKEL'S DIVERTICULUM, OBSTRUCTION (3421)
- MOTILITY, HIATUS HERNIA, REFLUX (1809)*
- PANCREAS, ANGIOGRAPHY, MESENTERIC OCCLUSION, HEPATIC ARTERY OCCLUSION, CELIAC ARTERY OCCLUSION, BALLOON CATHETER (3262)*
- PANCREAS, PANCREATITIS, PANCREATOLITHIASIS (4337)
- PARENTERAL FEEDING, FATAL ACCIDENTS, INTESTINAL OBSTRUCTION (8434)
- PARTIAL HEPATECTOMY, CELL CULTURE, RAT, PROTEIN SYNTHESIS (2462)
- PLAIN FILM, ABDOMEN, LIVER, SPLEEN (4018)*
- POLYPOSIS, RECTUM, COLON (2728)
- RADIOPHONIC EMISSION, RADIOLOGIC APPEARANCE, GUT, CHILDHOOD (2988)
- RADIOTHERAPY, CANCER, ANUS (2005)
- RECTUM, PERFORATION, BARIUM ENEMA (2702)
- RECTUM, SIGMOID FLEXURE, HYPEREMIA, SPASM, TENESMUS, NEOPLASM, UTERUS, BLADDER, PAIN (2736)
- SMALL INTESTINE, INFARCTION (2219)
- SMALL INTESTINE, LYMPHOSARCOMA (4227)
- SMALL INTESTINE, OBSTRUCTION (1812)
- STOMACH, ULCER, SECRETION (3287)
- STOMACH, VAGUS (1863)

    STOMACH BIOPSY, DUODENAL BIOPSY, DIAGNOSIS (2523)
    SURGERY, CANCER, ESOPHAGUS, BRONCHO-ESOPHAGEAL INVESTIGATION (2551)
    UROGRAPHY, HIGH DOSE, HEPATIC FUNCTION (8748)
    VISCERAL ARTERIES, STENOSIS, OBSTRUCTION, MORPHOLOGY (8431)
RADIOTHERAPY
    CARCINOMA, ESOPHAGUS, SPLIT-COURSE (1825)*
    CHOLINERGIC, SMALL INTESTINE, SMOOTH MUSCLE, IONIC FLUX (1788)
    FLUOROURACIL, STOMACH, CANCER (1089)
    HEPATOMA, CYTOSTATIC AGENTS, METHOTREXATE, BANTU (7531)*
    LYMPHOSARCOMA, INTESTINE, CELLULAR INFILTRATION (6677)
    MESENCHYMAL TUMORS, GASTRECTOMY, FIBROSARCOMA (6655)
    ROTATION, ESOPHAGUS (4105)
REANIMATION
    HEMORRHAGE, GASTRODUODENAL, RESPIRATORY INSUFFICIENCY (1054)
    INTESTINAL OCCLUSION, PREOPERATIVE, POSTOPERATIVE (1204)
RECKLINGHAUSEN'S DISEASE
    COMPLICATION, GASTROINTESTINAL, ILEOJEJUNAL NEOPLASM (0370)
RECTOCOLITIS
    HEMORRHAGIC (4299)
    HEMORRHAGIC, CROHN'S DISEASE, ARTICULAR SYMPTOMS (0473)
    POLYP, SINGLE, DIFFUSE, VILLOUS (6706)
RECTUM
    ACUTE DISEASES, DIAGNOSIS, TREATMENT CLINICAL PICTURE (1247)
    ADENOCARCINOMA (1989)
    ADENOCARCINOMA, COLON (7480)
    ADENOCARCINOMA, ELECTROLYTE, COLON (3471)
    AMEBIC, ULCERATIVE PROCTITIS, METRONIDAZOLE, SIDE EFFECTS (0493)
    AMEBIC GRANOLOMA, CARCINOMA, MAN (0474)
    AMEBOMA, DIFFERENTIAL DIAGNOSIS, EOSINOPHILIA (1275)
    AMPULLA, ELECTROLYTE, TRANSPORT, RENAL (6699)
    AMPULLA, PAPILLOMA, EPITHELIOMA, SACRAL (6701)
    AMPULLA, TRANSPORT, ELECTROLYTE, SALURETIC (6370)
    ANASTOMOSIS, CECAL FISTULA, SURGERY, TUMOR (5942)
    ANATOMY, SURGERY, ANUS (4729)
    ANORECTAL ANATOMY (3503)
    ANORECTAL ANOMALIES, CLASSIFICATION (7469)
    ANORECTAL ANOMALIES, CONGENITAL, SURGERY (6719)
    ANORECTAL FISTULA, MUCOID ADENOCARCINOMA (3501)
    ANUS, FISTULA, SURGERY (5731)
    ANUS, HEMORRHOID, PATHOGENESIS, ANATOMY (5939)
    ANUS, INJURY, SURGERY (4269)
    ARGENTAFFIN CELL CARCINOMA, SURGERY (5912)
    BIOPSY, ENDOSCOPY, MANSON'S SCHISTOSOMIASIS (0217)
    BLADDER, RADIATION UPTAKE, MEASUREMENT (1998)
    CANCER (0462), (0463), (0465), (3495)
    CANCER, ANUS, COLON (4271)
    CANCER, ANUS, COLON, SURGERY (4193)
    CANCER, ARTERIOGRAPHY, DIAGNOSIS (0453)
    CANCER, CHEMOTHERAPY, FLUORINATED PYRIDINE (1222)*
    CANCER, CHEMOTHERAPY, MITOMYCIN C (1221)*
    CANCER, COBALT, THERAPY (0450)
    CANCER, COLON, SURGERY (1268)
    CANCER, DIAGNOSIS, SURGERY (2738)
    CANCER, ELECTRO-DESTRUCTION (0451)
    CANCER, INCIDENCE (1986)
    CANCER, LYMPHOMA, BRILL-SYMMERS DISEASE (0448)
    CANCER, LYMPHOGRAPHY (7266)
    CANCER, PALLIATIVE RADIATION THERAPY (3504)
    CANCER, POLYPS, PRECANCEROUS (0188)*
    CANCER, RADIATION THERAPY, COLON (5112)
    CANCER, RECTOSIGMOIDOSCOPY, POLYPS, OCCULT BLOOD (6520)*
    CANCER, RESECTION (5936)
    CANCER, SERUM CARCINOEMBRYONIC ANTIGEN, RADIOIMMUNOASSAY (1219)*
    CANCER, SEX, GENETICS, INCIDENCE (4243)*
    CANCER, SURGERY (1279)
    CANCER, SURGERY, COMPLICATIONS, POSTOPERATIVE MOTILITY (1244)
    CANCER, SURGERY, EFFECTS (0445)
    CANCER, SURGERY, PERINEOABDOMINAL OPERATION (5917)
    CANCER, SURGERY, TREATMENT (0449)
    CANCER, SURGERY, URINARY APPARATUS (4297)
    CANCER, SURGICAL TREATMENT (0447)
    CANCER, SYNCHRONOUS EXTIRPATION (7464)
    CANCER, TREATMENT (0452), (7463)
    CANCER, TREATMENT, POLYP (2707)
    CARCINOID TUMOR, EXCISION (1238)
    CARCINOMA (7476)
    CARCINOMA, COLON, ANUS (7475)
    CARCINOMA, COLON, HEPATIC INFUSION (2730)
    CARCINOMA, COLON, JAMAICA (4284)
    CARCINOMA, CYTOLOGICAL SCREENING METHOD, FLUORESCENCE MICROSCOPY (0187)*
    CARCINOMA, RADIOTHERAPY, MEGAVOLT THERAPY, RADIOACTIVE COBALT, LYMPH-NODE METASTASES (5915)
    CARCINOMA, SIGMOIDOSCOPY (0464)
    CARCINOMA, SURGERY (1236)
    CARCINOMA, SURGERY, ENDORECTAL TECHNIQUE (8183)
    CARCINOMA, SURGERY, POSTOPERATIVE (2739)
    CECUM, URINE, ROADRUNNER (6506)
    COLLOID CARCINOMA, ANUS, MUCUS (5907)
    COLON, CANCER, ARTERIAL INFUSION, SURGERY, CHEMOTHERAPY, LIVER (5198)
    COLON, INJURIES, DIAGNOSIS, TREATMENT (2711)

COLON, POLYPOSIS, RADIOLOGY (2728)
CONGENITAL MALFORMATION, ANUS, SPHINCTER (5093)
CONGENITAL MALFORMATION, ETIOLOGY, TREATMENT (1303)
CORTICOSTEROIDS, ABSORPTION, MAN (1294)*
CROHN'S DISEASE, PROCTOCOLECTOMY (7309)
CROHN'S DISEASE, ULCEROUS, REGIONAL ENTERITIS (6716)
DEFECATION, COLON, ANUS (4802)
DESCENDING PERINEUM SYNDROME, TREATMENT (1269)
DISEASES, LITERATURE REVIEW (0486)
DISSECTING MICROSCOPY, MUCOSA (1605)
DIVERTICULA, RESECTION, MOTILITY, PRESSURE STUDY, PROSTIGMINE, EATING, DISTENTION (4268)*
DIVERTICULOSIS, MOTILITY, ENEMA, POLYSILOXANE FOAM, CONTRACTION (4267)*
DUPLICATION, SURGERY (5108)
ECHOVIRUS ANTIBODY, NASOPHARYNX, SPINAL FLUID (6931)*
ENDOMETRIOSIS, COLON (5910)
EPITHELIUM, MITOSIS, IRRADIATION, MICE (0687)*
EPITHELIUM KINETICS, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS (0495)*
EXTRAPERITONEAL RUPTURE, HEART, BARIUM SULFATE (3505)
FISTULA, NONSUTURE REPAIR, COLON (7477)
FISTULOGRAPHY, DAIGNOSIS, PATHOLOGIC SINUS (1242)
FISTULOGRAPHY, LARGE INTESTINE, DIAGNOSIS, PATHOLOGIC SINUS (1242)
FLORA, URINARY ORGANISMS, E. COLI (0064)*
FOREIGN BODY, EXTRACTION (1260)
FOREIGN BODY, X-RAY DIAGNOSIS, NON-SURGICAL REMOVAL (1291)
HEMORRHAGE, RADIOGRAPHY (4900)
HEMORRHAGE, ULCER, TUMOR (4901)
HEMORRHOID, DIAGNOSIS, TREATMENT (5923)
HEMORRHOID, EPIDEMIOLOGY, PREGNANCY (5102)
HEMORRHOIDS, TREATMENT, DILATATION (5091)
HERNIA, DIAGNOSIS, SURGERY (7462)
LAMINA PROPRIA, MACROPHAGE, ULTRASTRUCTURE (5925)
LESIONS, SURGERY (7457)
LEVATOR ANI DEFECT, PRIMARY PERINEAL HERNIA (0434)
LUMEN CONCENTRATION, ION REABSORPTION, WATER REABSORPTION, COCKROACH (3114)
LYMPHOGRAPHY, CARCINOMA, RECTOSIGMOIDECTOMY (0199)
MALIGNANCY, FATAL, GEOGRAPHIC PATTERNS, VIRGINIA (3496)
MALIGNANT MELANOMA, ANUS (6727)
MALIGNANT TUMOR, INCIDENCE, DISTRIBUTION (6729)
MOTILITY, MEGACOLON, NEONATE, CHILDREN (5929)
MOTILITY, PROXIMAL COLON, SIGMOID, PRESSURE, FOOD, GASTRECTOMY, PERNICIOUS ANEMIA, DUODENAL ULCER (4264)*
MUCOSA, CYSTIC FIBROSIS, MUCOUS SECRETIONS, ELECTROLYTES, INSULIN, HYDROCORTISONE (3464)*
MUCOSA, ELECTRICAL POTENTIAL (4800)
MUCOSA, HYPOXIA, PROTON RADIATION, GAMMA RADIATION (5645)
MUCOSA, LYMPHOSARCOMA (5392)
MUCOSA, MELANOSIS COLI, PIGMENTATION, CARCINOMA, RECTOSCOPY, ENDOSCOPY (5096)
MUCOSA, MICROSCOPY, SMALL INTESTINE (5679)
MUCOSA, REGENERATION, ULCERATIVE COLITIS (6731)*
MUCOSA, RESECTION (7481)
MUCOSA, SCANNING ELECTRON MICROSCOPY (8011)*
MUCOSA, SUCTION BIOPSY (4028)
MUCOSA, ULCERATIVE PROCTITIS, SIGMOIDOSCOPY (5948)
MUCOSAL ALTERATIONS, SIGMOIDOSCOPY (0454)
MUCOSAL POTENTIAL, COLON, ALDOSTERONE (7064)*
MUCUS, HISTOCHEMISTRY, SUCTION BIOPSY, CYSTIC FIBROSIS, PANCREATIC DISEASE (4329)*
MYOTOMY, SPHINCTEROTOMY, HIRSCHSPRUNG DISEASE (5933)
NEOSTIGMINE, ATROPINE, ILEUM, COLON (4804)
OBSTRUCTION, POSTPERFORATED COLONIC ABSCESS (3490)
OBSTRUCTION, UROGENITAL SYSTEM (4902)
OCCLUSION, PROSTATIC CANCER, EPITHELIOMA, DYSURIA, ESTROGEN THERAPY (5111)
PAPILLOMA, ELECTROLYTIC DISORDERS (4303)
PERFORATION, BARIUM ENEMA, RADIOLOGY (2702)
PERFORATION, CONTRAST FLUID, INTESTINAL RESISTANCE (6695)
PERITONEUM, ANATOMY, PELVIS (2318)
PERITONEUM, INFECTION, COLON (4270)
POLYPS, CHILDREN (2723)
PROCTITIS, SALAZOPYRIN TREATMENT (4296)
PROLAPSE, ANATOMY, SURGERY (4285)
PROLAPSE, ANO-RECTAL RINGS (6778)
PROLAPSE, COLONIC RESECTION, RECTAL FIXATION (0481)
PROLAPSE, DECUBITIS ULCER (1280)
PROLAPSE, ETIOLOGY, SURGERY (7474)
PROLAPSE, HEMORRHOID, CORPUS CAVERNOSUM, INCONTINENCE, SURGERY (5115)
PROLAPSE, HEMORRHOID, SURGICAL TREATMENT, MEDICAL TREATMENT (1264)
PROLAPSE, RECTOPLEXY, SURGERY (1982)
PROLAPSE, RIPSTEIN SURGERY, RADIOLOGY (6710)
PROLAPSE, SALINE, CHILDREN (7470)
PROLAPSE, SURGERY, ETIOLOGY (5920)
PROLAPSE, SURGERY, RADIOLOGY (8186)
PROLAPSE, 2-STAGE SURGERY (4304)

PROMETHAZINE, VITAMIN C, ENZYMES, HEMORRHOIDS (1288)
PROSTATIC FISTULA, POSTOPERATIVE (2712)
PSEUDOMEMBRANOUS COLITIS, ANTIBIOTIC (1991)
RECTAL PADS, WATER AND SOLUTE UPTAKE, PERIPLANETA (3117)
RECTOCOLITIS, HEMORRHAGE, AZOTHIOPRINE (5106)
RECTOCOLITIS, HEMORRHAGIC, CROHN'S DISEASE (0473)
RECTOCOLITIS, POLYP, SINGLE, DIFFUSE, CARCINOMA (6706)
RECTOPLEXY, SURGERY (1982)
RECTOSIGMOID LESIONS, TRANSRECTAL REMOVAL (0492)
SESSILE POLYPS, VILLOUS TUMORS, PERINEAL EXPOSURE (8976)
SIGMOID CARCINOMA, PREGNANCY (5924)
SIGMOID DIVERTICULITIS, CANCER, DUHAMEL'S OPERATION (8204)
SOLITARY ULCER, CLINICAL PICTURE, PATHOLOGY, TREATMENT (1971)•
STONE, MILK OF MAGNESIA (5098)
SURGERY, CYSTOMETRIC EXAMINATION, BLADDER PRESSURE, HYPOTONUS, RETENTION (5095)
SURGERY, NEOPLASM (1258)
SURGERY, STOMACH, SUTURE (3740)
SURGERY, TRIGONE, ANASTOMOSIS (4867)
TRAUMATIC INJURY, SURGICAL MANAGEMENT (3491)
TUBERCULOSIS, RECTO-ILEAL FISTULA, SURGERY (2705)
TUMOR, EVALUATION, RADIOACTIVE PHOSPHORUS (4912)
TUMOR, GARDNER'S SYNDROME (6959)
ULCER (6704)
ULCER, BENIGN SOLITARY (3514)
ULCER, COLITIS CYSTICA PROFUNDA, HISTOPATHOLOGY (8947)
ULCER, NECROTIZING ANORECTAL, LEUKEMIA (0490)
ULCERATIVE COLITIS, CLINICAL COURSE (3512)
ULCERATIVE PROCTITIS, FAMILY (6737)
ULCERATIVE RECTOCOLITIS, TUMOR (5944)
ULCERO-HEMORRHAGIC COLITIS, COMPLICATIONS (4309)
UNDIAGNOSED CANCER, COLON, RACE DIFFERENCES (5921)
URETHRO-RECTAL FISTULA (2717)
VILLOUS ADENOMA, COLON (5940)

REFLEX
INTESTINE, DUODENUM, JEJUNUM (1655)
MYOTATIC, INTEROCEPTOR STIMULATION, GASTROINTESTINAL TRACT (7080)

REFLUX
CORRECTIVE SURGERY, ESOPHAGEAL DILATATION, HELLER OPERATION (6594)
ESOPHAGEAL, HIATAL, HERNIA, SURGERY, PHYSIOPATHOLOGY (1120)
ESOPHAGITIS, CANCER, SURGERY, ESOPHAGOGASTRO-ANASTOMOSIS (2552)
ESOPHAGITIS, THERAPY (8059)
ESOPHAGUS, HISTOLOGY (2549)•
GASTROESOPHAGEAL, HIATAL HERNIA, BELSEY REPARI (0985)
GASTROESOPHAGEAL, SPHINCTER PRESSURE (2545)•
GASTROESOPHAGEAL, WATER TEST (0200)

REGENERATION
ACUTE HEPATITIS, ELECTRON MICROSCOPY (5252)•
DEGENERATION, PANCREAS, HISTONE CHANGE (5553)•
FATTY LIVER, ALCOHOL, ABSTINENCE (2152)
HEPATIC (2455)
HEPATIC, BILE ACIDS, HEPATIC DISEASE, JAUNDICE, HEMOLYTIC TOXINS (5256)
HEPATIC, PARTIAL HEPATECTOMY, SPLEEN, HEMATOPOIESIS, PORTAL HYPERTENSION, RAT (4852)
HEPATIC, PROTEASE, PAPAIN, PARTIAL HEPATECTOMY, MITOTIC INDEX, RAT (4851)
HEPATIC, VIRAL HEPATITIS, CIRRHOSIS, CORTISONE, VITAMIN B12 (5279)
LIVER, CANCER, METABOLISM, LOBECTOMY, PRE- AND POSTOPERATIVE MANAGEMENT (4362)•
LIVER, HEMIHEPATECTOMY, SERIAL SCANS (8280)
LIVER, HEPATITIS, JAUNDICE, STEATOSIS, PARENCHYMAL VOLUME (5259)
LIVER, METABOLISM, RESECTION (5594)
LIVER, MITOSIS (4855)
LIVER MITOCHONDRIA, BIOGENESIS, CHLORAMPHENICOL (7892)•
LIVER, POSTHEPATECTOMY, SERUM GROWTH FACTOR, MITOSIS (7116)•
LIVER, PROGESTERONE METABOLISM (6453)•
LIVER, RNA, NUCLEAR TEMPLATE CAPACITY, RAT (4821)•
LIVER, TRACER STUDIES, PATHOLOGY (1718)•

REGIONAL ENTERITIS
CARCINOMA (3715)
CROHN'S DISEASE, KVEIM TEST, SARCOIDOSIS (0398)•
CROHN'S DISEASE, PANCREAS BICARBONATE SECRETION (1208)•
CROHN'S DISEASE, ULCEROUS, RADIOGRAPHY (6716)
DUODENO-JEJUNAL LOCALIZATION, CROHN'S DISEASE, GASTRECTASIA, DUODENAL STENOSIS (8922)
PATHOPHYSIOLOGY, DIAGNOSIS, ANTIMETABOLITE THERAPY (8164)

RELAXATION
ILEUM, SYMPATHETICS (3899)

RENAL DISEASE
FAILURE, ALCOHOLIC CIRRHOSIS, PORTACAVAL SHUNT (6876)•
PLURICYSTIC, PEUTZ-JEGHERS SYNDROME (1948)

RESECTION
ABDOMEN, FIBRODYSPLASIA, POLYPOSIS COLI (5100)
ACUTE MESENTERIC INFARCT (7684)•
APPENDECTOMY, AGE (6711)
APPENDECTOMY, APPENDICITIS, GERIATRICS (5928)
APPENDECTOMY, CANCER RISK (5927)
APPENDECTOMY, COLONIC CANCER (7490)
BILLROTH, FIBROMYOMA, BENIGN TUMORS, ULCERS, STOMACH (4980)

ILLROTH, PERITONITIS, DUODENAL FISTULA, ANTIBIOTICS (4983)
ILLROTH I, GASTRODUODENAL ULCER, VAGOTOMY (5846)
ANCER, BILE DUCT, PANCREAS (7510)
ARDIA, ESOPHAGUS, CANCER, RADIOTHERAPY (5756)
EPHALOPANCREATECTOMY, NEURINOMA, CHILD (4342)
HOLECYSTECTOMY, CHOLECYSTOCOLONIC FISTULA, MALABSORPTION (7451)
HOLECYSTECTOMY, GALLBLADDER, CHOLANGIOGRAPHY, CHOLECYSTITIS (6135)
HOLECYSTECTOMY, GALLBLADDER, JAUNDICE, THROMBOSIS, SURGERY (5328)
HOLECYSTECTOMY, HYDATID CYST, ASCITES (7758)
HOLECYSTECTOMY, LITHIASIS, SUTURE, SURGERY (6137)
HOLECYSTECTOMY, VAGOTOMY, LIVER, CHOLELITHIASIS (5304)
HOLEDOCHODUODENOSTOMY, COMMON BILE DUCT TRANSECTION, BLUNT TRAUMA (6133)
HOLEDOCHODUODENOSTOMY, DUODENUM, GALLBLADDER, BILIARY TRACT (6143)
HOLEDOCHOLITHOTOMY, HEPATIC DUCT, CALCULI, CHOLANGIOGRAPHY (6032)
HOLEDOCHOTOMY, TRANSDUODENAL ROUTE (6913)
HRONIC PANCREATITIS, HEMIPANCREATECTOMY, SPLANCHNICECTOMY, PAIN, JAUNDICE, DIABETES (5979)
COLECTOMY, ULCERATIVE COLITIS, GRANULOMA (6734)
COLON, BACTERIA, ILEOSTOMY (5931)
COLON, CANCER (5107)
COLON, CANCER, SURVIVAL (5909)
COLON, COLORECTAL CANCER (5932)
COLON, DIVERTICULA, CECUM, SIGMOID, BLEEDING (5914)
COLON, DIVERTICULITIS (5114)
COLON, FECAL LOSS, ELECTROLYTES, NITROGEN (7492)
COLON, GARDNER'S SYNDROME (5934)
COLON, ILEO-TRANSVERSE, TECHNIQUE (5364)
COLON, ULCER, COLITIS (5133)
COLON, ULCERATIVE COLITIS (5124)
COLON, VARICES, SIGMOIDOSCOPY (5913)
COLOSTOMY, ILEOSTOMY, DIARRHEA, CONSTIPATION, DIET, SKIN PROTECTION, PSYCHOLOGICAL PREPARATION (5903)
DIVERTICULITIS, COLON (4283)
DIVERTICULITIS, PERFORATION, PERITONITIS, DRAINAGE, COLOSTOMY, TUMORS, HEMORRHAGE (5916)
DUODENAL ULCER, SURGERY, VAGOTOMY (5778)
DUODENUM, PAPILLA, CANCER (5814)
DUODENUM, ULCER (4899)
ESOPHAGEAL TUMORS, BENIGN, LIOMYOMA, EPITHELIAL, MESODERMAL (5754)
ESOPHAGO-GASTRIC, ULCER, BELSEY'S ESOPHAGO-COLOPLASTY (4103)
ESOPHAGOJEJUNAL ANASTOMOSIS, GASTRECTOMY (6631)
ESOPHAGUS, CICATRICAL OBSTRUCTION, CHILDREN, RETROSTERNAL PLASTY (5755)
ESOPHAGUS, CICATRICIAL STENOSIS, DELAYED MALIGNANCY (4947)
ESOPHAGUS, LEIOMYOMA (5750)
ESOPHAGUS, TRANSPLEURAL, CANCER, ANESTHESIA (7315)
GALLBLADDER, CARCINOMA (5309)
GALLBLADDER, CHOLECYSTITIS, CHOLECYSTECTOMY (5305)
GALLBLADDER, DRAINAGE, CHOLEDOCHUS, CYSTIC DUCT (6140)
GALLBLADDER CARCINOMA, GALL STONES, CHOLECYSTECTOMY (5311)
GASTRECTOMY, ANTI-SEROTONIN, METHYSERGIDE, GASTROENTEROSTOMY, ULCER (5079)
GASTRECTOMY, CHOLELITHIASIS, POST-VAGOTOMY, ULCER, DIARRHEA (5321)
GASTRECTOMY, DIABETES MELLITUS, PREDISPOSITION, HYPERINSULINISM, ANASTOMOSIS, JEJUNUM, HYPERGLYCEMIA (4982)
GASTRECTOMY, HEPATIC LESIONS, HYPERAMMONEMIA, AMMONIUM ACETATE, ENCEPHALOPATHY (4950)
GASTRECTOMY, MULTIPLE POLYPS, DIARRHEA (5818)
GASTRECTOMY, OESOGASTRIC, ANASTOMOSIS, METALLIC CLIP, P.K.S. 25, TERMINO-LATERAL TECHNIQUE (5350)
GASTRECTOMY, PARTIAL GASTRECTOMY, HISTOLOGICAL CHANGES, INTESTINAL MALABSORPTION, D-XYLOSE, FAT (5073).
GASTRECTOMY, PYLOROPLASTY, DUODENAL ULCER, PANCREAS (4993)
GASTRECTOMY, SPRUE, PREGNANCY (7449)
GASTRECTOMY, ULCER, ANTRECTOMY, PYLOROPLASTY (5022)
GASTRECTOMY, VAGOTOMY, PEPTIC ULCER (6660)
GASTRECTOMY, VAGUS PRESERVATION (7366)
GASTRIC, ANASTOMATIC RING, EDEMA X-RAY (1050)
GASTRIC, BILROTH I, RADIOLOGY (4053)
GASTRIC, BLOOD LOSS (1051)
GASTRIC, CARBOHYDRATE METABOLISM (3383)
GASTRIC, CNS DEGENERATION, VITAMIN B6 (3916)
GASTRIC, COLON, TUMOR, SORBITOL DEHYDROGENASE, TRANSAMINASES, LIVER DISEASE (6223)
GASTRIC, DUODENAL ULCER (3411)
GASTRIC, DUODENAL ULCERS, HEMORRHAGE (7339)
GASTRIC, HEMORRHAGE, SURGERY, ULCER (2598)
GASTRIC, HEPATIC ARTERY, LIVER NECROSIS (3569)
GASTRIC, ILEUM, VITAMIN B12, GLUCOSE ABSORPTION, PERISTALSIS, MALIGNANT TUMOR (5083)
GASTRIC, MUCOUS GASTROJEJUNAL PROLAPSE, HEMATEMESIS (2593)
GASTRIC, MYOID TUMOR, METASTASES, RADIOGRAPHY (5014)
GASTRIC, NECROTIZING PANCREATITIS, DUODENAL ULCER, CARCINOMA (5155)
GASTRIC, 99TC VISUALIZATION STUDY (4083)

GASTRIC, PEPTIC ULCER (7405)
GASTRIC, PEPTIC ULCER, RELAPAROTOMY, HYPOCHRONIC ANEMIA, HEMORRHAGIC ULCER, WEIGHT CONTROL (5783)
GASTRIC, VAGOTOMY, DRAINAGE, DUODENAL STUMP (6653)
GASTRIC, VAGOTOMY, PYLORIC STENOSIS, HYPERSECRETION (4951)
GASTRIC, VALDONI PROCEDURE, GASTRODUODENAL (1108)
GASTRIC CANCER, GASTRECTOMY (5816)
GASTROESOPHAGEAL REFLUX, ESOPHAGUS, STOMACH (5733)*
GASTROSTOMY LEAKAGE, CHILDREN, TREATMENT (7362)
GASTROTOMY, ESOPHAGEAL PERFORATION (7310)
HEMI-HEPATECTOMY, TECHNIQUE (6793)
HEPATECTOMY, FOLIC ACID, LIVER REGENERATION, RATS (4835)*
HEPATECTOMY, HEPATIC TRAUMA, DRAINAGE, RADIOLOGY, GLISSON'S CAPSULE (6052)
HEPATECTOMY, LIVER SEGMENT VARIATION, RADIOLOGY (5473)
HEPATIC ARTERY LIGATION, LIVER REGENERATION, RAT (1746)
HYSTERECTOMY, LYMPHADENECTOMY, INTERNAL ILIAC ARTERY (6225)
ILEAL, CHOLORRHEA, CHOLESTYRAMINE THERAPY (4240)
ILEOSTOMY, CROHN'S DISEASE, SMALL INTESTINE (5068)
ILEOSTOMY, ILEITIS (5044)
ILEUM, CHOLESTYRAMINE, DIARRHEA (7744)
INTESTINE, MECHANICAL OBSTRUCTION (5056)
LIVER, CALCIFIED HEMANGIOMA, RADIOLOGY (6015)
LIVER, CIRCULATORY CHANGE (6791)
LIVER, FIBROUS CAPSULE, OCTO-N-FORM SUTURE (6038), (6190)
LIVER, HYDATIDOSIS, BILIARY TRACT (5400)
LIVER, PRIMARY CARCINOMA (6031)
LIVER, REGENERATION, METABOLISM (5594)
LIVER, REGENERATION, SPLEEN, HEMATOPOIESIS, PORTAL HYPERTENSION (4852)
LIVER, TECHNIQUE (6036)
LIVER, THROMBOELASTOGRAM, COAGULOGRAM (7541)
LIVER, TRAUMATISM (1367)
LIVER, TUMOR, RIGHT LIBE (6009)
LIVER, ULTRASTRUCTURE, HEPATOCYTE (6477)
LUNG, ESOPHAGEAL DISORDER, MANOMETRY (5752)
MESENTERIC ARTERY, EMBOLECTOMY, OCCLUSION (5332)
MESENTERIC INFARCT, EMBOLISM, ARTERIOTOMY, INTESTINAL RESECTION (5336)
NEPHRECTOMY, HEPATIC, RENAL CANCER, LIVER BIOPSY, MUCOPROTEINS (5185)
PANCREATECTOMY, PANCREATIC INSUFFICIENCY, DOG (5137)*
PANCREATIC CYSTS, RADIOLOGY, GASTROINTESTINAL TRACT, BILIARY TRACT, DRAINAGE (5140)
PANCREATODUODENECTOMY, PANCREATODUODENAL INJURY (7509)
PANCREATODUODENECTOMY, TRAUMA, FISTULA (5142)
PAPILLECTOMY, CHOLANGIOGRAPHY, CATHETER, DUODENUM, RETROGRADE FILLING, BILE DUCT (5676)
PARTIAL GASTRECTOMY, DUMPING SYNDROME CALCIUM DEFICIENCY (5779)
PARTIAL GASTRECTOMY, SERUM ALKALINE PHOSPHATASE (5789)
PARTIAL GASTRECTOMY, VAGOTOMY, PANCREAS (5954)
PARTIAL HEPATECTOMY, AUTOTRANSPLANTATION, LIVER GRAFT, HISTOPATHOLOGY (5171)*
PARTIAL HEPATECTOMY, CHOLESTEROL METABOLISM, SERUM (6502)*
PEPTIC ULCER, INDICATIONS, STOMACH (5843)
PERIARTERIAL NEURECTOMY, LIVER, NUCLEIC ACID, DNA, HEPATOCYTES, NUCLEAR MEMBRANES (5203)
PLASTIC, STOMACH, GASTRECTOMY (5809)
POLYPOSIS, LARGE INTESTINE, CARCINOMA (2737)
POST AORTIC, EROSION, HEMORRHAGE, ROENTGENOLOGY (2656)*
POSTOPERATIVE SYNDROME, DUMPING SYNDROME (0304)
POSTVAGOTOMY STOMA, BETHANECHOL, GASTRIC RETENTION (5792)
PROCTOCOLECTOMY, RECTUM, CROHN'S DISEASE (7309)
PYLOROPLASTY, DUODENUM, ULCER, PERFORATION (5028)
PYLOROPLASTY, DUODENUM, ULCER, VAGOTOMY (5842)
PYLOROPLASTY, GASTRODUODENAL ULCER, HEMORRHAGE (5347)
PYLOROPLASTY, STRESS ULCER, HEMORRHAGE VAGOTOMY (5835)
RECTAL MUCOSA (7481)
RECTUM, CANCER (5936)
RECTUM, CANCER, PERINEOABDOMINAL OPERATION (5917)
RECTUM, MYOTOMY, SPHINCTEROTOMY, HIRSCHSPRUNG'S DISEASE (5933)
RIGHT HEPATIC LOBE, TRAUMA (7555)
SIGMOID COLON, ACUTE VOLVULUS (6720)
SINGLE-LAYER SUTURE, INTESTINE (4300)
SIZE, LIVER, REGENERATION (3965)
SMALL INTESTINE, ACQUIRED MALABSORPTION, INTESTINAL OBSTRUCTION (1159)
SMALL INTESTINE, ENDOMETRIOSIS, MESENTERIC GANGLIA (5042)
SMALL INTESTINE, FUNCTIONAL COMPENSATION, RAT (1789)
SMALL INTESTINE, LIVER FUNCTION (7543)
SMALL INTESTINE, METABOLISM, HISTOCHEMISTRY (3449)*
SMALL INTESTINE, MICROELEMENT, BLOOD (2661)
SMALL INTESTINE, MORPHOLOGICAL CHANGE JEJUNUM, CHILDREN (1191)
SMALL INTESTINE, REVERSAL, ILEUM (6182)
SPHINCTERECTOMY, STENOSIS, AMPULLA OF VATER, GALLBLADDER (4999)

- SPHINCTEROTOMY, SPHINCTER OF ODDI (7659)
- STOMACH, ADDUCENT LOOP SYNDROME, SURGERY (5808)
- STOMACH, AMPULLA OF VATER, DISCONNECTION (6151)
- STOMACH, CANCER (4929), (5822), (5823), (7382)
- STOMACH, CARCINOMA (4992)
- STOMACH, CARCINOMA, GASTRECTOMY (5008)
- STOMACH, DUMPING SYNDROME (7378)
- STOMACH, DUODENUM, ULCER (5027)
- STOMACH, ESOPHAGUS, CANCER (4928)
- STOMACH, GASTRIC CARCINOMA (6629)
- STOMACH, GASTRO-DUODENAL ANASTOMOSIS (7341)
- STOMACH, GASTROTOMY (5683)
- STOMACH, LIPID ABSORPTION (1886)
- STOMACH, METHYLURACIL, DOG (7350)
- STOMACH, POLYPOSIS, COLONIC MUCOSA, COLOTOMY (5065)
- STOMACH, PRIMARY TUMOR, CHILDREN (6647)
- STOMACH, STEROID ULCER, HEMORRHAGE (6666)
- STOMACH, TRANSPORT (6637)
- STOMACH, TUMOR, POLYP (4985)
- STOMACH, ULCER, MUCOSA (5811)
- STOMACH, VAGOTOMY, CANCER, ULCER, POLYP (5805)
- SUBTOTAL, SMALL INTESTINE, DIARRHEA, NACL (4637)
- SUBTOTAL, STOMACH, CANCER (7381)
- THORACOTOMY, PEPTIC STENOSIS, CANCER, ESOPHAGUS, RADIOLOGY (5664)
- TOTAL APPENDECTOMY (5120)
- TRANSDUODENAL SPHINCTEROTOMY, INSTRUMENT, TECHNIQUE, BIOPSY, VATER'S PAPILLA (4944)
- TRANSTHORACIC HEPATOTOMY, NON-PARASITIC CYSTS (6807)
- ULCER, GASTRIC DUODENAL, GASTRIC SECRETION (7400)
- ULCER, RECURRENCE, DUODENUM (5037)
- URETEROSIGMOIDOSTOMY, HEPATIC COMA, CIRRHOSIS (6954)
- VAGOTOMY, DYSPHAGIA, ESOPHAGUS (7295)*
- VAGOTOMY, GASTRIC RETENTION, DRAINAGE, MANAGEMENT (5773)
- VAGOTOMY, GASTRIN RELEASE, ANTRAL DISTENTION (5540)
- VAGOTOMY, PEPTIC ULCER, GASTRIC ULCER, DUMPING SYNDROME, REPARATIVE SURGERY, AFFERENT LOOP (5024)
- VAGOTOMY, PYLOROPLASTY, GASTRIC SECRETION, BETAZOL TEST, HYDROCHLORIC ACID (4943)
- VAGOTOMY, ULCER, STOMACH, DUODENUM (5841)
- VAGUS, GASTRECTOMY, DUODENAL ULCER (7388)

ESERPINE
- DRUG ABSORPTION, AGE FACTORS, METABOLISM (1781)

ESORPTION
- INTESTINE, 16-ACETYL GITOXIN, ACETYL GITOXIN-GAMMA, METABOLISM (6369)

ESPIRATORY INSUFFICIENCY
- GASTRODUODENAL HEMORRHAGE, REANIMATION (1054)

RESPIRATORY SYSTEM
- LUNG, CANCER, JEJUNUM (5043)
- PLEURISY, CIRRHOSIS, PLEURAL EFFUSION (5296)
- PULMONARY CANCER, LIVER FUNCTION (7594)
- PULMONARY TUBERCULOSIS, LIVER FUNCTION HISTOLOGY (6988)
- TRACHEAL INTUBATION, ANESTHESIA, PERFORATION, CERVICAL ESOPHAGUS, CERVICAL PAIN (4975)

RESPIRATORY TRACT
- ESOPHAGEAL LESION, RADIOGRAPHY, LUNG DENSITY (6581)

RETICULUM CELL
- SARCOMA, MALABSORPTION, STEATORRHEA (1967)

RHEOGRAPHY
- HEPATO-SPLENIC (4025)
- PERIPHERAL, HEPATOSPLENIC, INFINITE TIME CONSTANT (0024)

RHEUMATISM
- COMPLICATION, INTESTINAL DISEASES (4641)
- GOUT, BENZOBROMARONIUM TREATMENT EFFECT (3660)
- GOUT, LIVER INVOLVEMENT (4442)
- STEROID ULCER, STOMACH PERFORATION, TREATMENT (1119)

RHEUMATOLOGY
- LIVER, CATALASE, GOUT (1731)

RHODANESE
- LIVER, ISOLATION (3079)

RIBONUCLEASE
- ACID-STABLE, FASTED LIVER (8657)
- PANCREAS, ALKYLATION, BROMOACETATE (2306), (2307)
- PANCREATIC, 28 S RNA, RIBOSOMAL INTERACTION (8641)
- PRIMARY STRUCTURE, DISULFIDE BONDS, PANCREAS, PIG (2316)
- RNA, TUMOR CELLS, BASOPHILIA (6303)*

RIBONUCLEIC ACID
- LIVER, ACTIVATION, 3-METHYLCHOLANTHRENE (8658)
- LIVER, CHROMATIN TEMPLATE, METHYLCHOLANTHRENE, PHENOBARBITAL (8612)*
- LIVER SYNTHESIS, NUCLEI, MITOCHONDRIA, CORTISONE (6424)*
- MESSENGER, LIVER, NUCLEI (7910)*
- MESSENGER, RNA, LIVER, NUCLEI (7911)*
- NOVIKOFF HEPATOMA ASCITES CELLS, COMPOSITION, NUCLEUS (6781)*
- SYNTHESIS, SUPPRESSION, CORTISOL (6451)*
- SYNTHESIS, WHOLE-BODY X-IRRADIATION (2423)
- TRANSFER, HENS, SERYL-TRNA, ESTRADIOL (6481)
- 28-S, PANCREATIC RIBONUCLEASE, PROTECTION (8641)

RIBOSOME
- DISSOCIATION, MONOVALENT CATIONS, LIVER, RAT (8651)
- FREE AND MEMBRANE BOUND, LIVER, ABSOLUTE STARVATION, RAT (7816)
- LIVER, ACTIVE SUBUNITS, RAT (1667)
- LIVER, ANTIGENIC SPECIFITY, OX (7045)

- LIVER, BLOOD GROUP ANTIGENS (7046)
- LIVER, ELECTRON MICROSCOPY (7784)•
- LIVER, FERRITIN, CIRRHOSIS, CANCER (6602)
- LIVER, METABOLISM (2438)
- LIVER, PEPTIDE BOND FORMATION, RAT (8512)•
- LIVER, PROTEIN SYNTHESIS, BINDING SITES (1618)
- LIVER, PROTEOLYSIS, POLYPEPTIDE (3060)
- PATTERN, LIVER, RAT, FETUS (2314)
- RECONSTITUTION, LIVER, CORE PARTICLE, RNA, RAT (2310)

RICKETS
- NUTRITIONAL, ABSORPTION, JEJUNUM, AMINO ACID, MAN (0773)
- VITAMIN D DEPENDENT, SMALL INTESTINE, FUNCTION, STRUCTURE (3420)•

RIFAMPICINE
- ANTITUBERCULOUS MECHANISM, HEPATOBILIARY EFFECTS, RAT, HYPERGLYCEMIA (5229)

RNA
- HISTOCHEMISTRY, LIVER, PANCREAS, ETHIONIN TOXICITY (3836)
- LIVER, DNA, PROTEIN (3948)•
- LIVER, RIBONUCLEASE (3804)•
- LIVER NUCLEI, GLUCOCORTICOID (7155)•
- LIVER NUCLEI, HIGH MOLECULAR WEIGHT, NUCLEASE (7915)•
- MESSENGER, LIVER CELL (7916)•
- NUCLEOLAR 45 S, NUCLEOTIDE COMPOSITION, AZO DYE-INDUCED HEPATOMA, RAT (3590)
- I-, NUCLEAR, HEPATIC CHEMICANCEROGENESIS (3567)
- POLYDISPERSE, NUCLEOPLASMIC, SYNTHESIS, ACTINOMYCIN D, LIVER, RAT, (2313)
- RIBOSOMAL, LIVER, RAT (0124)
- SYNTHESIS, INTESTINAL MUCOSA, VITAMIN A DEFICIENCY (7990)
- SYNTHESIS, LASIOCARPINE, AUTORADIOGRAPHY, LIVER (3817)•
- SYNTHESIS, LIVER, MITOCHONDRIA (0137)
- T-, HEPATIC, AMINO ACID ABSORPTION, FASTING (3089)
- TRANSFER, LIVER, CARCINOGEN (7906)•
- TRANSPORT, LIVER AMINOACYLATION (3088)
- TURNOVER, LIVER (3842)
- TURNOVER, NEONATAL LIVER, HEPATOMA, DEOXYTHYMIDINE KINASE (7117)•

ROUNDWORM
- LIVER, INTESTINE (3012)

RUBIDIUM
- LABELED, METABOLISM, LIVER CELL NUCLEI, RAT (1761)

RUPTURE
- DUODENAL, TRAUMATIC, CHILD (4162)
- DUODENUM, TRAUMA (1934)
- ESOPHAGUS, SPONTANEOUS, ATRAUMATIC, SURGICAL THERAPY (1851)
- LIVER, EXPLOSIVE CHARGE (4458)
- SMALL INTESTINE, HERNIA, MAN (1196)
- SPONTANEOUS, LIVER, PREGNANCY (5247)
- TRAUMA, LIVER, TREATMENT (2095)

SALICYLATE
- GASTROSCOPY, FECAL BLOOD LOSS (0971)

SALICYLIC ACID
- DERIVATIVES, ABSORPTION, TAURINE ANALOGUES, GASTROINTESTINAL TRACT, RAT (2350)

SALIVA
- COMPOSITION, GASTROSTOMY, ESOPHAGEAL BURNS (0300)
- IMMUNOGLOBULINS, ANTIBODIES, GASTROINTESTINAL SECRETIONS (0903)•
- IODIDE, PERTECHNETATE, BROMIDE, GASTRIC COMPARISON (1679)
- PANCREATIC AMYLASE, CATALYTIC PROPERTIES, STARCH (6418)

SALIVARY GLAND
- SECRETION, SMALL INTESTINE, MOTILITY SUBSTANCE P (0779)

SALMONELLA
- DETECTION, HEALTHY CARRIERS (1798)
- DIARRHEA, E. COLI, SHIGELLA (1525)
- INCIDENCE, MEAT, IMPORTED (3764)
- TYPHOID FEVER, ANTIBIOTIC, CHILDREN (2976)

SALMONELLOSIS
- CHLORAMPHENICOL, AMPICILLIN, ANTIBODY RESPONSE (2974)
- DIFFERENTIAL DIAGNOSIS (4658)
- DISTAL ABDOMINAL AORTA, ANEURYSM (2993)
- ENTERIC FEVER, SMALL INTESTINE (1195)
- ENTERIC FEVER, SUDAN, WIDAL TEST (1194)
- EPIDEMIOLOGY, HEALTHY CARRIERS, FOOD PRODUCTS (8439)
- ETIOLOGY, ENTEROCOLITIS, CHILD (0394)
- FOOD POISONING, IMMUNOLOGY (7687)
- FOOD POISONING, INFECTION, HYGIENE (9236)
- GALLBLADDER, INNERVATION, DOG (7712)
- IMMUNOLOGY (6943)•
- INCIDENCE, ANTIBIOTICS (2008)
- INCIDENCE, CONTAMINATION, IMPORTED MEAT (3764)
- INTESTINE, DIAGNOSIS, INDIA (2973)
- POLYSACCHARIDES, IMMUNOLOGY (2224)
- SHIGELLOSIS, RAETTIG'S VACCINE (4620)
- SYSTEMIC, FURAZOLIDONE, CHLORAMPHENICOL (3717)
- TREATMENT, CEPHALORIDINE (0692)
- TYPHOID FEVER, ANTIBIOTIC THERAPY, ENTEROHEPATIC CIRCULATION (1972)•
- TYPHOID FEVER, ANTIBIOTIC THERAPY, WIDAL TEST (1973)•
- TYPHOID FEVER, DIARRHEA, ESCHERCHIA COLI (2187)•
- TYPHOID FEVER, GASTROENTERITIS (2230)
- TYPHOID FEVER, PARATYPHOID FEVER, BACTRIM THERAPY (9237)

SALT
- LIVER, ENZYME, ATP (3061)

SARCOIDOSIS
- APPENDIX, VERMIFORM, BOECK'S DISEASE (0443)
- CROHN'S DISEASE, RELATIONSHIP (4246)
- EPITHELIOID CELL GRANULOMA, LIPOGRANULOMA, LIVER (6776)•
- PRIMARY BILIARY CIRRHOSIS, KVEIM TEST (0651)

SARCOMA
- ASCITES TUMOR, CELL CYCLE, RADIATION, MOUSE (4360)•

- DIAGNOSIS, ERROR, PANCREATIC CYST, CHILDREN (3517)
- FIBROBLASTIC, PANCREAS, HISTOLOGY, ETIOLOGY (8230)
- KAPOSI'S, GASTROINTESTINAL INVOLVEMENT, GASTRIC MUCOSA, DUODENAL BULB DEFORMITY (0291)
- KUPFFER-CELL (3566)
- LEIOMYO-, CECUM (4291)
- OSTEOGENIC, LIVER, HEMOCHROMATOSIS (2839)
- PRIMARY, STOMACH, ANATOMOPATHOLOGY (8098)
- RETICULO-, SMALL INTESTINE (4236)
- RETICULUM, STOMACH (1894)
- RETICULUM, STOMACH, HISTOLOGY (4156)
- RETICULUM-CELL, MALABSORPTION SYNDROME, SMALL INTESTINE (4233)
- RHODAMINE, IMPLANT, DELTA 4-STEROID HYDROGENASE, RAT LIVER (2279)*
- SMALL INTESTINE, CARCINOMA (8149)
- SMALL INTESTINE, SURGERY (7429)
- SMALL INTESTINE, SURGERY, CHILDREN (4229)
- SPINDLE CELL, MECKEL'S DIVERTICULUM, NEONATE (4220)
- STOMACH, GASTRIC RESECTION, RADIATION THERAPY (1081)
- STOMACH, GASTROSCOPY (7238)
- STOMACH, RESECTION, ULCER (1909)
- STOMACH, VIRCHOWS NODE (1072)

SCANNING
- LIVER, GOLD, TECHNETIUM SULFIDE, SPLEEN (2511)*
- LIVER, TECHNETIUM-99M, INTERPRETATION (4032)
- PANCREAS, PANCREATIC FUNCTION, LABELED SELENOMETHIONINE (2025)
- ULTRASOUND, DIAGNOSIS, CYSTIC LESION, ASCITES, LIVER, UPPER ABDOMEN (1811)*

SCARLET FEVER
- GALLBLADDER, HYDROPS, CHILDREN (1494)

SCHISTOSOMA
- BILHARZIOSIS, SERUDIAGNOSIS, IMMUNOFLUORESCENCE (0231)
- CARCINOMA, BLADDER, EPIDEMOLOGY, ECOLOGY (0722)
- EXTRACORPORAL BLOOD CIRCULATION FILTRATION (3781)
- INTERCALATUM, PARASITOLOGY, BILHARZIASIS, AFRICANS (4684)
- MANSONI, EGGS, COUNTING, SEDIMENTATION, FECES (2243)
- MANSONI, SPECIES DIFFERENCES (2251)*
- PEDIATRICS, ANUS, INFECTION (2254)
- SPECIES, IMMUNOFLUORESCENCE, BILHARZIASIS (4075)

SCHISTOSOMIASIS
- ANTIMONIAL TREATMENT, LIVER UPTAKE (0136)
- BILE PIGMENT, BILHARZIASIS, LIVER (2244)
- CLINICAL FEATURES, SMALL INTESTINE, MORPHOLOGY (9274)
- CONTROL, PUERTO RICO (0715)
- EPIDEMIOLOGY, CAMBODIA (9275)
- EPIDEMIOLOGY, INTESTINE (2256)
- EPIDEMIOLOGY, KERMACK-MCKENDRICK THEORY (3775)
- EPIDEMIOLOGY, RHODESIA (8498)
- ETIOLOGY, EPIDEMIOLOGY (3021)
- EXPERIMENTAL CHEMOTHERAPY (0711)*
- GASTROINTESTINAL TRACT, EMETIC, VEHICLE (1555)
- INTESTINAL, HYPERTONIC SALINE (0225)
- INTESTINAL, LIVER TENDERNESS (0719)
- INTESTINAL, URINARY INFECTIONS (0717)
- KATAYAMA DISEASE, IMMUNOGLOBULIN LEVEL EOSINOPHILIA (8499)
- LIVER, FIBROSIS, LYMPH (3767)*
- LIVER CIRCULATION, PORTAL BLOOD FILTRATION (1534)
- LIVER FIBROSIS, MONKEY (0537)*
- MULTIPLE INFECTION, EGG EXCRETION, STOOL (0721)
- NATURAL HISTORY, SINGLE AND MULTIPLE EXPOSURE, CHIMPANZEE (3776)
- NIRIDAZOLE TREATMENT, BRITAIN (8497)
- PARASITIC INFECTIONS, TRYPTOPHAN METABOLISM, BILHARZIASIS, TARTAR EMETIC (2255)
- PIPE STEM FIBROSIS, PORTAL HYPERTENSION (7004)*
- RESISTANCE, SOUTH AFRICA (0716)
- RODENT (0176)
- SCHISTOSOMA MANSONI, ANTIBODY, PLACENTAL BARRIER, PASSAGE (3770)*
- SCHISTOSOMA MANSONI, LIVER, HISTOPATHOLOGY, SOUTH AMERICA (2260)
- SMALL INTESTINE OBSTRUCTION, MICE (1536)
- TRANSMISSION, WATER (0714)
- TREATMENT, CAMEROON (2253)
- TREATMENT, ETIOPATHOGENIC BASIS (0713)

SCINTILLOGRAPHY
- LIVER, ABSCESS, DIAGNOSIS (4081)
- LIVER, KUPFFER CELL, SPACE OCCUPYING LESIONS (1801)*
- LIVER, ROSE BENGAL, CIRRHOSIS, BILIARY ATRESIA, OBSTRUCTIVE JAUNDICE (1810)*

SCINTIPHOTOGRAPHY
- BILE DUCT OBSTRUCTION, EXTRAHEPATIC-INTRAHEPATIC (7231)
- DIAGNOSIS, PELVIC TRAUMA, RIGHT DIAPHRAGM, TENSION HEPATOTHORAX, CARDIORESPIRATORY ARREST (2510)*

SCINTOGRAPHY
- AU 198, RADIO-I ALBUMIN, HEPATIC TUMOR DIAGNOSIS (3302)
- LIVER, CIRRHOSIS, HEPATITIS, BILIARY DUCT, OBSTRUCTION, STEATOSIS (2537)
- LIVER, ECHINOCOCCOSIS (6578)
- LIVER FUNCTION TESTS, CORRELATION WITH SCANNER AND GAMMA CAMERA DIAGNOSIS (3299)
- LIVER, FUNCTIONAL TEST, AU 198 COLLOID (2535)
- NUCLEAR, PANCREAS (4057)
- 131 IODINE SULFOBROMOPHTHALEIN, METABOLISM, JAUNDICE (0224)
- PANCREAS, PANCREATITIS, LIVER SCANNING SE75 METHIONINE (6535)
- PANCREAS, SELENIUM-LABELED METHIONINE (0196)*
- SELENOMETHIONINE SE75, PANCREATITIS (6755)

SCLERODERMA
- AMYLOIDOSIS, GASTROINTESTINAL INVOLVEMENT (0699)
- SMALL INTESTINE, PNEUMATOSIS CYSTOIDES INTESTINALIS (1949)

SCLEROSIS
- COMMON BILE DUCT, SCLEROSING CHOLANGITIS, ETIOLOGY, ASSOCIATED DISEASE (2921)
- ESOPHAGUS, MOTILITY (4126)

SECRETIN
- ADMINISTRATION, INFUSION, INJECTION, DUODENUM (6411)•
- ANGIOGRAPHY, DIAGNOSIS, PANCREATIC DISEASE (2768)•
- BRUNNER'S GLANDS, CHOLECYTOKININ-PANCREOZYMIN, DUODENAL MOTILITY (7194)•
- DUODENAL ASPIRATE, OSMOLALITY, ELECTROLYTE (7987)
- GASTRIC SECRETION, DUODENAL ACIDIFICATION (6398)•
- HORMONES, CHEMICAL STRUCTURE SYNTHESIS (6333)
- INHIBITION, GASTRIC SECRETION, HISTAMINE-STIMULATED (2368)•
- MOTILITY, STOMACH MUSCLE, RHYTHMIC CONTRACTION (8573)•
- PANCREAS (3921)
- PANCREAS, BICARBONATE RESPONSE, STOMACH, INTESTINE (3228)•
- PANCREAS, CYCLIC AMP, GASTRIC SECRETION (1689)
- PANCREAS, PANCREOZYMIN (0811)•
- PANCREOZYMIN, PANCREAS, BICARBONATE (0963)
- STIMULATION, PANCREATITIS (0944)•
- STOMACH, ACID, PEPSIN, DUODENUM (2369)•
- STOMACH, EMPTYING, SECRETION (6379)•
- STOMACH, GASTRIC ACID SECRETION (0786)•
- STOMACH, PEPSIN, SECRETION (0793)•

SECRETION
- ABSORPTION, TRACER TECHNIQUE, LIVER, ULCER, HEPATITIS, GASTRITIS (2825)
- ACID, DUODENAL ULCER, CALCIUM CARBONATE (5768)
- ACID, GASTRIC ULCER (7268)
- ACID, HISTALOG, DUODENAL ULCER (5678)
- ACID, STOMACH, DUODENUM (4866)
- ACID, STOMACH, FROG, GASTRIN VAGOTOMY (5537)
- ACID, STOMACH, MUCOSA (2628)
- ACID, STOMACH, PSORIASIS (0082)
- ACID, STOMACH, TELEMETRIC DETERMINATION (5548)
- ACID, STOMACH, ULCER (4910)
- ACID, ULCER, STOMACH (3287)
- AMYLASE, PANCREAS (4816)
- BILE, BILE ACID BIOSYNTHESIS (7187)
- BILE, CHOLECYTOKININ, GASTRIN II, CERULEIN (8619)•
- BILE, FLOW RATE, CHOLESTEROL (8632)•
- BILE, GUINEA PIG, HYDROXY ACID (2467)
- BILE, REGULATION, INTESTINAL (7883)•
- BILE SALT, CIRRHOSIS, CHOLECYSTECTOMY, PANCREOZYMIN, CHOLECYSTOKININ, SECRETIN (4506)•
- BILIRUBIN, LIVER, SHEEP (4781)
- CERULEIN, PANCREAS, BILE (7878)•
- CHOLERETIC AGENT, BILE ACID, BILE SALT (2911)
- CHOLESTEROL, SMALL INTESTINE (7199)
- CHRONIC GASTRITIS, THERAPEUTIC WATER, ACIDITY (2590)
- COLON, ELECTROPHORESIS (0170)
- COLON, ENZYME, PROTEIN, NITROGEN, MICROORGANISMS, VITAMINS, RABBIT (4886)•
- COLON, POTASSIUM, PROCTOCOLITIS, DIARRHEA (3463)•
- DIGESTION, SMALL INTESTINE, ABSORPTION (3235)
- DISORDERS, THERAPY, VAGOPAX (0271)•
- DUODENAL ULCER, STOMACH, ATROPINE (2635)
- DUODENUM, SECRETIN, INFUSION, INJECTION (6411)•
- ELASTASE, PANCREAS, DRUG EFFECT (2364)
- ENZYME, PANCREAS, PERFUSION, DUODENUM (6409)•
- ENZYME, PANCREAS, TRYPSIN INHIBITOR (3153)•
- EXOCRINE PANCREAS, ACROMEGALY (4343)
- EXOCRINE PANCREAS, ENZYME, GLUCAGON, GLUCOSE (5552)•
- GASTRIC, ACHLORHYDRIA, PEPSIN, NITROGEN CONTAINING COMPOUNDS, VAGOTOMY, ULCER, MAN, DOG (4184)•
- GASTRIC, ACID, ETHANOL, HISTAMINE, GASTRIN, RAT (3133)•
- GASTRIC, ACID, HISTAMINE, RAT (3151)
- GASTRIC, ACID, NORMAL VALUES (8009)•
- GASTRIC, ACID, PEPSIN, HISTAMINE (6394)•
- GASTRIC, ACID, PREDNISOLONE, HISTALOG, PHENTOLAMINE (6396)•
- GASTRIC, ACID, 2-DEOXY-D-GLUCOSE, GLUCOSE, 3-O-METHYLGLUCOSE, RAT (3136)•
- GASTRIC, ACID PRODUCTION, INHIBITION, IMIDAZOLINE DERIVATIVES (5534)•
- GASTRIC, ACIDINE-MUCOSINE, ACIDINE-PEPSIN, ABOMINE (3141)
- GASTRIC, ACIDITY, LIGATED PYLORUS, RAT (8587)
- GASTRIC, ACIDITY REDUCTION, EXCHANGE DIFFUSION (0079)
- GASTRIC, ACIDITY TITRATION, ACETYLCHOLINE, GASTRIN (5532)•
- GASTRIC, ALTERATION, INDOMETHACIN (6395)•
- GASTRIC, ANALYSIS, PEPTIC ULCER (0349)
- GASTRIC, ANTICHOLINERGICS, TRANQUILIZER, GASTRIC ULCER, DUODENAL ULCER (5040)
- GASTRIC, ANTIGASTRIN, GASTRIN, POUCH, FISTULA DOG (3134)•
- GASTRIC, ADRENERGIC-BLOCKING AGENT, ULCER, RAT (5829)•
- GASTRIC, BASAL, ACID, PEPSIN, ADRENOMIMETIC (5546)
- GASTRIC, BETAZOL TEST, PYLOROPLASTY, VAGOTOMY, HYDROCHLORIC ACID (4943)
- GASTRIC, BRADYKININ (5539)
- GASTRIC, CERULEIN (7859)•
- GASTRIC, CERULEIN, HISTAMINE, PENTAGASTRIN (7861)•

STRIC, CHIEF CELL, AMINO ACID, MUCOSA, PRODUCTIN (6288)•
STRIC, CYCLIC AMP, PANCREAS, SECRETIN (1689)
STRIC, DIAGNOSTIC PROCEDURE, HEIDELBERG PH CAPSULE, ACIDITY TITRATION (5656)•
STRIC, DRUG STIMULATED (0074)
STRIC, DUODENAL ULCER, HISTAMINE (3410)
STRIC, EFFECT, HYOSCYAMINE (3387)•
STRIC, ELECTROLYTE, ACID-BASE BALANCE (3144)
STRIC, ENTERECTOMY, BILIARY FISTULA (7873)
STRIC, ENZYMATIC ACTIVITY (0178)
STRIC, GASTRIC TUBE, TRIPLE LUMEN, SUCTION, FEEDING (3377)
STRIC, GASTRIN, FROG, ACID, PEPSIN (5549)
STRIC, GASTRODUODENAL ULCER, SURGERY (3396)
STRIC, GASTROINTESTINAL MUCUS, FUNCTION, COMPOSITION (7803)
STRIC, GLUCAGON INHIBITION, PENTAGASTRIN, HISTAMINE (8595)
STRIC, GLYCOPROTEIN (7772)•
STRIC, HEXAMETHONIUM, GASTRIC ACID, PEPSIN, HISTAMINE, PENTAGASTRIN (5535)•
STRIC, HIATAL HERNIA, SURGERY, VAGOTOMY (8807)
STRIC, HISTALOG, CONTRAINDICATIONS, MYOCARDIAL ISCHEMIA (8025)
STRIC, HISTAMINE, MAXIMAL SECRETION TEST, MAN (8713)
STRIC, HISTAMINE, PENTAGASTRIN (3149), (7871)
STRIC, HISTAMINE-STIMULATED, INHIBITION (2368)•
STRIC, HYDROCHLORIC ACID, PEPSINOGEN (7777)•
STRIC, HYOSCYAMINE, EFFECT, PENTAGASTRIN, ULCER, DUODENAL, PEPTIC (3387)•
STRIC, HYPERACIDITY, LONGLASTING NEUTRALIZATION, PEPTIC ULCER (8862)
STRIC, INACTIVATION OF PENTAGASTRIN, LIVER HOMOGENATE, HUMAN SERUM, RAT (8596)
STRIC, INHIBITION, CEREBRAL RELEASE, LIMBIC SYSTEM (6408)
STRIC, INHIBITION, LIPOPOLYSACCHARIDE, ADRENERGIC BLOCKING AGENTS (1666)•
STRIC, INHIBITORY FACTOR, RESERPINE, RAT (8592)
STRIC, INVESTIGATION, CURRENT TECHNIQUES, VAGOTOMY (8774)
STRIC, IRON BINDING CAPACITY, STIMULATION, HISTAMINE, DUODENAL ULCER (3390)•
STRIC, JEJUNUM, PH, FAT DIGESTION (5893)
STRIC, LACTIC ACID, CARCINOMA (6613)•
STRIC, LIPIDS, THIN LAYER CHROMATOGRAPHY (8593)
STRIC, MAGNESIUM, PEPTAVLON, HISTAMINE (7094)•
GASTRIC, METHODOLOGY, DUODENAL ULCER (1678)
GASTRIC, METOCLOPRAMIDE, PHARMACODYNAMICS, MOTILITY (8590)
GASTRIC, MOTILITY, NERVOUS CONTROL (5472)
GASTRIC, MOTOR FUNCTION (0328)
GASTRIC, MUCOSA, HISTAMINE (7866)•
GASTRIC, NICOTINE, CHRONIC (7876)
GASTRIC, NICOTINE, RAT (5542)
GASTRIC, PANCREATIC, JEJUNAL DISTENSION (7862)•
GASTRIC, PATHOLOGY, LYSOZYME ACTIVITY (6652)
GASTRIC, PATTERN, STOMACH PREPARATION (3143)
GASTRIC, PENTAGASTRIN (6542)
GASTRIC, PENTAGASTRIN, BETAZOLE (0762)•
GASTRIC, PENTAGASTRIN, GASTRITIS (7327)•
GASTRIC, PENTAGASTRIN TEST, HISTAMINE STIMULATION (0061)•
GASTRIC, PEPSIN, ANALYSIS (6521)•
GASTRIC, PEPSIN, SEROTONIN, MUCOSA (7868)
GASTRIC, PEPTIC ULCER, CHOLINERGIC ACTIVITY, STOMACH (5848)
GASTRIC, PERISTALTIC PUMP, AUGMENTED HISTAMINE TESTS (0296)
GASTRIC, PROSTAGLANDIN E1, PENTAGASTRIN, MAN (8581)•
GASTRIC, PROTEASES, PROTEIN DIGESTION, PATHOLOGY (8529)
GASTRIC, PROTEOLYTIC ACTIVITY (0075)
GASTRIC, PYLORUS LIGATURE, ESOPHAGEAL LIGATURE, RAT (8588)
GASTRIC, REDUCTION, DUODENAL OSMOLARITY, ULCER (3391)•
GASTRIC, RESPONSE, DUODENAL ACIDIFICATION (6398)•
GASTRIC, SPONTANEOUS, SUBMAXIMAL BETAZOLE TEST, PEPTIC ULCER (8765)
GASTRIC, STABILITY, DIGITALIS MOLECULF (0072)
GASTRIC, STIMULATION, BETAZOLE HYDROCHLORIDE, GASTRIC TUMOR, MAN (8960)
GASTRIC, STIMULATION, EXTERNAL PANCREATIC FISTULA (3147)
GASTRIC, STIMULATION, HISTAMINE, INSULIN, DUODENAL ULCER (8886)
GASTRIC, STIMULATION, PENTAGASTRIN, HISTAMINE (6379)•
GASTRIC, STUDIES, SUBJECT POSITION, NASOGASTRIC TUBE POSITION (3293)
GASTRIC, ULCER, DUODENUM, SURGERY (7400)
GASTRIC, UREASE-CARBODEHYDRASE-SUBSTRATE COMBINATION, ACID-BASE REGULATION, GASTRIC MUCOSA, RAT (8594)
GASTRIC, VISUAL DEPRIVATION, DOG (7100)
GASTRIC, VISUAL DEPRIVATION, DOG, HISTAMINE (5541)
GASTRIC, WOMEN, LABOR (0076)
GASTRIC ACID, CEREBRAL INHIBITION, ATROPINE, INSULIN, HISTAMINE, SEROTONIN (5536)

GASTRIC ACID, DUODENAL ULCER, ANTICHOLINERGICS (1112)•
GASTRIC ACID, GASTRIN, PENTAGASTRIN (5530)•
GASTRIC ACID, INHIBITION, ANTIGASTRIN, PENTAGASTRIN, STIMULATION, RAT (4807)•
GASTRIC ACID, INTRACEREBROVENTRICULAR INJECTION, ANTICHOLINERGICS, HEMORRHAGE (3389)•
GASTRIC ACID, MAXIMUM (6524)
GASTRIC ACID, PENTAGASTRIN (7870)
GASTRIC ACID, PENTAGASTRIN, HISTAMINE, EXTRA GASTRIC VAGOTOMY (7860)•
GASTRIC ACID, PEPSIN, PEPSINOGEN, DOPA, METHLYDOPA (0068)•
GASTRIC ACID, POLYPEPTIDES (3142)
GASTRIC ACID, RADIOTELEMETRY (7262)
GASTRIC ACID, SECRETIN, CHOLINERGIC (8580)•
GASTRIC ACID, VAGOTOMY, ATROPINE SULFATE (0270)•
GASTRIC ACIDITY, PEPSIN, 2-DEOXY-D-GLUCOSE, DRUG, GASTRIC FISTULA (2389)
GASTRIC ACIDITY, TITRATION (0185)•
GASTRIC HYDROCHLORIC ACID, SECRETIN, PANCREAS (2385)
GASTRIC HYPERSECRETION, PORTACAVAL SHUNT, HORMONE (8370)•
GASTRIC JUICE, PEPTIDE, MAN (4806)•
GASTRIC MUCIN, CHEMISTRY, GLYCOPROTEIN (8586)
GASTRIC MUCOSA, ETHANOL, HEIDENHAIN POUCH (8090)•
GASTRIC PEPTIC ULCER, MINERAL WATER (5851)
GASTRIC SECRETION, HYPERMAGNESEMIA, HYPERCALCEMIA (0800)•
GASTRIC ULCER, ACIDITY, STOMACH TUBE (5653)•
GASTRIN, ACETYLCHOLINE, LYMPH (8582)•
GASTRITIS, ACID, PYLORUS (3362)
GASTROINTESTINAL, IMMUNOGLOBULINS, PROTEOLYTIC ENZYMES, BOVINE MILK, INCUBATION, STOOL EXTRACTS (5633)
GASTROINTESTINAL, LOCALLY PRODUCED ANTIBODIES (0903)•
HCl, POST-GASTRECTOMY (0282)
HEIDENHAIN POUCH, GANGLIONIC BLOCKING AGENTS, GANGLIONIC STIMULANTS, DOG (1677)
HISTAMINE, ACID (7865)•
HYPER-, DUODENAL ULCER, GASTRIC RESECTION, VAGOTOMY, PYLORIC, STENOSIS(4951)
IMMUNE SYSTEM, IMMUNOGLOBULIN (3828)
ION, SMALL INTESTINE, DIGESTION, SHEEP (4877)
JEJUNAL GRAFT, GASTROJEJUNAL AUTOPLASTY (7376)
JEJUNUM, CHOLERA EXOTOXIN, CYCLOHEXIMIDE (6158)•
LACTATION, ABSORPTION, SMALL INTESTINE, PREGNANCY (4753)
LIVER, ALPHA2-(ACUTE PHASE) GLOBULIN, SYNTHESIS (6450)•
LIVER, COPPER, CERULOPLASMIN (1702)•
LIVER, ENZYME, CASTRATION (3989)
LIVER, PIGMENT, BILIRUBIN (1734)
LIVER, TRANSPLANT (3990)
LIVER, TRANSPORT, CHLOROGUANIDE-TRIAZINE (1717)•
MECONIUM, ILEUS, SMALL INTESTINE, SURGERY (5874)
MECONIUM, WATER-SOLUBLE PROTEIN, ILEU (5450)
MOTILITY, GASTROINTESTINAL TRACT, PLEURITIS, PNEUMONIA (7690)
PANCREAS, AMYLASE, GLYCO-AMYLASE TEST (5728)
PANCREAS, BICARBONATE, ENZYME, EXOCRINE, ACETYLCHOLINE (1688)•
PANCREAS, BICARBONATE RESPONSE, STOMACH, INTESTINE (3228)•
PANCREAS, CAERULEIN, ACIDITY, PEPSIN (7877)•
PANCREAS, CASEIN HYDROLYSATE FISTULA (5555)
PANCREAS, CHOLECYTOKININ, PANCREOZYM (7882)
PANCREAS, CHOLELITHIASIS (5329), 6146)
PANCREAS, CHRONIC PANCREATITIS, HIGH PROTEIN DIET (7519)
PANCREAS, CIRCULATION, DRUG EFFECTS (3152)•
PANCREAS, COLLECTION, SURGERY (4772)
PANCREAS, ENZYME, AMYLASE, PROTEASE, MALNUTRITION, PROTEIN DIET (4327)•
PANCREAS, ENZYME, ELECTROTHERAPY, CHRONIC GASTRIC DISEASE (6161)
PANCREAS, FASTING, ENZYME (4813)
PANCREAS, GLUCAGON (3156)•
PANCREAS, KIDNEY DISEASE, AMYLASE, LIPASE, BICARBONATE (4330)•
PANCREAS, NERVOUS CONTROL, ENZYME, ACETYLCHOLINE (1686)•
PANCREAS, PANCREATIC DISEASES (7285)
PANCREAS, PEPTIC ULCER, STOMACH, DUODENUM (5843)
PANCREAS, PEPTIDE, PANCREATIC CHOLER (5958)
PANCREAS, PROTEIN, TRYPSIN (3854)
PANCREAS, REGULATION, DRUGS (7879)•
PANCREAS, SECRETIN, PANCREOZYMIN (3289)
PANCREAS, SMALL INTESTINE, LIPASE, TRIBUTYRINE (4815)
PANCREAS, VAGAL STIMULATION (3157)
PANCREATIC, STIMULATION, BILE SALTS (7881)•
PANCREATIC BICARBONATE, INTESTINAL ACIDIFICATION (8597)•
PANCREATIC JUICE, HUNGER, PANCREOZYMIN (2363)
PANCREATITIS, ENZYME, EDEMA, ACUTE, DIAGNOSIS, SCLEROSIS (2792)
PEPTIC ACTIVITY, CARBENOXOLONE, GLYCYRRHETINIC ACID (7091)•
PEPTIC ESOPHAGITIS, ULCER, STENOSIS, OPERATION, CANCER, DIAGNOSIS (2555
PHOSPHOLIPID, SYNTHESIS, BILIARY TRACT, GALLSTONE (6129)
SALIVA PROTECTION, PEPTIC ULCER, GASTRIC JUICE, BILE, DUODENUM (5832

ROTONIN, ENDOCRINE CELLS, STOMACH
3860)
LL INTESTINE, TESTOSTERONE, BICAR-
ONATE, AMYLASE (3236)
MACH, ACID, CHOLECYSTOKININ (2374)•
MACH, ACID, DUODENUM, ULCER (5033)
MACH, ACID, FETAL, HORMONAL CON-
ROL (2366)•
MACH, ACID, HYPEROSMOLAL (7089)•
MACH, ACID, INHIBITION, CHOLECYS-
OKININ (2375)•
MACH, ACID, MOTILITY (0803)•
MACH, ACID, MUCUS, PEPSIN, HISTA-
OG-STIMULATED (2371)•
MACH, ACID, PEPSIN, HYPOTHALAMUS
TIMULATION (0466)
MACH, ACID, VOLUME, ULCER, HETER-
NIUM BROMIDE (4792)•
MACH, ACIDITY TITRATION, PH,
UFFERS (3908)•
MACH, ANTIBODY, CARCINOMA, ACID,
NEMIA (3363)
MACH, BRADYKININ, ANGIOTENSIN,
ALCIUM IONS, EDEDOISIN (4805)
MACH, CHRONIC FISTULA, FERRET
0069)•
MACH, DUODENAL ACIDIFICATION
6398)•
MACH, DUODENAL ULCER, HISTAMINE,
ASTRIN, PEPSIN (4935)
MACH, ESOPHAGEAL, CHEMICAL BURNS
0253)
MACH, FISTULA, NICOTINE (4998)
MACH, FUNCTION, MUSIC EFFECTS
1673)•
MACH, GASTRIC CONTENT, NITROGEN
RACTION, HISTAMINE (2383)
MACH, GASTRIC PRESSURE (5551)
MACH, GASTRIN (3915)
MACH, GASTRIN-STIMULATED (0067)•
MACH, HISTAMINE METABOLISM (0802)•
MACH, MUCIN, HISTOCHEMISTRY (7036)•
MACH, MUCOSA (4152)
MACH, MUCOSA, NICOTINE (4809)
MACH, PANCREAS, SECRETIN, JEJUNAL
CIDIFICATION, MAN (3903)•
MACH, PAS (5545)
MACH, PEPSIN, ACID (3137)•
MACH, PEPTIC ULCER (7396)
MACH, QUANTITATIVE DETERMINATION
7256)
MACH, SALIVOGASTRONE INHIBITION
5787)
MACH, SECRETIN, CHOLECYSTOKININ
6379)•
MACH, SURGERY, ULCER (7254)
MACH, TETRAGASTRIN (6404)
MACH, TRANSPORT, URIC ACID (4761)•
MACH, ULCER (3409)
MACH, ULCER, ZOLLINGER-ELLISON
YNDROME (3265)•
MACH, VAGUS, SURGERY (3355)
MACH ACID, HYPERCHLORHYDRIA (1860)•
GERY, STOMACH, TOXIC GOITER, MOTOR
CTIVITY, RADIOLOGY (2587)
PSIN, CHYMOTRYPSIN, INTESTINAL,
LANDULAR CELLS, ANNELID (5634)
ER, DRUG EFFECT, GASTRODUODENITIS,
EMORRHAGE (2634)

  UROPEPSIN, ACUTE DYSENTERY, GASTRIC JUICE (2957)
  XYLAMIDE ANTISECRETION-ANTIGASTRIN, PANCREATITIS (4350)
SECRETORY INHIBITOR
  GASTRIC FACTOR, RESERPINE, RAT (8592)
  MUCOSAL BLOOD FLOW, AMINOPYRINE-CLEARANCE VASOPRESSIN, GASTRIN (1672)•
SELENIUM
  BINDING, LIVER, DIET (3216)
SEPTICEMIA
  GASTROINTESTINAL SURGERY (2229)
  GRAM NEGATIVE (2644)
SERINE
  METABOLISM, PORTACAVAL SHUNT, RAT (1704)•
SEROLOGICAL DIAGNOSIS
  BILHARZIASIS, IMMUNOFLUORESCENCE (4059)
  PARASITIC DISEASES, MAN (1556)
SEROLOGY
  ESCHERICHIOSIS, DIAGNOSIS (7282)
SEROTONIN
  ANTAGONIST, ANOREXIA NERVOSA (2994)
  5-HYDROXYTRYPTAMINE, METABOLISM, DISTURBANCE, LAENNEC'S CIRRHOSIS (2900)
  SMALL INTESTINE, OBSTRUCTION, STOMACH (2659)•
SERUM
  BETA-GLUCURONIDASE, PARATHION, RAT (3617)
  ENZYME, LIVER (4085)
  FREE AND ESTERIFIED FATTY ACIDS, SPECTROPHOTOMETRY, LIVER DISEASES (9144)
  HEMIN CONSTITUENTS, METHEMALBUMIN, ACUTE PANCREATITIS (7521)
  LIVER REGENERATION, GROWTH FACTOR, MITOSIS, RNASE, DNASE (7116)•
  MAGNESIUM LEVELS, CIRRHOSIS, CHILDREN (2658)•
  METHEMALBUMIN, PANCREATITIS (6940)•
  PHOSPHATASE, ALKALINE, HEPATOBILIARY TRACT (4044)
  PROTEIN-BOUND ZINC, CIRRHOSIS (2892)•
SERUM ALBUMIN
  PRODUCTION, HEPATOMA, HYDROCORTISONE CELL CULTURE, RAT (0137)
SERUM ARGININOSUCCINATE LYASE
  LIVER DISEASE, CONCENTRATION INDEX (2869)•
SERUM PROTEIN FRACTION
  ABDOMINAL SURGERY (0579)
  CHRONIC HEPATITIS, CHRONIC CIRRHOSIS, ANTIBODY (2819)
  HEPATOPATHY, PHOSPHATIDYLCHOLINE, THIAMINE, RIBOFLAVIN (2823)
  INFECTION, RESPONSE, TOXOCARA CANIS, BABOON (3774)
  KWASHIORKOR, MALNUTRITION (2692)
  LIVER FUNCTION TEST, FALCIPARUM MALARIA, MAN (0223)
  VIRAL HEPATITIS, TRANSFUSION, EPIDEMIOLOGY (2877)
SEX FACTOR
  AGE FACTORS, LIVER ENZYMES, GLUCAGON (1696)•

- SHIGELLA
  - APPENDICITIS, DYSENTERY (3461)*
  - BREAST-FED NEONATES, DIARRHEA, SANITATION, GUATEMALA (1529)*
  - DETECTION, HEALTHY CARRIERS (1798)
  - DIARRHEA, BACTERIA, ENTERITIS (2971)
  - DIARRHEA, E. COLI, SALMONELLA (1525)
  - DYSENTERY, DIARRHEA (4637)
  - INFECTION, FATAL ENTERITIS, CHILDREN (4583)
  - SENSITIVITY, COLICIN, DYSENTERY (0479)
  - SONNEI, INCIDENCE, DYSENTERY, SERBIA (3730)
  - SONNEI, INFECTION, APPENDICITIS (4592)
  - SUSCEPTIBLE HOSTS, DYSENTERY (4607)
- SHIGELLOSIS
  - SALMONELLOSIS, RAETTIG'S VACCINE (4620)
- SHOCK
  - ACUTE PANCREATITIS, HEMODYNAMIC ALTERATIONS, THERAPY (9035)
  - EXPERIMENTAL, LIVER, RED CELL (8283)
  - LIVER, HEMORRHAGE, MORPHOLOGY (7539)*
  - SEPTIC, SURGERY, SMALL INTESTINE (8152)
- SIDEROSIS
  - CYTO, DIMETHYL SULFOXIDE (0018)
  - EPITHELIAL IRON, COLLATERAL CIRCULATION ROLE, CIRRHOTICS, AFRICANS (0636)*
- SIGMOID
  - CARCINOMA, PERIDIVERTICULITIS, ILEUS, STENOSIS (6703)
  - DIVERTICULITIS, UTERINE PERFORATION, ANATOMOPATHOLOGY (8960)
  - ENDOMETRIOSIS, INTESTINAL OCCLUSION, CLINICAL SYMPTOMATOLOGY (8964)
  - RECTOSIGMOIDAL JUNCTION, RADIOLOGY, INDIRECT LIGHT BEAM (8737)
  - STENOSIS, RADIATION INJURY, METASTASES, RESECTION (6577)
- SIGMOID DIVERTICULITIS
  - CANCER, DUHAMEL'S OPERATION (8204)
  - COLON, MUCOSA, AGED SUBJECTS, ABDOMINAL PAIN, INFLAMMATION, PERFORATION SURGERY (2740)
  - COLON, PERFORATION (2701)
  - PERIDIVERTICULITIS (0446)
- SIGMOIDOSCOPY
  - CARCINOMA, BENIGN POLYPS, DETECTION, RECTAL (2499)*
- SLEEP
  - LIVER, MICROSOME, TRANQUILIZER (1742)
- SMOOTH MUSCLE
  - COLON, TAENIA COLI (3783)
  - ELECTROPHYSIOLOGY, CONTRACTION, MEMBRANE POTENTIAL, BETA BLOCKING AGENT, LARGE INTESTINE, TAENIA COLI (2474)*
  - LARGE INTESTINE, RECTUM, DIVERTICULA, RESECTION, MOTILITY, PRESSURE STUDY, EATING, PROSTIGMINE, DISTENTION (4268)*
  - PORTAL VEIN, METABOLISM, MITOCHONDRIA (3043)
  - SMALL INTESTINE, ILEUM, TETANUS, CONTRACTION, HISTAMINE, INHIBITION (2472)*
  - SMALL INTESTINE, JEJUNUM, ILEUM, MOTILITY, PROPYLENE GLYCOL, ANTAGONISTS (3885)*
  - STOMACH, ESOPHAGUS, SPHINCTER, PHRENOESOPHAGEAL MEMBRANE (3883)*
- SODIUM
  - ABSORPTION, JEJUNUM, BICARBONATE (3100)*
  - BALANCE, GASTRIC CANCER (0283)
  - CONCENTRATION, MALARIA EFFECT, MONKEY (2273)*
  - FLUX, ILEUM, ALANINE, RABBIT (3106)*
  - HEPATIC CIRRHOSIS, METABOLISM, WATER, POTASSIUM (2899)
  - LEVEL, INFUSTION THERAPY, GASTRECTOMY (4179)
  - LIVER, RAT, TRANSPORT, DISTRIBUTION, NUCLEUS (2351)
  - POTASSIUM, MEDIUM SMOOTH MUSCLE, CONTRACTION, ANOXIA (2475)
  - TISSUE LEVEL, VITAMIN A, NACL, ALANINE (3178)
- SODIUM FLUORIDE
  - EPINEPHRINE RESPONSE, ADENYL CYCLASE LIVER, RAT (3181)
- SOMATOTROPIC HORMONE
  - ESOPHAGUS, RAT, EPITHELIUM (0797)*
- SPASM
  - ANTRAL PORTION OF STOMACH, ACUTE SYMMMETRIC ULCERATION (1874)
  - ESOPHAGUS (8076)
- SPECTROPHOTOMETRY
  - ABSORPTION CURVE, ALBUMIN, BILIRUBIN (6770)*
  - STOMACH, GASTRIC JUICE (3281)
- SPHINCTER
  - ANAL, ELECTROMYOGRAPHY (6532), (6533)
  - ANAL, ILEOCECAL, DIARRHEA, VOLUMOGENIC, EXPERIMENTAL (3886)*
  - ANAL, INCONTINENCE, SURGERY, GRACILIS MUSCLE, FASCIA PLASTIC (4968)
  - ARTIFICIAL, IMPLANTED, SEROSA THICKENING, INCONTINENCE (6496)
  - CHOLEDOCHAL, SURGERY, DUODENUM, GALLBLADDER (4544)
  - CHOLEDOCHODUODENAL ACTIVITY, DRUG EFFECT, TERBUTALINE, ISOPRENALINE, HEART RATE, INTESTINAL MOTILITY(5513)
  - ESOPHAGUS, SPASM, DILATION (5761)
  - GASTROESOPHAGEAL, ELECTRICAL ACTIVITY, INTRALUMINALOPRESSURE, DEGLUTITION (4756)*
  - GASTROESOPHAGEAL, FUNDOPLICATION, HIATAL HERNIA (8817)
  - ODDI, CHOLECYSTOGRAPHY, CODEINE (8047)
  - ODDI, FLOW RESISTANCE, VAGOTOMY, CHOLECYSTOKININ (6382)*
  - ODDI, HYDATID CYST, LIVER, BILIARY TRACT, CHOLANGIOGRAPHY (5401)
  - ODDI, MORPHINE, SPASM, HYPERTROPHY, COMMON BILE-DUCT (6927)
  - ODDI, PANCREATITIS, OBSTRUCTION (5969)
  - ODDI, SPASM, GALLBLADDER, CHOLANGIOGRAPHY (4036)
  - ODDI, SPHINCTEROTOMY (7659)
  - PRESSURE, ESOPHAGEAL MOTILITY, SPASM, ACHALASIA (6601)

- PRESSURE, GASTROESOPHAGEAL REFLUX (2545)•
- PRESSURE, STOMACH, DISTENTION, PANCREAS, DOG (5522)
- PYLORIC, INCOMPETENCE, VARIANT (8828)•
- SURGERY, RESECTION, GALLBLADDER (4153)

HINCTEROTOMY
- ANORECTAL SURGERY, ANAL FISTULA, CONTINENCE FUNCTION (8965)
- CHOLEDOCHODUODENOSTOMY, COMPARISON, PAPILLOSTENOSIS (0375)
- DUODENUM, DRAINAGE (1369)
- SPHINCTER OF ODDI, BILE DUCT (0665)
- TRANSDUODENAL, PAPILLOTOMY, BILIARY AND PANCREATIC DUCT SURGERY (1956)

INA BIFIDA
- CONSTIPATION, FECAL INCONTINENCE, TREATMENT, CHILDREN (2721)

IRONOLACTONE
- CIRRHOSIS TREATMENT, SERUM MAGNESIUM LEVELS, CHILDREN (2891)•
- LIVER, ULTRASTRUCTURE, HEPATOCYTES, METABOLIZING ENZYMES (3809)•

LANCHNICECTOMY
- CHRONIC PANCREATITIS, PANCREATIC FIBROSIS, ALCOHOLISM (6752)

LANCHNOMEGALY
- HORMONALLY-INDUCED DIABETES, PARTIAL PANCREATECTOMY, TRANSPLANTABLE PITUITARY TUMORS, RAT (1691)

LEEN
- ACCESSORY, PSEUDOTUMOR, GASTRIC FUNDUS (1068)
- ADENOSINE DEAMINASE, MOUSE (3818)•
- CELLS, LIVER INFILTRATION, GRAFT-HOST REACTION, DISTRIBUTION (3190)
- COPPER, CERULOPLASMIN, ACUTE CHOLECYSTITIS (2972)
- DIAGNOSIS, LIVER, RUPTURE (2088)
- ENLARGEMENT, PREHEPATIC BLOCK, ULTRASTRUCTURE, HYPOTHROMBINEMIA, ELECTRON MICROSCOPY, MITOCHONDRIA, CELL COMPONENTS (6054)•
- EXCISION, LIVER REGENERATION, DOG (7977)
- GASTRIC ULCER, HEMORRHAGE, HILUS LIENIS, SURGERY (2637)
- HEPATECTOMY, HEMATOPOIESIS, HUMORAL FACTORS, HEPATIC REGENERATION, PORTAL HYPERTENSION, RAT (4852)
- HYPERSPLENISM, CHEONIC HEPATITIS, CIRRHOSIS, THROMBOCYTOPENIA, PLATELETS, GAMMA GLOBULINS (5173)
- HYPERSPLENISM, CIRRHOSIS, HEMORRHAGE (2142)
- HYPERSPLENISM, PORTAL HYPERTENSION (7001)
- HYPERSPLENISM, SPLENECTOMY, ESOPHAGEAL VARICES (7303)
- HYPOSPLENISM, CELIAC DISEASE (1966)
- IMMUNOLOGY, EHRLICH'S CARCINOMA, ASCITES, MOUSE (2821)
- INDENTATION, STOMACH, FUNDUS, LESION SIMULATION (1878)
- LIVER, LYSOSOMES, ANTIGEN STORAGE (0148)
- METABOLISM, AMINO ACID, LIVER (4847)
- PORTAL, ANATOMY, PANCREAS, PERITONEUM (3090)
- PORTAL HYPERTENSION, PANCREATITIS, SPLENOPORTOGRAPHY (3539)
- RHEOGRAPHY, LIVER (4075)
- RUPTURE, NECROSIS, PANCREATITIS (0511)•
- SCANNING, 99M TC, 113M IN, LIVER, PEDIATRIC PATHOLOGY (5719)
- SPLENECTOMY, BLEEDING ESOPHAGEAL VARICES (3327)
- SPLENECTOMY, HEPATIC ARTERY, CIRRHOSIS (3654)
- SPLENOMEGALY, HEPATIC CIRRHOSIS, BLEEDING ESOPHAGEAL VARICES (3656)
- SUBCELLULAR FRACTION, HEMOLYSIS, RABBIT (0896)
- VASOPRESSIN, ANGIOTENSIN, RESISTANCE VESSELS, INTESTINE, LIVER (6509)

SPLENOPORTOGRAPHY
- HYDATIDOSIS, LIVER (4086)

SPRUE
- DIAGNOSIS, MALABSORPTION, SMALL INTESTINE (4254)
- IDIOPATHIC (0421)
- INTESTINE, ULTRASTRUCTURE, GLUTEN FREE DIET (8937)
- SYNDROMES, PATHOPHYSIOLOGY (4262)
- TROPICAL, ABSOLUTE ALBUMIN SYNTHESIS RATE, AMINO ACID INFLUENCE (2683)•
- TROPICAL, CHILDREN, PUERTO RICO (2687)•
- TROPICAL, SULFANOMIDES, TREATMENT (0412)•

SQUALENE
- LIVER, METABOLISM, POLIPROTEIN (3223)
- STOMACH, PROCELLARIIFORM BIRDS (1407)

STAINING AGENTS
- ALCIAN BLUE, BINDING, GASTRIC JUICE, ULCERS, CARCINOMA (8879)•
- FLUORESCENCE, LAVAGE, STOMACH, CYTODIAGNOSIS (7534)•
- PHOSPHOTUNGSTIC ACID, SILICOTUNGSTIC ACID, LIVER, MITOCHONDRIA, RESPIRATION, INTEGRITY (1579)•

STEATONECROSIS
- SYSTEMIC, PANCREAS (3521)

STEATORRHEA
- CHRONIC, INTESTINAL MALABSORPTION, CONGENITAL LYMPHEDEMA, INTESTINAL LYMPHANGECTASIA, CHILD (8936)
- CHRONIC PANCREATITIS, ENZYME SUBSTITUTION (0518)
- COMPLICATIONS, BONE DISORDERS (0410)•
- DIABETES MELLITUS (0468)
- DIAGNOSIS, FAT ABSORPTION, 14C-TRIGLYCERIDE, FECAL FAT EXCRETION (3443)•
- IDIOPATHIC, CARCINOMA, PANCREAS (6739)
- INTESTINAL MALABSORPTION, EDEMA, DIARRHEA (6688)
- LACTOSE MALABSORPTION, PEPTIC ULCER SURGERY (1113)•
- MALABSORPTION, SMALL INTESTINE PATHOOLOGY, LYMPHOMA, RETICULUM CELL, SARCOMA (1967)
- MALABSORPTION SYNDROME, IMMUNOGLOBULIN DEFICIENCY (0404)•
- NONALCOHOLIC LIVER, DISEASE, LIPID (6764)•
- PATHOGENESIS, BILE-SALTS, MICELLES (0409)•

  - PSYCHOSOMATIC DISEASE, MALABSORPTION (7438)*
  - SMALL INTESTINE, MALABSORPTION (4252)
  - VIRAL HEPATITIS, LIPID ABSORPTION, MICELLAR CONCENTRATION (4475)*
  - VITAMIN B12, BILE ACID, BACTERIAL FLORA, GASTROINTESTINAL DISORDERS (3343)*
- STEATOSIS
  - ACUTE, LIVER, PREGNANCY (2827)
  - CHOLESTEROL, PHOSPHOLIPIDS, LIPOGENESIS (8635)*
  - EXPERIMENTAL, CHOLINE OROTATE, LIVER, RAT (8682)
  - HEPATIC, DIET-INDUCED, RAT (0415)
  - LIVER, ALCOHOLISM, PATHOGENESIS (9095), (9111)
  - LIVER, ETIOLOGY, INCIDENCE (9068)
  - LIVER, XANTHOPHYLL ACCUMULATIONS KWASHIORKOR (2857)*
  - RABBIT, DIMETHYLBIGUANIDE, PLASMA LIPID (6800)
- STENOSIS
  - ASCENDING COLON, MEGACOLON, MEGAILEUM (3479)
  - ATYPICAL, RADIATION INJURY, METASTASES ILEUS (6577)
  - BILE DUCT, LITHIASIS, DOG (3666)
  - CAUSTIC, CICATRIX, ESOPHAGUS, CANCER (0246)
  - CELIAC ARTERY, LIGAMENT CONSTRICTION, AORTOGRAPHY, ANATOMOPATHOLOGY (9225)
  - CELIAC AXIS, DUODENOPANCREATECTOMY (9227)
  - CELIAC AXIS, VISCERAL ANGIOGRAPHY, SURGERY (8401)
  - CHOLECYSTECTOMY, CHOLECYSTITIS, ANASTOMOSIS (2920)
  - CHRONIC, CELIAC AXIS, AORTOGRAPHY, SURGERY (8453)
  - CICATRICIAL, BILE DUCT, SURGERY, COMPLICATIONS (8409)
  - CICATRICAL, ESOPHAGO-ILEOCOLONPLASTY (3747)
  - COLON, DIFFERENTIAL DIAGNOSIS (4293)
  - COMMON LIVER ARTERY, MUSCULAR HYPERPLASIA (9223)
  - CONGENITAL, SMALL INTESTINE (1954)
  - CORROSIVE, STOMACH, MURIATIC ACID (2625)
  - DIAGNOSIS, THERAPY (8830)*
  - DUODENAL, DUODENOJEJUNAL REGIONAL ENTERITIS, CROHN'S DISEASE, GASTRECTASIA (8922)
  - DUODENAL, HYPOPLASTIC, CONGENITAL, PYLORIC ULCERATION (0294)
  - ESOPHAGEAL, ACQUIRED, INFANT, CHILD (4094)
  - ESOPHAGEAL, GASTRIC INTUBATION, SURGERY (1011)
  - ESOPHAGEAL, HYPERMOTILE, SPASM RADIOLOGY, ACHALASIA (2554)
  - ESOPHAGEAL, PEPTIC ESOPHAGITIS, COLONIC GRAFT, JEJUNAL GRAFT (8066)
  - ESOPHAGEAL, SURGERY, RADIOLOGY, INFANT (9119)
  - ESOPHAGEAL RING, RADIOGRAPHY, PATHOLOGY, DYSPHAGIA (6606)
  - ESOPHAGUS, BOUGIENAGE, RADIOLOGY (882
  - ESOPHAGUS, STARVATION MANAGEMENT, CATHETERIZATION (8063)
  - EXTRINSIC, CELIAC AXIS, SURGERY, MOTILITY (8452)
  - GASTRIC ULCER, CHILD, GASTRECTOMY, GASTRODUODENOSTOMY (2595)
  - JEJUNUM, RECURRENT, MAN (0381)
  - LIVER ARTERY, ARTERIOGRAPHY, SURGERY (8473)
  - NON-ATHEROMATOUS, CELIAC ARTERY, SURGERY, PHYSIOPATHOLOGY (8427)
  - PEPTIC, ESOPHAGUS, ETIOLOGY, PATHOGENESIS (8805)
  - PEPTIC ESOPHAGITIS, ULCER, OPERATION, CANCER, SECRETION, DIAGNOSIS (2555)
  - PRIMARY, INTRAHEPATIC, BILE DUCTS, CHOLANGIOGRAPHY, ETIOLOGY (9176)
  - PYLORIC, CONGENITAL, INHERITANCE PATTERN (1893)
  - PYLORIC, HYPERTROPHIC (4146)
  - PYLORIC, INCIDENCE, RACIAL GROUPS, HAWAII (1871)
  - PYLORUS, ACID EROSIONS OF ESOPHAGUS, ETIOLOGY (8820)
  - PYLORUS, HYPERTROPHY, INFANTS (8106)
  - PYLORUS, PARTIAL GASTRECTOMY, EOSINOPHILIC INFILTRATION (8841)
  - PYLORUS, PRESURGICAL MANAGEMENT, METABOLIC CARE, ELECTROLYTE SUPPLY (8849)
  - PYLORUS, SURGERY, VAGUS (3353)
  - REFLUX ESOPHAGITIS, DIAGNOSIS, ACID PERFUSION TEST (2516)
  - SPHINCTER OF ODDI (2935)
  - ULCER, ENTEROPATHY, CROHN'S DISEASE (2664)
  - ULCER, PANCREAS, ANOMALY, SURGERY, DIAGNOSIS (2782)
- STEREOCHEMISTRY
  - PYRIDINE, LIVER (1769)
- STEROID
  - ADRENALECTOMY, LIVER DRUG METABOLISM ENZYME ACTIVITY (1773)
  - ALDOSTERONE, MUCOSAL POTENTIAL, RECTUM, COLON (7064)*
  - ANABOLIC, STANOZOLOLE THERAPY, VIRAL HEPATITIS, CHILDREN (9127)
  - ATPASE, LIVER, RAT (6359)
  - BILE, GLUCURONIDE, FISTULA, GALLBLADDER (5682)
  - BILE ACID, INTESTINAL BACTERIA, ENZYMES (3945)*
  - BILE SALT, INTESTINAL BACTERIA (3944)
  - BREAST MILK, NEONATAL JAUNDICE, NEONATE (5997)
  - CHOLESTEROL, LIVER, D-FRUCTOSE-6-PHOSPHATE AMINOTRANSFERASE (7181)
  - CONJUGATED, FREE, MICROBIAL HYDROLYSIS, CECUM, RAT (3227)*
  - CORTICO-, DECAPITATED FETUSES, ADRENALECTOMIZED MOTHERS, CORTISOL, HEPATOCYTES, GLYCOGEN (5461)
  - CORTICO-, LIVER DISEASE, VIRAL HEPATITIS, CIRRHOSIS, VITAMIN B12 INCORPORATION (5279)
  - CORTICO-, PRESTOMAL ILEITIS, SMALL INTESTINE (5882)

ORTICOSTEROID CLEARANCE, GASTROINTESTINAL TRACT (6365)
RTICOSTERONE, METABOLISM, BILIARY METABOLITES, SEX DIFFERENTIATION, RATS (4854)*
RTICOSTERONE, PREGNENOLONE, EXCRETION (7057)*
RTICOSTERONE BINDING, LIVER (6298)*
RTISONE, LIVER, ENA, RAT (4842)*
RTISONE, LIVER, MITOCHONDRIA (5431)*
RTISONE, NEUTRAL, ACID, B-GALACTOSIDASE, SMALL INTESTINE (4864)*
RTISONE, SYNTHESIS, RNA, LIVER, RAT (4824)*
RTISONE THERAPY, PANCREATITIS, LIPASE, FAT, RAT (5961)*
STRADIOL, PROGESTERONE, TESTOSTERONE, JEJUNUM, GLYCOLYTIC ENZYMES (5427)*
STRADIOL METABOLISM, BILIARY OBSTRUCTION, METABOLISM (6130)
CRETION, LIVER, PERFUSION, RAT (4762)*
CRETION, SULFOBROMOPHTHALEIN, LIVER, PERFUSION, RAT (4833)*
CES, HUMAN, METABOLISM (4875)
TAL LIVER, FETAL ADRENAL (5448)
3-KETO-REDUCTION, HYPERTENSIVE LIVER (6430)*
STRIC SECRETION, ULCER (7099)
STROINTESTINAL TRACT, CANDIDA ALBICANS, ANTIBIOTICS, CYTOSTATICS (6982)
UCOCORTICOID, FUNCTION, ADRENAL CORTEX, PEPTIC ULCER (5850)
UCOCORTICOID, GLUCOSE, LIVER GLYCOGEN PHOSPHORYLASE (7142)*
UCOCORTICOID, GLYCOGEN SYNTHETASE, LIVER (7146)*
UCOCORTICOID, STOMACH, COLON, SMALL INTESTINE (7705)
UCOCORTICOID, SURFACE MEMBRANE, HEPATOMA CELL (8264)*
UCOCORTICOID, THERAPHY, ACUTE HEPATITIS, PROTEIN SYNTHESIS, BILIRUBIN, TRANSAMINASE, PREDNISOLONE (5255)
RMONE, EXCRETION, FECES, PREGNANT WOMAN (2335)*
RMONE, PEPTIC ULCER, PROTEIN METABOLISM (5849)
DROCORTISONE, TESTOSTERONE, PLASMA DISAPPEARANCE, NORTRIPTYLINE, PERFUSED RAT LIVER, DOG (2457)
DROCORTISONE ACETATE, ESTRADIOL, LIVER, GLUCOKINASE (5578)*
HIBITION, GLUCURONIZATION (7433)
UNDICE, NEONATE, BILIRUBIN (4424)
VER, RAT (5412)*
VER BIOCHEMISTRY, MICROSOMES, ANESTHESIA, DRUG EFFECTS (1727)
VER METABOLISM, CYTOCHROME P-450, MICROSOME (5566)*
NESTROL, LIVER, METABOLISM (6460)
CONIUM, UMBILICAL CORD, FECES (2487)
WBORNS, MECONIUM, SMALL INTESTINE (0723)*
N-VIRAL HEPATITIS, COMA, EXCHANGE TRANSFUSION (6063)
AL CONTRACEPTIVE, MESENTERIC VENOUS THROMBOSIS (6235)
PROGESTERONE, PREGNANCY, APPENDICITIS, ABORTION, SURGERY, LABOR (5092)
PROGESTERONE METABOLISM, LIVER, RABBIT (6488)
PROGESTERONE METABOLISM, REGENERATING LIVER (6453)*
SEX, SMALL INTESTINE, MOTILITY (7039)
SULPHATE, CONCENTRATION, SERUM, INFECTIOUS HEPATITIS (5254)*
SULPHATE, REDUCTION, ETHANOL, PLASMA, MAN (3240)*
TESTOSTERONE METABOLISM, HUMAN FETAL LIVER (7132)*
THERAPY, CAUSTIC BURNS, ESOPHAGUS (1826)*
THERAPY, PRIMARY SCLEROSING CHOLANGITIS (7568)
3-OXO-DELTA 4-C19, LIVER, RAT, 6X-HYDROXYLASE (2414)*
ULCER, GASTRECTOMY, HEMORRHAGE (6666)
ULCER, SULPIRIDE, NEUROSURGICAL RESUSCITATION (7349)

STIMULATION
    ELECTRICAL, DUODENUM, CHRONIC PANCREATITIS (7520)
    INTEROCEPTOR, MYOTATIC REFLEX, GASTROINTESTINAL TRACT (7080)
    SYMPATHETICS, RELAXATION, ILEUM (3899)

STOMACH
    ABSORPTION, EMPTYING, ETHANOL, ACID OUTPUT (5494)*
    ABSORPTION, GASTRECTOMY, FAT (3367)
    ABSORPTION, ISONIAZID, SMALL INTESTINE (6366)
    ABSORPTION, MOTILITY, PH, ACETYLSALICYLATE, BUFFERED, UNBUFFERED (3104)*
    ABSORPTION, POUCH, SURFACTANT (7843)
    ACANTHOMA, NUCLEIC ACIDS, HISTOMORPHOLOGY (0019)
    ACETYLSALICYLIC ACID, GASTRIC LESION, GASTRIC ABSORPTION, AUTORADIOGRAPHY, SODIUM ACETATE, SODIUM BENZOATE (3102)*
    ACID, DUMPING SYNDROME, GASTROJEJUNAL ANASTOMOSIS (1045)
    ACID, ESOPHAGEAL TUBE (2560)
    ACID, HEATING, FREEZING, ACHLORHYDRIA, HISTAMINE, DOG (5828)*
    ACID, SECRETION, CHOLECYSTOKININ (2374)*
    ACID, SECRETION, HISTALOG (7324)*
    ACID, VAGOTOMY, DIARRHEA (5375)
    ACID INHIBITOR, CEREBRAL RELEASE, LIMBIC SYSTEM (6408)
    ACID OUTPUT, DISTENTION, STIMULUS, HISTAMINE, PENTAGASTRIN (5533)*
    ACID SECRETION, ANTICHOLINERGICS, HISTALOG (6612)*
    ACID SECRETION, CHRONIC FISTULA, FERRET (0069)*
    ACID SECRETION, DUODENAL ULCER (5033)
    ACID SECRETION, DUODENAL ULCER, ANTICHOLINERGICS (1112)*
    ACID SECRETION, DUODENAL ULCER, CALCIUM CARBONATE (5768)
    ACID SECRETION, ETHANOL, HISTAMINE, GASTRIN, RAT (3133)*
    ACID SECRETION, GASTRIC STIMULATION, DRUGS (6396)*

ACID SECRETION, GLUCOSE (3136)•
ACID SECRETION, HEXAMETHONIUM, HISTAMINE, PENTAGASTRIN (5535)•
ACID SECRETION, MAXIMUM (6524)
ACID SECRETION, PENTAGASTRIN, HISTAMINE, MAXIMUM RESPONSE, SIDE EFFECT (1670)
ACID SECRETION, PEPSIN, HYPOTHALAMUS STIMULATION (0666)
ACID SECRETION, RADIOTELEMETRY (7262)
ACIDITY, AGE, HISTAMINE, MICE (6407)
ACIDITY, GASTRIN, ESOPHAGEAL SPHINCTER (3890)•
ACIDITY, PH, ION CONCENTRATION, BUFFERS (3908)•
ACIDITY, RADIOMETRIC ANALYSIS, INTRAGASTRIC PH (0975)
ACIDITY, RADIOTELEMETRY (7261)
ACIDITY DETERMINATIONS (4215)
ACUTE ULCER, DUODENUM, COMPLICATIONS (5804)
ACUTE ULCER, EROSION, DUODENUM (5806)
ACUTE ULCER, EROSIONS, SPINAL CORD DISEASE (7332)
ACUTE ULCER, HEMORRHAGE, INTESTINE (6193)
ADENOCARCINOMA, ATAXIA-TELANGIECTASIA (1093)
ADENOCARCINOMA, CANCER (6610)•
ADENOCARCINOMA, METASTASIS, MUCOSA, MOUTH (1099)
ADENOMA (3348)
ALLERGIC GRANULOMATOSIS (3347)
AMYLOLYTIC ACTIVITY, STARCH HYDROLYSIS (5544)
ANAPLASTIC CARCINOMA, INTESTINE, PANCREAS (6970)
ANASTOMOSIS, CERVICAL ESOPHAGUS, RECONSTRUCTION (7304)
ANGIOENDOTHELIOMA, SMALL INTESTINE, OBSTRUCTIVE ILEUS (5795)
ANTHRAX, MASSIVE ASCITES (7361)
ANTRAL DISTENTION, GASTRIN RELEASE, VAGOTOMY (5540)
ANTRAL MUCOSA, GASTRIN, MOTILITY, ACIDITY, PENTAGASTRIN, HISTAMINE (4808)
ANTRECTOMY, FUNDIC MUCOAS (8089)•
ANTRUM, ACUTE SYMMETRIC ULCERATION, HEMORRHAGIC EROSION, ANTRAL SPASM (1874)
ANTRUM, ASPIRATION BIOPSY, CHRONIC GASTRITIS (7243)
ANTRUM, LONGITUDINAL MUSCLE, CIRCULAR MUSCLE, MEMBRANE POTENTIAL (2356)•
ANTRUM, MOTILITY, PRIFINIUM BROMIDE (8575)
ANTRUM, NICOTINE ACTION, CONTRACTILITY, DOG (4793)•
ANTRUM, PHENYLBUTAZONE, GASTRIC ACTIVITY (1621)
ANTRUM, PYLORUS, RADIOLOGY (8827)•
ANTRUM, TUMOR, ULCER, PATHOLOGY (8096)
ATROPHIC BORDER, PYLORIC GLAND, FUNDIC GLAND, ENDOSCOPY (0302)
ATROPHIC GASTRITIS, ACHYLIA GASTRICA, ANEMIA, RADIOLOGIC EXAMINATION (4132)•
ATROPINE, METACINE (0979)
AUTOANTIBODIES, INTRINSIC FACTOR, PERNICIOUS ANEMIA (3338)•
AUTONOMIC INNERVATION, TOAD (0805)
BACTERIAL HISTIDINE DECARBOXYLASE (7992)•
BARIUM EXAMINATION, CONCENTRATION EFFECT, MUCOSAL EXAMINATION (0974)
BENIGN, LIOMYOMA, MESENCHYMAL TUMOR, INTESTINE, LAPAROTOMY (5015)
BENIGN TUMOR, MYOID, HEMORRHAGE, GASTROSCOPY, PYLORIC OBSTRUCTION, POLYP (5017)
BILE, IMPLICATION (1879)
BILLROTH RESECTION, CARCINOMA, BENIGN TUMORS, ULCERS, FIBROMYOMA (4980)
BIOPSY, DIAGNOSIS, RADIOLOGY (2523)
BIOPSY, FIBERGASTROSCOPE (6553)
BLOOD FLOW, ACID SECRETION, MESENTERIC OCCLUSION (6611)•
BLOOD FLOW, DISTENSION (7203)
BLOOD FLOW, NEUROHORMONAL CONTROL (4003)
BURNS, TREATMENT (7335)
BUTTRESS, ACUTE PERFORATION, ESOPHAGUS DOG (6585)
CANCER (1896), (1897)
CANCER, ADENOCARCINOMA, MUCOSA (3837)
CANCER, AMINO ACID, SURGERY (2606)
CANCER, AMINO ACID, ULCER (2611)
CANCER, ANALYSIS (4143)
CANCER, ANEMIA, HEMOPATHIC, OSTEOMEDULLARY BIOPSY, YOUNG ADULT (5016)
CANCER, BLOOD, PROTEIN (2589)
CANCER, CALCIFIED, DIAGNOSIS, MAN (0333)
CANCER, CARCINOMA, BENIGN ULCER, DIRECT VISION BIOPSY (8037)
CANCER, CELIACOGRAPHY (5710)
CANCER, CELL PROLIFERATION, AUTORADIOGRAPH (5788)
CANCER, CHEMOTHERAPY (7379)
CANCER, CHYLOUS ASCITES (7750)
CANCER, CYTODIAGNOSIS (4890)•
CANCER, CYTOLOGY, EXFOLIATIVE, MUCOSA (0206)
CANCER, DEVELOPMENT (7342)
CANCER, DIABETES MELLITUS (7383)
CANCER, DIAGNOSIS (0230)
CANCER, DIAGNOSIS, GASTROSCOPE, GASTRO-CAMERA (5720)
CANCER, DIAGNOSIS, MICROGASTROFIBERSCOPE (4049)
CANCER, DIAGNOSIS, NEOPLASM (1037)
CANCER, DIAGNOSIS, ROENTGENOTELEVISION (0953)
CANCER, DIAGNOSIS, SURGERY (4929)
CANCER, DIET, NITROGEN POTASSIUM BALANCE (1055)
CANCER, EARLY, PROGNOSIS (4144)
CANCER, EARLY AND ADVANCED, JAPAN (4173)
CANCER, EARLY SURGERY, GASTRECTOMY (5816)
CANCER, ENDOSCOPY (7277)
CANCER, ENZYME, INHIBITION, ACTIVATION (1868)
CANCER, ETIOLOGY, ANATOMOPATHOLOGY, HISTOLOGY (8874)

CANCER, 5-FLUOROURACIL, PERIPHERAL BLOOD MORPHOLOGY (8125)
CANCER, FLUORESCENCE, LAVAGE, CYTODIAGNOSIS (7534)•
CANCER, FLUOROURACIL, RADIOTHERAPY (1089)
CANCER, GASTRECTOMY, INDICATION (4139)
CANCER, GASTRIC MUCOSA (1057)
CANCER, HIATAL HERNIA, DIAPHRAGM (0997)
CANCER, HISTOGENESIS, DEVELOPMENT (1880)
CANCER, IMMUNOLOGY (4991)
CANCER, INCIDENCE, MORTALITY, MULTIHIT THEORY (4265)•
CANCER, INCIDENCE, SURGERY, MORTALITY RATE (8110)
CANCER, LIVER, NEEDLE BIOPSY, METASTASIS, SCANOGRAPHY (2524)
CANCER, LIVER MORPHOLOGY (7340)
CANCER, LYMPH NODE, GASTRECTOMY (4979)•
CANCER, MESENCHYMAL, LYMPHORETICULOSARCOMA, POLYPOID (6655)
CANCER, METASTASES (1861)
CANCER, MITOCHONDRIA, DNA (3549)•
CANCER, MORPHOLOGY (1061)
CANCER, MORTALITY (7380)
CANCER, PARTIAL RESECTION (7381)
CANCER, PATHOLOGY, PROTHESES, CANCER SURVIVAL RATES (1038)
CANCER, PEPTIC ULCER, DIAGNOSIS, SURGERY (5709)
CANCER, POSTOPERATIVE SURVIVAL (4175)
CANCER, RADIOLOGY, DIAGNOSIS (5009)
CANCER, RESECTION (5822), (7382)
CANCER, SODIUM BALANCE (0283)
CANCER, SUPERFICIAL, DIAGNOSIS (1090)
CANCER, SURGERY (5823)
CANCER, SURGERY, PATHOLOGY (1034)
CANCER, THIAMINE METABOLISM (5812)
CANCER, ULCER, EMBOLISM, HEMORRHAGE (3413)
CANCER, ULCER, ENDOSCOPY, CYTOLOGY, BIOPSY (6534)
CANCER, ULCER, MORTALITY, COMPARISON, JAPAN (1096)
CANCER, ULCER, POLYP, INTESTINE (5367)
CANCER, ULCER, RADIOSCOPE, BARIUM MEAL (4947)
CANCER, X-RAY DIAGNOSIS (7267)
CANCER CELLS, BLOOD GROUPS, ANTIGEN (5775)
CANCER CELLS, CYTOLOGY, HISTOLOGY (3365)
CARCINOGENESIS (7330)•
CARCINOGENESIS, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE (7328)•
CARCINOIDS, SECRETORY GRANULES (1032)
CARCINOMA, ACID PRODUCTION (5769)
CARCINOMA, BENIGN POLYP (6622)
CARCINOMA, CAMERA DIAGNOSIS (0309)
CARCINOMA, CYSTIC DISEASE, DIFFUSE (8834)
CARCINOMA, CYTOLOGY, GASTROSCOPY (6546)
CARCINOMA, DEATH (7377)
CARCINOMA, DIAGNOSIS, ENDOSCOPY (0293)
CARCINOMA, DIAGNOSIS, RADIOLOGY (0268)•
CARCINOMA, EARLY DIAGNOSIS, GASTROINTESTINAL ORGANS (0204)
CARCINOMA, ENZYMES, PROGNOSIS (8087)•
CARCINOMA, ESOPHAGUS, MOTILITY, SPASM (5790)
CARCINOMA, ESOPHAGUS, SURGERY (4117)
CARCINOMA, GASTRIC JUICE, LACTIC ACID (6613)•
CARCINOMA, GASTRIC STUMP, GASTROJEJUNOSTOMY, DUODENAL ULCER (0288)
CARCINOMA, GASTRITIS (4163)
CARCINOMA, HISTOLOGY (7344)
CARCINOMA, HISTOPATHOLOGY, SECRETION (8086)•
CARCINOMA, HYDROCARBONS, POLLUTANTS, AIR, FEEDING, PETROCHEMICAL AREA, MICE (3340)•
CARCINOMA, HYPOGLYCEMIA, SPONTANEOUS (0502)
CARCINOMA, METAPLASIA, INTESTINAL, COLUMBIA, MIGRANTS (3344)
CARCINOMA, POST-SRUGERY FOLLOW-UP (2616)
CARCINOMA, PROPHYLACTIC EXAMINATION, GERMANY (8861)
CARCINOMA, RADIATION THERAPY (0308), (6625)
CARCINOMA, SECRETION, ANTIBODY, ACID, ANEMIA (3363)
CARCINOMA, SQUAMOUS-CELL, LIVER METASTASIS (0285)
CARCINOMA, SQUAMOUS-CELL, PATHOGENESIS (0280)
CARCINOMA, SURGERY (4988), (4992), (6629)
CARCINOMA, SURGERY, GASTRECTOMY (5008)
CARCINOMA, THROMBOCYTOPENIA PURPURA, GERIATRIC (1077)
CARCINOMA, TOTAL GASTRECTOMY (4600)
CARCINOMA, TREATMENT DYSPHAGIA, MOUSSEAU-BARBIN TUBE (0982)
CARDIA, CANCER, ESOPHAGUS, RESECTION, RADIOTHERAPY (5756)
CARDIA, ESOPHAGUS, SURGERY, CANCER (4928)
CARDIA, HYPERTROPHY FAT (0312)
CARDIA, PNEUMATIC DILATATION, MEGAESOPHAGUS (3319)
CARDIA COMPETENCE, ABDOMINAL VAGOTOMY, DUODENAL ULCER (6642)
CARDIAC, FISTULA, ESOPHAGUS (3333)
CARDIAC INFARCT, ESOPHAGUS, ANEURYSM, EMOTIONAL FACTORS, ARTERIOSCLEROSIS (4967)
CARDIAC SPHINCTER, PH CHANGE, DIGESTION (1613)
CARDIAC ULCER (4124)
CARDIAC UPPER ABDOMEN SYNDROME, LIVER, PANCREAS, BILIARY TRACT (6198)
CELL PROLIFERATION, THYMIDINE (3812)•
CHRONIC DISEASE, ELECTROTHERAPY, PANCREAS (6161)
CHRONIC DISEASE, MINERAL WATER (5810)
CHRONIC GASTRITIS, DIAGNOSIS, TREATMENT (1884)
CHRONIC GASTRITIS, GASTRIC ANTIBODIES (2620)

CHRONIC GASTRITIS, GASTRIC SECRETION (2621)
CHRONIC GASTRITIS, GASTROCAMERA, ENDOSCOPY (5815)
CHRONIC GASTRITIS, HISTOLOGIC CLASSIFICATION (2622)
CHRONIC GASTRITIS, MUCOSA, BIOPSY (6628)
CHRONIC GASTRITIS, RESORT TREATMENT, SOUTHERN CRIMEA (8092)
CHRONIC GASTRITIS, THERAPEUTIC WATER, SECRETION, ACIDITY (2590)
CHRONIC ULCER, DUODENAL, SELECTIVE SURGERY (8881)
CICATRISING LESIONS, CORROSIVE INGESTION, SURGERY (7357)
CINEGASTROSCOPY (6560)
CIRCULATION, MESENTERY, ANOMALY (2961)
CIRCULATION, SURGERY, VAGOTOMY (0164)•
COLLAGENOLYTIC ACTIVITY, ULCER, CANCER (7346)
COLON REFLEX, ELECTRIC ACTIVITY (3895)
COMPLICATION, PYLORIC STENOSIS, ULCER, CARCINOMA, GASTRITIS (6618)
CONDITION, CARDIOVASCULAR DISEASES (3384)
CONGENITAL PYLORIC STENOSIS, INHERITANCE PATTERN (1893)
CONSTRICTED, ULCER, FORMATION (0316)
CONTRACTION, NICOTINE, DUODENUM (4801)
CORROSIVE INJURIES (3400)
CORROSIVE STENOSIS, MURIATIC ACID (2625)
CORTICOSTEROIDS, MUCOSA, MUCUS (3342)•
CORTICOSTEROIDS, ULCEROGENIC EFFECT RAT (0273)•
CROHN,S DISEASE, COLON, CASE REVIEW (3375)
CYTOLOGIC DIAGNOSIS (5714)
CYTOLOGY, DIAGNOSIS, CHYMOTRYPSIN LAVAGE (0183)•
DIABETES MELLITUS, GASTRIC ATONY, DIARRHEA, BLIND LOOP SYNDROME (2942)•
DIAGNOSIS, ENDOSCOPY (0215)
DIAGNOSIS, ESOPHAGOSCOPY (0954)
DIAGNOSIS, GASTROSCOPY (0227), (0954)
DIAGNOSIS, MUCOSA (1859)•
DIAGNOSIS, RADIOLOGY, CANCER, ULCERS LEIOMYOMA (1800)•
DIAGNOSIS, RADIOLOGY, GASTROSCOPY (1802)•
DIAGNOSTIC PROCEDURE, FIBROSCOPY, GASTROSCOPY, RADIOLOGIC EXAMINATION GASTRIC DISEASE (2540)
DIAGNOSTIC PROCEDURE, GASTRIC ACID, HEIDELBERG PH CAPSULE, ACIDITY TITRATION (5656)•
DILATATION, CARDIAC ACHALASIA, MEGAESOPHAGUS, HYPERTONIC PYLORUS, CACHEXIA, PYLOROPLASTY, SURGERY, CARDIOMYOTOMY (4963)
DILATATION, DIAGNOSIS, PREVENTIVE MEASURES (8046)
DISEASE, CIRCULATION (3369)
DISEASE, CYTOLOGY, DIAGNOSIS (7284)
DISEASE, IMMUNOGLOBULIN, ELECTROPHORESIS (4148)
DISORDER, CANCER, LIP (1885)
DISORDER, MORPHOLOGY, RHEUMATISM (0272)•
DISTENTION, PANCREATIC SPHINCTER PRESSURE, DOG (5522)
DISTENSION, STENOSIS, PORTAL HYPERTENSION (6510)
DIVERTICULA, SMALL INTESTINE, LOCALIZATION, MUCOSA, HEMORRHAGE, MALIGNANCY (5784)
DOGMATIL, HYPOTHALAMIC CENTER, PSYCHOTROPIC DRUG (5335)
DRAINAGE, ALKALOSIS, POST-HISTAMINIC (0321)
DUMPING SYNDROME, RESECTION (7378)
DUODENAL ULCER, RADIATION THERAPY, GASTRIC SECRETORY RESPONSE, HISTAMINE STIMULATION (4185)•
DUODENAL ULCER, SECRETION, ATROPINE (2635)
DUODENOSTOMY, ANTRECTOMY, VAGOTOMY (4174)
DUODENUM, ALKALINE REFLUX, GASTRITIS, DYSPEPSIA (4164)
DUODENUM, ANTICHOLINERGIC (1661)
DUODENUM, BENIGN TUMOR, DIAGNOSIS, SURGERY (2609)
DUODENUM, BENIGN TUMORS, HISTOLOGY (8867)
DUODENUM, HEMORRHAGE, VAGOTOMY (1030)
DUODENUM, PEPTIC ULCER, BARIUM SULFATE (7253)
DUODENUM, PEPTIC ULCER, SULPIRIDE THERAPY (4204)
DUODENUM, PEPTIC ULCER, SURGICAL TREATMENT (1904)
DUODENUM, PEPTIC ULCER PERFORATION, ISLAND COMMUNITY (8139)
DUODENUM, SECRETION, ACID, SECRETIN (7195)•
DUODENUM, STRESS ULCER, TREATMENT (1911)
DUODENUM, ULCER, ANTICHOLINERGIC (1828)
DUODENUM, ULCER, GASTRIC STASIS, SURGERY (8136)
DUODENUM, ULCERS, MULTIPLE (0289)
DUPLICATION (7355)
DYSKINESIA, PYLORIC STENOSIS, X-RAY, DIAGNOSIS (5705)
EARLY CANCER, GASTRO-FIBERSCOPE, BIOPSY (6545)
EARLY CARCINOMA, GASTROCAMERA (5819)
ELECTROGASTROGRAM, ULCERATION, STRESS, RAT (3294)
EMBOLIZATION, MILK PRODUCTS, GASTRIC ULCER, TRAUMATIC RUPTURE, AGRANULOCYTOSIS (5833)
EMPTYING, FOODSTUFFS (6384)
EMPTYING, MECHANISM, GASTRECTOMY (4138)
EMPTYING, POST PYLOROPLASTY AND VAGOTOMY (3370)
EMPTYING, VAGOTOMY (7082)
EMPTYING-TIME, GLUCOSE, WATER (0045)•
ENDOCRINE CELLS, SEROTONIN (3860)
ENDOSCOPY, BIOPSY (1823)
ENDOSCOPY, DIAGNOSTIC VALUE (3304)

ENDOSCOPY, POLYPOID LESIONS (6569)
ENZYMES, HISTAMINE, FORMATION, MECHANISMS (0798)*
ENZYMES, MUCOSA, HISTOCHEMISTRY (0071)*
ENZYMES, RADIOISOTOPE, TRACER STUDY (0009)*
EOSINOPHILIC GASTRITIS, POLYP (4996)
EPITHELIAL CELL, HISTAMINE-CONTAINING, INTRINSIC FACTOR, STORAGE SITE (2376)
EPITHELIAL CELL, SURGERY, GASTRITIS (4157)
EPITHELIUM, MUCUS, METAPLASIA, INFANT (8069)
EROSION, ALKALI INGESTION (5793)
EROSION, GASTRITIS, GASTROSCOPY (6641)
EROSION, HEMORRHAGE, ESOPHAGUS (6435)
EROSIVE GASTRITIS, HERPES SIMPLEX HEPATITIS (0612)
ESOPHAGEAL JUNCTION, CARCINOMA, ESOPHAGOGASTROSTOMY (7360)
ESOPHAGEAL REFLUX, ESOPHAGITIS (4116)
ESOPHAGOGASTRIC RECONSTRUCTION, DYSPHAGIA, ANASTOMOSIS (6589)
ESOPHAGUS, BRUSHING CYTOLOGY, CANCER DIAGNOSIS (5654)*
ESOPHAGUS, HEMORRHAGE, ENDOSCOPY, RADIOLOGY (2514)
ESOPHAGUS, INTUBATION, BOWEL OBSTRUCTION (1804)*
ESOPHAGUS, MUCOSA, POTENTIAL DIFFERENCE (3889)*
ESOPHAGUS, REFLUX, PREVENTION, RESECTION, ESOPHAGUS (5733)*
ESOPHAGUS, REFLUX, SPHINCTER PRESSURE (2545)*
EVACUATION, ADRENALECTOMY, GLUCOCORTICOID (1047)
EVACUATION DISTURBANCES, RADIOLOGY, BRAIN TUMOR, POSTOPERATIVE (2965)
EXFOLIATIVE CYTOLOGY, COMPRESSED AIR APPARATUS, DIAGNOSTIC (8006)*
EXPERIMENTAL ULCERS, ANTICHOLINERGIC AGENTS (1019)*
EXTERNAL ANTRUM STIMULATION, HISTAMINE, INSULIN, SECRETION, DOG (0789)*
EXTRAGASTRIC VAGOTOMY, SECRETION (7860)*
EXUDATIVE GASTROPATHY, MALIGNANT VILLOUS TUMOR, HYPOPROTEINEMIA, GASTRECTOMY (1887)
FIBROSCOPE, DIAGNOSIS (0319)
FIBROSIS, CARCINOMA, HISTOPATHOLOGY (9002)*
FISH, NOTOPTERUS CHITALA H.B., PARASITE, PSEUDOPROLEPTUS LAMYI N.SP., CEPHALIC STRUCTURE, NEMATODE (6251)
FISTULA, BIOPSY METHODS (0960)
FISTULA, HISTAMINE, PENTAGASTRIN (6406)
FISTULA, SECRETION, NICOTINE (4998)
5-HYDROXYTRYPTAMINE, ADRENAL HORMONE, BORDETELLA PERTUSSIS VACCINE (7200)
FOREIGN BODIES, SWALLOWED (4645)
FREEZING, DUODENAL ULCER, FAILURE (2720)
FREUND·S ADJUVANT, ARTHRITIS, SMALL INTESTINE, THYMUS (4578)
FUNCTION, INTUBATION, INDICATION (4076)
FUNCTION, PHYSICAL EXERCISE (1031)
FUNCTION, SECRETION, CHLORORGANIC POISONS (0328)
FUNCTION SECRETORY, ESOPHAGEAL CHEMICAL (0253)
FUNCTIONAL DISORDERS, LC 9066, PANCREATIN, CONSTIPATION, DYSKINESIA, HEPATITIS, COLITIS (6168)
FUNDUS, DEFORMITY, ECTOPIC SPLEEN, LESION SIMULATION (1898)
FUNDUS, PSEUDOTUMOR, ACCESSORY SPLEEN (1068)
FUNDUS, RESECTION, CNS DEGENERATION, VITAMIN B6 (3916)
FUNDUS GRAFT, SPONTANEOUS ESOPHAGEAL RUPTURE, THALIS OPERATION (8084)
GALLBLADDER, COMBINED ROENTGENOLOGY, PANCREAS (8719)
GASTRECTOMY, CHRONIC PEPTIC, ULCER (1140)
GASTRECTOMY, GASTRO-DUODENAL ANASTOMOSIS (7341)
GASTRECTOMY, GLYCOREGULATION (8101)
GASTRECTOMY, LEUCOCYTES, EXERCISE, TUBERCULOSIS (1873)
GASTRECTOMY, MALABSORPTION SYNDROME (2623)
GASTRECTOMY, METABOLISM, IRON ABSORPTION (8100)
GASTRECTOMY, NEOPLASM, ULCER, NECROSIS, ZOLLINGER-ELLISON SYNDROME (2613)
GASTRECTOMY, PLASTIC RESECTION (5809)
GASTRECTOMY, PYLOROPLASTY, DUODENAL ULCER, PANCREAS (4993)
GASTRECTOMY, TRANSPORT (6637)
GASTRECTOMY, VAGUS PRESERVATION (7366)
GASTRIC ACID, TUBELESS DETERMINATION, PREGNANCY ANEMIA, IRON MALABSORPTION (8708)*
GASTRIC ACID EXCRETION, CHILDREN, CALCIUM, ELECTROLYTE BALANCE, POTASSIUM, PHOSPHATE (2386)
GASTRIC ACID RESPONSE, HISTAMINE TEST, INSULIN TEST (3907)*
GASTRIC ACID SECRETION, DRUG EFFECT (0063)*
GASTRIC ACID SECRETION, HISTAMINE (0787)*
GASTRIC ACID SECRETION, INHIBITION, ANTIGASTRIN, STIMULATION, PENTAGASTRIN, RAT (4807)*
GASTRIC ACID SECRETION, INTRACEREBROVENTRICULAR INJECTION, ANTICHOLINERGIC DRUGS, CNS DEPRESSANTS (3389)*
GASTRIC ACID SECRETION, ULCER, LARGE INTESTINE, RAT (3906)*
GASTRIC ANTRUM, EXPERIMENTAL METHOD FOR DEMONSTRATING, CLINICAL APPLICATION (3296)
GASTRIC ANTRUM, GASTRIC SECRETIONS, RAT, HEIDENHAIN POUCH (5528)*
GASTRIC BRUSH, DIRECT VISION CYTOLOGY (0228)

GASTRIC CONTENT, NITROGEN FRACTION, HISTAMINE, SECRETION (2383)
GASTRIC DILITATION FOLLOWING VAGOTOMY, DRAINAGE OPERATION, DUODENAL ULCER (1905)
GASTRIC DISEASE, ATROPHIC GASTRITIS, IMMUNOGLOBULIN DEFICIENCY (4130)*
GASTRIC EMPTYING, ALCOHOL (7850)*
GASTRIC FISTULA, GASTRIN SECRETION, BIOASSAY OF GASTRIN, GASTRIN PENTAPEPTIDES, ACID SECRETION (1676)
GASTRIC HYPERSECRETION, SHORT-BOWEL SYNDROME, DIETARY FAT, FLUID AND ELECTROLYTE BALANCE (2690)*
GASTRIC INTUBATION, HIATAL HERNIA, ESOPHAGITIS, DYSPHAGIA (5737)
GASTRIC JUICE, COW'S MILK, CONSTIPATION, DIARRHEA, DEHYDRATION, VEGETABLES (5366)
GASTRIC JUICE, HISTAMINE (0794)*
GASTRIC JUICE, IMMUNOGLOBULINS, ANTIBODIES, GASTROINTESTINAL SECRETIONS (0903)*
GASTRIC JUICE, INTRINSIC FACTOR (0065)*
GASTRIC JUICE, IODIDE, PERTECHNETATE BROMIDE, SALIVA COMPARISON (1679)
GASTRIC JUICE, PEPSIN, ENZYMES, ALKALI INACTIVATION (8583)*
GASTRIC JUICE, PEPTIDE, MAN (4806)*
GASTRIC JUICE, PH MEASUREMENTS, ACIDITY, ULCER OPERATION, STOMACH TUBE (5653)*
GASTRIC JUICE, PROTEOLYTIC ACTIVITY (0075)
GASTRIC MUCOSA, ANTIGENISITY (2380)
GASTRIC MUCOSA, ENTEROCHROMAFFIN SYSTEM, INTRINSIC FACTOR, OXYNTIC CELLS, POLYPEPTIDE HORMONES (5414)*
GASTRIC MUCOSA, GASTRITIS, GLUCURONIDASE ACTIVITY (4976)*
GASTRIC MUCOSAL CELLS, CELLULAR OXYGEN CONSUMPTION, CELLULAR ELECTROLYTES (0791)*
GASTRIC OUTLET OBSTRUCTION, PEPTIC ULCER (1136)
GASTRIC PARIETAL CELLS, ANTIGEN, ANTIPARIETAL CELLS ANTIBODIES, PEROXIDASE ACTIVITY, MICROVILLI (3033)*
GASTRIC POUCH, GASTRODUODENAL ANASTOMOSIS, VAGOTOMY, ANTRECTOMY, RADIOLOGY (6648)
GASTRIC REFLUX, ESOPHAGUS (0262)
GASTRIC SECRETION, ADRENERGIC BLOCKING AGENTS, LIPOPOLYSACCHARIDE, INHIBITION (1666)*
GASTRIC SECRETION, ANTICHOLINERGIC, RAT (3910)
GASTRIC SECRETION, CERULEIN (7859)*
GASTRIC SECRETION, DUODENAL BULB (0795)*
GASTRIC SECRETION, GASTRIC MOTILITY (0777)*
GASTRIC SECRETION, GLYCOPROTEIN (7772)*
GASTRIC SECRETION, HYPERMAGNESEMIA, HYPERCALCEMIA (0800)*
GASTRIC SECRETION, MUCOSA, POTASSIUM CHLORIDE, CHLOROTHIAZIDE (0782)*
GASTRIC SECRETION, NICOTINE, CHRONIC (7876)
GASTRIC SECRETION, PIG, ACID OUTPUT (6394)*
GASTRIC SECRETION, THERMAL BURNS, DOG, MAN (2584)*
GASTRIC SECRETION MEASUREMENT, DUODENAL ULCERS (1678)
GASTRIC SECRETION STUDIES, NASOGASTRIC TUBE POSITION, SUBJECT POSITION (3293)
GASTRIC SECRETORY RESPONSE, HUMORAL STIMULI (1682)
GASTRIC STUMP, CARCINOMA (2614)
GASTRIC TUBE (TRIPLE LUMEN), SUCTION, FEEDING (3377)
GASTRIC ULCER, CHILD, STENOSIS, GASTRECTOMY, GASTRODUODENOSTOMY (2595)
GASTRIC ULCER, DIABETES MELLITUS, HYDROCHLORIC ACID, INSULIN, GASTRIC JUICE (2599)
GASTRIC ULCER, DYSPEPSIA, HIATAL HERNIA, ENDOSCOPY, RADIOLOGY (6237)
GASTRIC ULCER, GERIATRICS, GASTRECTOMY, SUTURE, GASTROENTEROSTOMY (2638)
GASTRIC WALL, CYST, RADIOLOGY, SURGERY (8875)
GASTRICSIN, PEPSIN, AMINO ACID, HUMAN (4810)
GASTRIN, ANTRUM, NEONATE (7093)*
GASTRIN, HISTAMINE, ENZYME (3146)
GASTRIN MECHANISM, POSTVAGOTOMY-PYLOROPLASTY (0298)
GASTRIN PENTAPEPTIDE, SECRETION (0081)
GASTRIN, PERFUSION, RAT (2377)
GASTRITIS, ALCOHOLISM (0306)
GASTRITIS, BILE REFLUX, MENTRIER'S DISEASE (3366)
GASTRITIS, EROSIVE (0310)
GASTRITIS, GASTRIC SECRETION, PENTAGASTRIN (7327)*
GASTRITIS, GASTROSCOPY, HISTOLOGY (5003)
GASTRITIS, IMMUNOGLOBULINS, AUTOANTIBODIES (0274)*
GASTRITIS, MULTIPLE POLYPOSIS (1083)
GASTRITIS, PAIN, DOG (1862)
GASTRITIS, PARIETAL CELL, ANTIBODY (2602)
GASTRITIS, PEPTIC ULCER, SURGERY (6195)
GASTRITIS, PERNICIOUS ANEMIA, IMMUNOLOGY, INTRINSIC FACTOR, ANTIBODY, MUCOSA (5005)
GASTRITIS, SECRETION, THERAPY, VAGOPAX (0271)*
GASTRITIS, TREATMENT (2619)
GASTRITIS, ULCER, DUODENAL ULCER, HYPERACIDITY, HEMORRHAGE, CONFLICT SITUATIONS, PHENOTHIAZINES (5040)
GASTRITIS, ULCER, TREATMENT, SULPIRIDE MIGRAINE, ANTIEMETIC, ENDOSCOPY, RADIOLOGY (6242)
GASTROCAMERA, BIOPSY, EARLY CARCINOMA (6571)
GASTROCAMERA, DIAGNOSTIC VALUE (0203)
GASTROCAMERA, FIBERSCOPE, CARCINOMA(6537)

GASTROCAMERA, GASTROSCOPY, CARCINOMA, FIBERSCOPY (4923)
GASTRODUODENAL FISTULA, MULTIPLE (1040)
GASTRODUODENAL HEMORRHAGE, GASTRIC RESECTION, TREATMENT (1053)
GASTRODUODENAL RESECTION, VALDONI PROCEDURE (1108)
GASTRODUODENAL ULCER, BURNS, PYLOROPLASTY, HEMORRHAGE (5347)
GASTRODUODENAL ULCER, HEMORRHAGE, PANCREATITIS, BLOOD TRANSFUSION (4994)
GASTRODUODENAL ULCER, HEMORRHAGE, PERFORATION (0348)
GASTRODUODENAL ULCER, PERFORATION (0219)
GASTRODUODENAL ULCER, PULMONARY TUBERCULOSIS (0344)
GASTROENTERITIS, PREVENTION, TREATMENT, INFANCY (1888)
GASTROENTERITIS, SMALL INTESTINE, BIOCHEMISTRY (2223)
GASTROESOPHAGEAL JUNCTION, ANATOMY, DISEASE (1853)
GASTROESOPHAGEAL REFLUX, WATER TEST (0214)
GASTROESOPHAGEAL SPHINCTER, CRURAL MUSCLE, SURGERY, PHRENOESOPHAGEAL MEMBRANE (3383)•
GASTROJEJUNAL FISTULA, PEPTIC ULCER, TREATMENT (1120)
GASTROPATHY, PROTEIN LOSS (2618)
GASTROPHOTOGRAPHY, BLIND TECHNIQUE (4067)
GASTROPTOSIS, ENTEROPTOSIS, SURGERY, ASUPANTHENOL, MUCOSA, EXERCISE, AGED PATIENT (5018)
GASTROSCHISIS, ANTENATAL EVISCERATION (6244)
GASTROSCHISIS, GASTROSTOMY, LAPAROTOMY (2954)
GASTROSCHISIS, SURGERY, SMALL INTESTINE, CONGENITAL DEFECT (6205)
GASTROSCOPE, GASTROCAMERA (3303)
GASTROSCOPY, DIAGNOSIS, ULCER (5717)
GASTROSCOPY, ESOPHAGUS, COMPLICATION (5680)
GASTROSCOPY, GASTROPHOTOGRAPHY (4029)
GASTROSCOPY, HEMORRHAGE, ULCER (4954)
GASTROSTOMY, ESOPHAGEAL BURNS (0300)
GASTROSTOMY, FOREIGN SYNDROME, GASTROSCOPIC FINDINGS, CLINICAL CONSIDERATION (3361)
GASTROSTOMY, GASTRECTOMY, PYLOROPLASTY (8094)
GASTROSTOMY, SURGERY, MAN (1086)
GASTROSTOMY, TUBE, UNANCHORED, DECOMPRESSION (2612)
GASTROSTOMY LEAKAGE, CHILDREN, TREATMENT (7362)
GASTROTOMY, SURGERY (5683)
GLANDULAR, ADENOMA, ADENOCARCINOMA, RATS (4133)•
GLANDULAR, TUMORS, HAMSTERS (8088)•
GLOMUS TUMOR (6630)
GLOMUS TUMOR, ARTERIOLAR VENOUS ANASTOMOSIS, BENIGN (1041)
GLUCOCORTICOIDS, COLON, SMALL INTESTINE (7705)
GLUCOSE-6-PHOSPHATE DEHYDROGENASE, MUCOSA (0160)•
GRANULOMA (2603)
GREATER CURVATURE, LESSER CURVATURE, ULCER, RECESS, RADIOLOGY, ENDOSCOPY, TUBERCULOUS ULCERS (5023)
GREATER CURVATURE, TUBE, RECONSTRUCTIVE SRUGERY, ESOPHAGUS (5732)•
GREATER GASTRIC CURVATURE, DIVERTICULA (2753)
HEIDENHAHN POUCH, ETHANOL, SECRETION (8090)•
HEIDENHAIN POUCH, SECRETORY RESPONSE GANGLIONIC BLOCKING AGENTS, GANGLIONIC STIMULANTS, DOG (1677)
HEIDENHAIN POUCH STUDY, GASTRIC FISTULA, SECRETIN, GASTRIC SECRETION (0801)•
HEMATEMESIS, MALLORY-WEISS SYNDROME (0314)
HEMORRHAGE, ARTIFICIAL HYPOTENSION, BLOOD TRANSFUSION (7308)
HEMORRHAGE, ASPIRIN (7336)
HEMORRHAGE, CHILDREN (0256)
HEMORRHAGE, CYTOSCOPIC CONTROL (5791)
HEMORRHAGE, DUODENUM, LIVER CIRRHOSIS (6889)
HEMORRHAGE, DUODENUM, PORTAL HYPERTENSION (4582)•
HEMORRHAGE, DUODENUM, SURGERY (4213)
HEMORRHAGE, FIBEROPTIC ENDOSCOPY (0189)
HEMORRHAGE, INFARCTION, MYOCARDIAL (1048)
HEMORRHAGE, PHEOCHROMOCYTOMA, CATECHOLAMINE SECRETION (7717)
HEMORRHAGE, VAGOTOMY (3349)
HEMORRHAGE, VASOACTIVE AGENTS, DUODENUM (8877)
HEMORRHAGE, VISCERAL REFRIGERATION (4585)
HEMORRHAGIC, EROSIVE GASTRITIS (0037)
HERNIA, HIATUS, ESOPHAGUS (3335)
HETEROTOPIA, INTESTINAL MUCOSA, NEONATE, PYLORIC STENOSIS (0279)
HETEROTOPIA, MUCIN, HISTOCHEMISTRY (0660)
HIATAL HERNIA, ESOPHAGUS, GASTRIC REFLEX (1827)
HISTAMINE INFUSION, MUCUS DEFICIENCY (1111)•
HISTOLOGY, CARCINOMA, METAPLASIA (0275)•
HUNGER, MOTILITY, FOOD (7078)•
HYDROCHLORIC ACID SECRETION, SECRETIN, PANCREAS (2385)
HYDROGEN ION TRANSPORT, ANEROBIC MECHANISMS (1643)
HYPERACIDITY, VANAMIL AS NEW ANTACID (3380)
HYPERSECRETION, FAT DIGESTION, JEJUNAL PH (5893)
HYPERTROPHY, ADULT (0326)
HYPOTHERMIA, HEMORRHAGE (3379)
ILEUS, OMENTUM MAJUS, DIAGNOSIS, TUMOR, SURGERY (2747)
INFILTRATION, RADIOLOGIC CHANGES (1056)
INTERSTITIAL EMPHYSEMA (2586)

INTESTINAL OCCLUSION, RETROPERITONEAL CYST, WOLFFIAN BODY, PAIN (2663)
INTESTINE, BICARBONATE RESPONSE, PANCREATIC SECRETIN (3228)•
INTRAGASTRIC INVAGINATION, GASTRIC SURGERY (2624)
INTRAGASTRIC PRESSURE, ANESTHESIA, INTUBATION (1654)
INTRATHORACIC DUPLICATION, ABDOMEN (4165)
INTRINSIC FACTOR, TRANSCOBALAMINS, VITAMIN B12 (4811)
IRON ABSORPTION, GASTRECTOMY (1021)•
IRON ABSORPTION, VITAMIN B12, WHOLE-BODY IRRADIATION (6651)
ISOLATED, BETA RECEPTOR-DRUG INTERACTIONS, RABBIT (1796)
ISOLATED LYMPHOGRANULOMATOSIS, GASTRECTOMY, RADIOLOGY (8845)
JEJUNUM, INVAGINATION, RETROGRADE, ENTERO-ANASTOMOSIS (4140)
JUICE, IMMUNOGLOBULINS, MILK, SERUM, INCUBATION, PROTEASE ACTIVITY (5633)
JUICE, PEPSIN, INHIBITION (6399)
LACTOSE, MALABSORPTION, SURGERY (1964)
LEIOMYOBLASTOMA, PROGNOSIS (0098)•
LEIOMYOMA (4145), (4150)
LEIOMYOMA, BENIGN TUMOR, RESECTION (4169)
LEIOMYOMA, CALCIFICATION, SURGERY (8869)
LEIOMYOSARCOMA, DIAGNOSIS, THERAPY (8857)
LEIOMYOSARCOMA, RADIOLOGY, DIAGNOSIS (4995)
LESION, ASPIRIN, 2-DEOXYGLUCOSE, HCL, VAGOTOMY (5763)•
LESION, DUODENAL, HEMORRHAGE, PORTAL HYPERTENSION (7735)
LIGATURE RESECTION, ESOPHAGUS, BLEEDING VARICES (2570)
LIPID ABSORPTION, LIPOLYSIS (7065)•
LIPOMA, BENIGN, TUMOR (1039)
LIVER, HEPATECTOMY, CHROMOSOME (2295)
LIVER, IRRADIATION (2836)
LIVER, TRANSPLANTATION (2834)
LYMPHOMATOSIS, ULCER, RADIOLOGY (5817)
LYMPHORETICULAR HYPERPLASIA, ULCER (5780)
LYMPHORETICULAR NEOPLASIA, LYMPHOBLASTOMA (0284)
LYMPHOSARCOMA (3359)
LYMPHOSARCOMA, HISTOLOGY (0322)
LYMPHOSARCOMA, MULTIPLE ULCERATION (0315)
MAGNESIUM, PEPTAVLON, HISTAMINE (7094)•
MAGNET-TIPPED TUBE STUDIES (3291)
MALIGNANCY, GASTRIC LIPOMA MIMICKING (3350)
MALIGNANT MELANOMA, SMALL INTESTINE, LUNG (0334)
MALIGNANT PRIMARY LYMPHOGRANULOMA, NOSOLOGY, PROGNOSIS (8854)
MENETRIER'S DISEASE, GASTRITIS, RADIOLOGY (7348)
MESOCAVAL SHUNT, CECUM, COLON (3000)
MICROORGANISMS, DEAMIDATION (2367)•
MICROSCOPY, MUCOUS CELL, DIFFERENTIATION (6304)•
MOBILIZATION, ESOPHAGEAL REPLACEMENT (6599)
MORPHOGENESIS, MUCOSA, MESENCHYMES, ORGAN, SPECIFICITY (4734)
MORPHOLOGY, PYLORIC GLANDS, IMMUNOFLUORESCENCE TECHNIQUE, ENTEROCHROMAFFIN CELLS, GASTRIN (3037)•
MOTILITY, ATROPHIC MYOTONIA (0046)
MOTILITY, BACTERIA LIPOPOLYSACCHARIDE, NERVOUS CONTROL, ADRENALECTOMY, ADRENERGIC MECHANISM (3893)•
MOTILITY, CONTRACTIONS, BRADYKININ (0913)•
MOTILITY, DENERVATED ANTRAL POUCHES (1645)•
MOTILITY, DUODENUM, BILE FLOW (5526)
MOTILITY, ELECTRIC RHYTHM (5524)
MOTILITY, ELECTROGASTROGRAPHY, THYROTOXICOSIS (3385)
MOTILITY, GASTRIC POUCH, PROSTAGLANDIN E1 (1648)•
MOTILITY, MEDULLA OBLONGATA, VAGUS (0052)
MOTILITY, MOTOR RESPONSE, DRUG EFFECT, VAGAL EFFECT, ATROPINE, BLOCKING AGENTS (5518)•
MOTILITY, NERVOUS CONTROL, CONTRACTION CYCLES (1657)
MOTILITY, PENTAGASTRIN, VAGOTOMY, DOG (1644)•
MOTILITY, PITUITARY CONTROL (7088)
MOTILITY, VAGO-VAGAL REFLEX, NERVOUS CONTROL (5520)•
MOTILITY PRESSURE STUDIES, SECRETION, ACID (0803)•
MOTOR ACTIVITY, GASTRIN, PENTAGASTRIN (0778)•
MUCIN, HISTOCHEMISTRY (7036)•
MUCOSA, ACETOSLICYLIC ACID, ABSORPTION (3098)•
MUCOSA, ACID SECRETION, ELECTROLYTE (1674)•
MUCOSA, AMINE-STORING CELLS, CHARACTERISTICS (6285)•
MUCOSA, AMINO ACIDS, CHIEF CELL, PRODUCTIN (6288)•
MUCOSA, AMMONIA, UREASE (4127)•
MUCOSA, AMP, NA+ -K+ -DEPENDENT ATPASE (3914)
MUCOSA, ANTISERUM, IMMUNOFLUORESCENCE (0950)•
MUCOSA, ANTRUM, CORPUS, PATHOLOGY, METAPLASIA, ULTRASTRUCTURE (2582)•
MUCOSA, ANTRUM, DIAPHRAGM (4990)
MUCOSA, ANTRUM, HISTOLOGY, MORPHOLOGY, BILE EFFECT (3027)•
MUCOSA, ATROPHIC GASTRITIS, BIOPSY, INTRACYTOPLASMIC CANALICULI, PARIETAL CELLS (5765)•
MUCOSA, AUTORADIOGRAPHY (0222)
MUCOSA, BLOOD FLOW, ASPIRIN (3241)•
MUCOSA, BLOOD FLOW, ETHANOL, ASPIRIN (5382)
MUCOSA, CANCER, HISTOCHEMISTRY (0014)•
MUCOSA, CANCER, PATHOLOGY, DIAGNOSIS (0977)
MUCOSA, CANCER TISSUE, ISOENZYMES (0062)•

UCOSA, CATECHOLAMINES, HISTAMINE, LUNG (0796)•
UCOSA, CHIEF CELLS, ULTRASTRUCTURE (0012)•
UCOSA, CHRONIC GASTRITIS, ALCOHOL (4978)
UCOSA, CHRONIC GASTRITIS, DIAGNOSIS (7264)
UCOSA, CL FLUXES, CO2 AND BICARBONATE (2354)
UCOSA, DUODENAL BULB, PROLAPSE (5004)
UCOSA, DUODENUM, HISTOLOGY, PEPTIC ULCER (5826)•
UCOSA, ELECTRON MICROSCOPY, MITOCHONDRIAL DEHYDROGENASE, MICROSOMAL ENZYMES, LYSOSMAL ENZYME, BIOPSY (4977)
UCOSA, ENZYME, ATP (4751)
UCOSA, FINE STRUCTURE, SECRETION, PILOCARPINE (0737)•
UCOSA, FISTULA, SECRETION, ULCER, TESTOSTERONE, ESTRONE, FUNCTION, PEPSIN, RAT (4183)•
UCOSA, FREEZING, GASTRIC AND DUODENAL ULCERS (0281)
UCOSA, FREEZING, HISTOCHEMISTRY, ENZYME, SECRETION, PH INDICATOR (1608)
UCOSA, FUNDUS, BORDER CELLS, MORPHOLOGY (0013)•
UCOSA, GLYCOPROTEIN, WHALE (5547)
UCOSA, HISTAMINE, 5-HYDROXYTRYPTAMINE DOPAMINE (6404)
UCOSA, HISTIDINE DECARBOXYLASE, RAT (6397)•
UCOSA, HISTOCHEMISTRY, ULTRASTRUCTURE, ENTEROCHROMAFFIN CELLS, AMINE MECHANISMS (3793)•
UCOSA, HISTOLOGY, PATHOLOGY, ULTRASTRUCTURE (1025)•
UCOSA, HUMAN, IMMUNOFLUORESCENCE, ANTIGEN, HETEROIMMUNSERA (3795)•
UCOSA, INJURY, ACTH, ASPIRIN, RENEWAL (3909)•
UCOSA, INTRINSIC FACTOR (3150)
UCOSA, ION FLOW, WATER FLOW, FUNDUS, ANTRUM, POUCH DOGS (3905)•
UCOSA, IRON, EXCRETION (1640)
UCOSA, IRON-DEFICIENCY ANEMIA (7329)•
UCOSA, LIPASE, TRIGLYCERIDE (7027)•
UCOSA, LYMPHOSARCOMA (5392)
UCOSA, MAST CELL (3827)
UCOSA, MAST CELL, HISTAMINE (0007)•
UCOSA, MOTILITY, OPTICAL DENSITY, ADENINE COMPOUNDS, FROG (3073)
UCOSA, MUSCLE, ELECTRICAL ACTIVITY, RECORDING, MAN (4796)•
UCOSA, NEOPLASTIC POLYP, PYLORIC ANTRUM, EROSION, SUBMUCOSAL INFILTRATION (5006)
UCOSA, NICOTINE, SECRETION (4809)
UCOSA, PEPSIN, ZONES (7864)•
UCOSA, PEPSINOGEN, ELECTROPHORESIS (3393)•
UCOSA, PEUTZ-JEGHER'S SYNDROME, SMALL INTESTINE, DUODENUM, JEJUNUM, ILEUM (5875)
UCOSA, PHENYLEPHRINE HYDROCHLORIDE, ALPHA-RECEPTORS, BETA-RECEPTORS, RATS (5021)
MUCOSA, POST-GASTRECTOMY (0282)
MUCOSA, PROLAPSE, RADIOLOGY (4986)
MUCOSA, PROTEOLYSIS, SILAIC ACID, HYPERACIDITY, PEPSIN (5531)•
MUCOSA, PYLORUS, FUNDUS, FUCOSE (3904)•
MUCOSA, ROENTGENOGRAPHY, INTESTINAL MOTILITY, BARIUM SULFATE, PASPERTIN, SOLCORAY (4898)
MUCOSA, SECRETION (4152)
MUCOSA, SECRETION, ACID (2628)
MUCOSA, SECRETION, ENZYME ACTIVITY, B-GLUCURONIDASE (4129)•
MUCOSA, SECRETION, MORPHOLOGY, HYPERTHYROIDISM (4181)
MUCOSA, TRANSPORT, URIC ACID, ACID SECRETION (4761)•
MUCOSA, ULCER, ADENOSINE (5782)
MUCOSA, ULCER, EPINEPHRINE, NOREPINEPHRINE, VAGOTOMY (5020)•
MUCOSA, ULTRASTRUCTURE (0017)
MUCOSA, ULTRASTRUCTURE, HISTOLOGY, FLUORESCENCE, SEROTONIN, HISTAMINE (2633)•
MUCOSA, VOLTAGE RESPONSE, DIRECT CURRENT, FROG (6390)
MUCOSA, WOUNDING, HEALING, SQUAMO-COLUMNAR JUNCTION (6607)•
MUCOSA PROTECTION, POLYGALACTOSULFATE, AGGRESSION CONDITION (3145)
MUCOSAL BLOOD FLOW, RESTING STATE OF MUCOSA, AMINOPYRINE-CLEARANCE, EPINEPHRINE, NOREPINEPHRINE, VASOPRESSIN, GASTRIN (1672)•
MUCOSAL BARRIER, LYSOLECITHIN, DIGITOXIN, PHOSPHOLIPASE A (8556)•
MUCOSAL LESIONS, KAPOSI'S SARCOMA (0291)
MUCOUS CELLS, FUNDUS, PYLORUS, AUTORADIOGRAPHY (8585)•
MUCUS, VISCOSITY, DUODENAL ULCERATION (1916)
MULTIPLE POLYPS, DIARRHEA, GASTRECTOMY (5818)
MUSCLE, CANCER, TUMOR, POTENTIAL (4154)
MUSCLE, PROPAGATION VELOCITY (0050)
MUSCULATURE, LAPAROSCOPY, ELECTRICAL ACTIVITY, ELECTROMYOGRAM (6387)
MYELOMA, ULCER (0292)
MYOGENIC TUMORS, GASTROSCOPY, PATHOLOGY (8118)
MYOID TUMOR, HEMORRHAGE, RESECTION, RADIOGRAPHY, METASTASIS, MALIGNANCY (5014)
NEURINOMA, HISTOPATHOLOGY, ANATOMOPATHOLOGY (8853)
NEURINOMA, NEOPLASM (4987)
NEUROGENOUS DYSTROPHY, ULCERATION (0329)
99MTC AND I131, LOCALIZATION, NEOPLASM (3920)
99TC VISUALIZATION, RESECTION (4083)
NITRITES, METHEMOGLOBIN, NITROSAMINES, CARCINOGENS, PH, BASICITY (5550)
OBSTRUCTION, CARCINOMA, DUODENAL ULCER TUBERCULOSIS (6634)

OBSTRUCTION, SMALL INTESTINE, ADHESION (2670)
OILS, PROCELLARIIFORM BIRDS (1407)
OPERATION, GASTRIC ULCER, DUODENAL ULCER (1107)
O2 CONSUMPTION, ARTERIOVENOUS SHUNT, DUODENUM, PANCREAS (6507)
PACKING, GASTRODUODENAL HEMORRHAGE (6649)
PANCREAS, PSEUDOCYST (2775)
PANCREATECTOMY, FRACTURE, HYPOGLYCEMIA, DIET, LIPID, GLUCAGON (2781)
PANCREATITIS (2778)
PANCREATITIS, AFFERENT LOOP SYNDROME SURGERY (1858)•
PARIETAL CELL, CARBONIC ANHYDRASE, LOCALIZATION (6308)•
PARIETAL CELL ANTIGEN, ENZYME-LABELLED ANTIBODY, GASTRIC MUCOSA ULTRASTRUCTURE (3033)•
PARIETAL CELL MASS, DUODENUM, ULCER, VAGOTOMY (5030)
PARTIAL GASTRECTOMY, DUMPING SYNDROME, CALCIUM DEFICIENCY (5779)
PARTIAL GASTRECTOMY, NEUROLOGICAL DISEASE (1882)
PARTIAL GASTRECTOMY, OCCULT BLOOD LOSS, ANEMIA (3351)
PARTIAL GASTRECTOMY, SERUM ALKALINE, PHOSPHATASE (5789)
PATHOLOGY, HISTOLOGY, MORPHOLOGY, SMOOTH MUSCLE (1035)
PATHOLOGY, MUCOSA, ACID SECRETION, HYPERCHLORHYDRIA, PROTEIN-LOSING GASTROPATHY (1860)•
PATHOLOGY, ULTRASTRUCTURE, MUCOSA, NEOPLASM, LEIOMYOBLASTOMA (1576)•
PENTAGASTRIN, GLUCAGON, PEPTIC ULCER (0790)•
PEPSIN, ACID, DUODENUM, SECRETION (2369)•
PEPSIN, ENZYMATIC ACTIVITY, POLYVINYLPYRROLIDONE (7090)•
PEPTIC ACTIVITY, CARBENOXOLONE, GLYCYRRHETINIC ACID (7091)•
PEPTIC ULCER (0342)
PEPTIC ULCER, ACID, PEPSIN, SECRETION, PENTAGASTRIN, I-HYOSCYAMINE (3394)
PEPTIC ULCER, AMINOTRANSFERASE, MUCOSA, AMINO ACIDS (3388)•
PEPTIC ULCER, BLEEDING, AGE EFFECT, ABO BLOOD GROUP EFFECT (3404)
PEPTIC ULCER, CHOLINERGIC ACTIVITY, GASTRIC JUICE (5848)
PEPTIC ULCER, DRUG THERAPY (1922)
PEPTIC ULCER, DUODENAL ULCER, ACID SECRETIONS (1115)•
PEPTIC ULCER, DUODENUM, SURGERY (1135), (5844)
PEPTIC ULCER, DUODENUM, PANCREATIC SECRETION (5843)
PEPTIC ULCER, EPIDEMIOLOGY, CHILDHOOD (3397)
PEPTIC ULCER, EUGASTRID (2649)
PEPTIC ULCER, FAMILY (5838)
PEPTIC ULCER, GASTRIN, DUODENUM (7384)•
PEPTIC ULCER, GLUCOCORTICOID, DUODENUM (5850)
PEPTIC ULCER, HEMORRHAGE, HYPOTHERMIA, HEMOSTATIC DRUG (5007)
PEPTIC ULCER, INFLAMMATION (1923)
PEPTIC ULCER, MUCOSA, ANTRO-FUNDAL REGION, DUODENUM (1903)•
PEPTIC ULCER, PALPABLE MASSES (1919)
PEPTIC ULCER, PERFORATION, OBSTRUCTION (2645)
PEPTIC ULCER, PREGNANCY, HEMORRHAGE (0352)
PEPTIC ULCER, RADIOLOGIC AND GASTRIC ACID CORRELATION (3403)
PEPTIC ULCER, RECURRENT, SURGERY (1130)
PEPTIC ULCER, SECRETION, MINERAL WATER (5851)
PEPTIC ULCER, SURGERY, HEMORRHAGE (1141)
PEPTIC ULCER, SURGERY, INDICATIONS, RESECTION (5843)
PEPTIC ULCER, SURGERY, LACTOSE MALABSORPTION, INTESTINAL LACTASE, STEATORRHEA (1113)•
PEPTIC ULCER, SURGICAL TREATMENT (1924), (3399)
PEPTIC ULCERATION, STEROIDS (7832)•
PERFORATION, POTASSIUM CHLORIDE, ULCERATION, GASTROINTESTINAL TRACT, GASTRIC MUCOSA (4984)
PERFUSION STUDY, OUTPUT (3266)•
PERISTALSIS, REGIONAL CONTRACTION RATE (3127)
PERISTALTIC PUMP (0296)
PERNICIOUS ANEMIA, SERUM GASTRIN CONCENTRATIONS (1669)•
PH, TELEMETRIC DETERMINATION, ACID SECRETION (5548)
PHLEGMASIA (3352)
PHLEGMON (7365)
PHYCOMYCOSIS, ULCERATION (0295)
PHYSIOLOGY, DISEASE, RECENT ADVANCES (2245)
PLASMA CELL GRANULOMA (3378)
PLASMACYTOMA, SURGERY (7347)
PLICATION, WEIGHT REDUCTION, SURGERY (3744)
POLYP, ADENOMATOUS (0301)
POLYP, GASTRITIS, CYST (5010)
POLYP, POLYPOGENESIS, MALIGNANT DEGENERATION, ADENOMA (5785)
POLYPOSIS (7337)
POSTGASTRECTOMY, ALCOHOL, GLUCOSE METABOLISM (2629)
POSTGASTRECTOMY RETENTION, ANASTOMOSIS, RETROCOLIC (0290)
POST-RESECTION SYNDROMES, DUMPING SYNDROME (0304)
POTENTIAL DIFFERENCE, BILE, ALCOHOL, ASPIRIN (3705)•
PRECANCEROUS INDICATIONS, POLYPS, RADIOLOGY, ENDOSCOPY (5365)
PREOPERATIVE CARE, LESIONS (0690)
PRESSURE, RELAXANT (5767)
PRIMARY CANCER (0324)
PRIMARY SECRETION, GASTRIC BUFFER, LOW DOSAGE HISTAMINIC TESTS (1680)
PRIMARY TUMOR, CHILDREN, RESECTION (6647)
PRIMARY SARCOMA, ANATOMOPATHOLOGY, DIAGNOSIS (8098)

PRIMARY TUMOR, GASTRECTOMY, GASTRIC ULCER, DUODENAL ULCER (8119)
PROCTOCOLECTOMY, ULCERATIVE COLITIS (2766)
PROPANTHELINE BROMIDE, GASTRIC ACID (0788)•
PROTEIN-DEFICIENT DIET, KWASHIORKA SYNDROME (1151)•
PROXIMAL RESECTION, GASTRIC AND PANCREATIC FUNCTION, ABSORPTION, CANCER (1020)•
PSEUDOLYMPHOMA, GASTRITIS (1865)
PSEUDOXANTHOMA ELASTICUM, MAN (1095)
PYLORIC STENOSIS, CONGENITAL, HYPERTROPHIC SURGERY (1094)
PYLORIC STENOSIS, INCIDENCE IN RACIAL GROUPS, HAWAII (1871)
PYLORIC STENOSIS, WATER AND ELECTROLYTE CONTENT, SKELETAL MUSCLE (2583)•
PYLORIC ULCERATION, CONGENITAL DUODENAL STENOSIS (0294)
PYLORO-CORPORIC INHIBITORY REFLEX, VAGO-VAGAL PATHWAY (6383)
PYLOROPLASTY, DIARRHEA, GASTROENTEROSTOMY, VAGOTOMY (1902)•
PYLORUS, GASTRIN (1637)
PYLORUS LIGATION, DEOXY-D-GLUCOSE ACTION (3917)
QUATERON ACTION, MUCOSA (0073)
RADIOGRAPHIC STUDY, PULMONARY EMPHYSEMA (1918)
RADIOGRAPHY, CARCINOMA, POLY, ULCER (6555)
RADIOLOGICAL, TREATMENT, LYMPHATIC (5786)
RADIOLOGY, 99MTC SCANNING, CELIAC AXIS (4026)
RADIOLOGY, OPTIMAL IMAGE (8024)
REFLUX, HIATAL HERNIA (4115)
REFLUX, MANOMETRY (0238)
REFLUX ESOPHAGITIS (2571)
RENNIN, LOCALIZATION, CALF, ABOMASUM, IMMUNOFLUORESCENCE (8507)•
RESECTION, ADDUCENT LOOP SYNDROME, SURGERY (5808)
RESECTION, AMPULLA OF VATER DISCONNECTION (6151)
RESECTION, ANTROPYLORECTOMY, VAGOTOMY, PEPTIC ULCER (2654)
RESECTION, BILLROTH, ULCER (4155)
RESECTION, CARBOHYDRATE METABOLISM (3383)
RESECTION, COMPENSATION MECHANISM, BILLROTH I (4053)
RESECTION, DUCTS, EXTRAHEPATIC, PANCREATIC, SURGERY (8126)
RESECTION, DUMPING SYNDROME (0327)
RESECTION, DUMPING SYNDROME, ANTI-SEROTONIN, ULCER (5079)
RESECTION, DUODENAL ULCER (3411)
RESECTION, DUODENAL ULCER, ENZYMATIC INHIBITOR (4208)
RESECTION, DUODENAL ULCER, HEMORRHAGE (7339)
RESECTION, ESOPHAGEAL ULCER, COLOPLASTY (4103)
RESECTION, HEMOPHILIA A, ANTIHEMOPHILIC GLOBULIN, PIG, DUODENAL ULCER TRANSFUSIONS (6162)
RESECTION, HEMORRHAGIC GASTRITIS (4166)
RESECTION, HEMORRHAGIC ULCER, PEPTIC ULCER, RELAPAROTOMY, HYPOCHROMIC ANEMIA, WEIGHT CONTROL, DELAYED RESULTS (5783)
RESECTION, HEPATIC ARTERY, LIVER NECROSIS (3569)
RESECTION, LIPID ABSORPTION (1886)
RESECTION, METHYLURACIL, DOG (7350)
RESECTION, MUCOUS GASTROJEJUNAL PROLAPSE, HEMATEMESIS (2593)
RESECTION, OESOGASTRIC ANASTOMOSIS, METALLIC CLIP, P.K.S. 25, TERMINOLATERAL TECHNIQUE (5350)
RESECTION, PEPTIC ULCER (7405)
RESECTION, PERISTALSIS, MOTOR FUNCTION (0044)•
RESECTION, POLYPOSIS, COLONIC MUCOSA, COLOTOMY (5065)
RESECTION, POSTOPERATIVE PANCREATITIS, DUODENAL ULCER, CARCINOMA (5155)
RESECTION, SORBITOL DEHYDROGENASE, CHOLECYSTECTOMY, LDH ACTIVITY, TRANSAMINASES, LIVER DISEASE, COLON SURGERY, TUMORS (6223)
RESECTION, ULCER, DUODENAL (4210)
RESECTION, VAGOTOMY, CANCER, ULCER, POLYP (5805)
RETENTION, POSTVAGOTOMY, BETHANECHOL (5792)
RETENTION, VAGOTOMY, DRAINAGE, MANAGEMENT (5773)
RETICULOSARCOMA, HISTOLOGY (4156)
RETICULUM SARCOMA (1894)
RUPTURE, DILATATION, ACUTE (1106)
RUPTURED GASTRIC VEIN, PROTRACTED VOMITING (2615)
SARCOMA, RESECTION, RADIATION THERAPY (1081)
SARCOMA, RESECTION, ULCER (1909)
SCAN, TECHNETIUM 99M, DIFFERENTIAL DIAGNOSIS, GASTRIC MUCOSA, SECRETION (4888)
SCANNING, PERTECHNATE, RAT (2346)
SECRETIN, GASTRIC ACID SECRETION (0786)•
SECRETION, ACID, EMPTYING, ULCER, HETERONIUM BROMIDE (4792)•
SECRETION, ACID, FETAL, HISTAMINE, INSULIN, GASTRIN (2366)•
SECRETION, ACID, GASTRIN PENTAPEPTIDE, HISTAMINE, RAT (3151)
SECRETION, ACID, HISTAMINE (7865)•
SECRETION, ACID, HYPEROSMOLAL (7089)•
SECRETION, ACID, INTRINSIC FACTOR, HYPOTHYROIDISM, HYPERTHYORIDISM (1668)•
SECRETION, ACID, PEPSIN, PEPSINOGEN, DOPA, METHYLDOPA (0068)•
SECRETION, ACID, VAGOTOMY, ATROPINE SULFATE (0270)•
SECRETION, ACID PRODUCTION, INHIBITION, IMIDAZOLINE DERIVATIVE (5534)•
SECRETION, ACID ULCER (4910)
SECRETION, ACIDINE-MUCOSINE, ACIDINE-PEPSIN, ABOMINE (3141)

SECRETION, ACIDITY, PORTACAVAL SHUNT (6392)*
SECRETION, ACIDITY TITRATIONS (0185)*
SECRETION, ADRENERGIC-BLOCKING AGENT, ULCER, RAT (5829)*
SECRETION, ANTIGASTRIN, GASTRIC, FISTULA, DOG (3134)*
SECRETION, BASAL, ACID, PEPSIN, ADRENOMIMETIC (5546)
SECRETION, BETAZOL TEST, VAGOTOMY, AMINOETHYLPYRAZOL, PYLOROPLASTY, HYDROCHLORIC ACID (4943)
SECRETION, BRADYKININ (5539)
SECRETION, CERULEIN, HISTAMINE (7861)*
SECRETION, CHLORIDE ION SOLUTIONS, ANESTHETICS, FROG (1681)
SECRETION, CINCOPHEN, ANTRAL POUCH DOG (3148)
SECRETION, DIETARY PROTEINS, ULCERS (4168)
SECRETION, DRUG STIMULATED, CONDITIONED REFLEX, PRESSURE EFFECT (0074)
SECRETION, DUODENAL ACIDIFICATION (6398)*
SECRETION, DUODENAL ULCER, SURGERY (5845)
SECRETION, DUODENUM, SMALL INTESTINE (4866)
SECRETION, ELEDOISIN, BRADYKININ, CALCIUM IONS, ANGIOTENSIN, MUCOSA (4805)
SECRETION, ENZYMES (0178)
SECRETION, FROG, GASTRIN, VAGOTOMY (5537)
SECRETION, FUNCTION, MUSIC EFFECTS (1673)*
SECRETION, GASTRIC ACID, ATROPINE, INSULIN, HISTAMINE, SEROTONIN (5536)
SECRETION, GASTRIC ANTRAL JUICE (0792)*
SECRETION, GASTRIC PRESSURE (5551)
SECRETION, GASTRIN (3915)
SECRETION, GASTRIN, FROG, ACID, PEPSIN (5549)
SECRETION, GASTRIN, PENTAGASTRIN, HISTAMINE, PEPSIN, ULCER (4189)*
SECRETION, GASTRIN-STIMULATED (0067)*
SECRETION, HISTAMINE, GASTRIN, DUODENAL ULCER, PEPSIN (4935)
SECRETION, HISTAMINE, PENTAGASTRIN (3149)
SECRETION, HISTAMINE-STIMULATED, ULCER (0354)
SECRETION, HYDROCHLORIC ACID, PEPSINOGEN (7777)*
SECRETION, INTRINSIC FACTOR, PEPSIGEN (0066)*
SECRETION, IRON BINDING CAPACITY, DUODENAL ULCER (3390)*
SECRETION, METABOLISM, HISTAMINE (0802)*
SECRETION, MOTILITY, ACID (0803)*
SECRETION, MOTILITY, NERVOUS CONTROL (5472)
SECRETION, MUCOSA, ACID (2375)*
SECRETION, MUCOSA, ACID, PEPSIN, MUCUS (2371)*
SECRETION, NERVOUS CONTROL, HYPOGLYCEMIA (1675)*
SECRETION, NICOTINE, RAT (5542)
SECRETION, PAS (5545)
SECRETION, PATHOLOGY, LYSOZYME ACTIVITY (6652)
SECRETION, PELLETED DIET, MAGNESIUM, NUTRITION (4879)
SECRETION, PENTAGASTRIN (6542)
SECRETION, PENTAGASTRIN, BETAZOLE (0762)*
SECRETION, PENTAGASTRIN, MOTILITY (1650)*
SECRETION, PENTAGASTRIN TEST (0061)*
SECRETION, PENTAGASTRIN-INDUCED, ATROPINE, VAGOTOMY (0064)*
SECRETION, PEPSIN, ACID (3137)*
SECRETION, PEPSIN, PENTAGASTRIN, SECRETIN, CHOLECYSTOKININ (7092)*
SECRETION, PEPSIN, SECRETIN (0793)*
SECRETION, PEPTIC ULCER (0349), (7396)
SECRETION, PEPTIC ULCER, CORTICOIDS (7099)
SECRETION, PEPTIC ULCER, SALIVA PROTECTION, BILE, DUODENUM (5832)
SECRETION, PEPTIDE, PANCREAS (2481)*
SECRETION, PH TELEMETRY, ESOPHAGEAL REFLUX, ULCER, THERAPY EVALUATION (0938)*
SECRETION, PSORIASIS (0082)
SECRETION, QUANTITATIVE DETERMINATION (7256)
SECRETION, SALIVOGASTRONE, INHIBITION (5787)
SECRETION, SCLEROSIS (0688)
SECRETION, SECRETIN, JEJUNAL ACIDIFICATION, ACID OUTPUT (3903)*
SECRETION, SMALL INTESTINE, SURGERY (1026)*
SECRETION, SPECTROPHOTOMETRY (3281)
SECRETION, STABILITY, DIGITALIS (0072)
SECRETION, STIMULATION, EXTERNAL PANCREATIC FISTULA (3147)
SECRETION, STIMULATION, PENTAGASTRIN (5019)*
SECRETION, SURGERY, ULCER (7254)
SECRETION, TETRAGASTRIN (6404)
SECRETION, ULCER, ZOLLINGER-ELLISON SYNDROME (3265)*
SECRETION, ULCEROGENIC, ANTIULCER DRUGS (7863)*
SECRETION, VISUAL DEPRIVATION, DOG (7100)
SECRETION, VISUAL DEPRIVATION, DOG, HISTAMINE (5541)
SECRETION, WOMEN, LABOR (0076)
SECRETION, ZOLLINGER-ELLISON SYNDROME, ABSORPTION (5380)
SECRETION, ZOLLINGER-ELLISON SYNDROME, PANCREAS, BROCRESINE (6214)
SECRETORY PATTERN, PREPARATION (3143)
SENILE DISORDERS, GASTRIC CAMERA (4046)
SEROSA, ELECTRICAL ACTIVITY, ACTION POTENTIALS, GASTRIN PENTAPEPTIDE (5514)*
SEROSA, TUMOR IMPLANT (5798)
SEROTONIN, MUCOSA (2659)*

SHAY ULCER, PARASYMPATHOLYTICS, SURGICAL VAGOTOMY (1023)*
SMALL INTESTINE, DIVERTICULUM, DUODENUM (2673)
SMALL INTESTINE, SYNAPSES (7786)*
SMOOTH MUSCLE, ELECTRICAL ACTIVITY, ATROPINE, GUINEA PIG (3865)*
SMOOTH MUSCLE, MOTILITY, CAT (7084)
SMOOTH MUSCLE, PYLORIC ANTRUM (0048)
SMOOTH MUSCLE CELL MITOSIS, MORPHOLOGY, CHICK (7819)
SPLENIC, TUMOR, PERFORATION, METASTASES, CACHEXIA, CYTOSTATIC TREATMENT, RADIOLOGY (5011)
SPONTANEOUS RUPTURE, CHILDREN (5776)
STENOSIS, ANASTOMOSIS (1046)
STEROID ULCER, GASTRECTOMY, HEMORRHAGE (6666)
STEROID ULCER, PERFORATION, TREATMENT RHEUMATISM (1119)
STOMACH, MALABSORPTION, MUCOSA (2604)
STOMACH, TOXIC GOITER, SECRETION, MOTOR ACTIVITY, RADIOLOGY (2587)
STOMACH, ULCER, DUODENUM (2600)
STRESS ULCER, DUODENUM (7393)
STRESS ULCER, POSTOPERATIVE HEMORRHAGE DUODENUM (5772)
STUMP, GASTROJEJUNOPLASTY, INTESTINAL GRAFT (7338)
STUMP CARCINOMA, GASTRECTOMY, ULCER (4167)
SURGERY, ACID FORMATION, HISTAMINE TEST, DIAGNOSTIC PROCEDURE (1043)
SURGERY, ANASTOMOTIC ULCERS, RADIOLOGY (8140)
SURGERY, BEZOAR FORMATION, PATHOGENESIS, TREATMENT (8855)
SURGERY, DIARRHEA, INTESTINAL MALABSORPTION (8102)
SURGERY, DUODENAL STUMP CLOSURE (3374)
SURGERY, DUPLICATION, CYST (3357)
SURGERY, ELECTROLYTE METABOLISM (5807)
SURGERY, ESOPHAGEAL CARCINOMA (4113)
SURGERY, ESOPHAGEAL CARCINOMA FOLLOWING (3336)
SURGERY, FISTULAS (1029)
SURGERY, GASTRIC DECOMPRESSION, BILIARY TRACT (6646)
SURGERY, GASTRIC ULCER (1030)
SURGERY, GASTRODUODENAL ULCER (3406)
SURGERY, GASTROINTESTINAL HEMORRHAGE, GASTROESOPHAGEAL REFLUX, GASTRIC STUMP CANCER (8095)
SURGERY, HYPOGLYCEMIA, GLUCOSE TOLERANCE, TEST, INSULIN (1028)
SURGERY, MALABSORPTION, MUCOSA (2604)
SURGERY, PATHOLOGY, CANCER, PARTIAL GASTRECTOMY (1036)
SURGERY, PATHOLOGY, MUCOSA, ABSORPTION (1857)*
SURGERY, RECTUM, SUTURE (3740)
SURGICAL COMPLICATIONS, GERIATRICS (7367)
THERAPEUTIC DRUG, NEW (4178)
THORACIC, X-RAY (7288)
TOTAL GASTRECTOMY, ESOPHAGO-JEJUNAL-DUODENAL INTERPOSITION (1027)
TOXIC GOITER, SURGERY, SECRETION, MOTOR ACTIVITY, RADIOLOGY (2587)
TRANSMURAL ELECTRICAL POTENTIAL, FEEDING, PEPTIDE STIMULATION (1663)
TRANSPLANT (3912)
TRANSPOSED, ESOPHAGEAL REPLACEMENT,
TRAUMA, DUODENAL RUPTURE (7364)
CARCINOMA (1849)
TUBE, GREATER CURVATURE, RECONSTRUCTIVE SURGERY, ESOPHAGUS, CHILDREN (5734)*
TUBE, INSERTION TECHNIQUE, SURGERY (4158)
TUBERCULOSIS (8114)
TUMOR, COMMON BILE DUCT OCCLUSION, JAUNDICE (5796)
TUMOR, CYTOLOGY, DIAGNOSIS (4930)
TUMOR, GASTROSCOPY, HIATUS HERNIA, POLYP, ESOPHAGUS, DIVERTICULI (4957)
TUMOR, MESENCHYME, DIAGNOSIS (3373)
TUMOR, NODULES, LUNG HEMATOMA, CHILD (4147)
TUMOR, POLYP, SURGERY (4985)
TUMOR, STENOSIS, ESOPHAGEAL HERNIA, DUODENUM, DIVERTICULUM (5802)
ULCER, ABSORPTION, SMALL INTESTINE (5888)
ULCER, ACID SECRETION (7268)
ULCER, ACIDITY MEASUREMENT, CLINICAL EVALUATION (1875)
ULCER, ALLERGIC PATHOGENESIS (2630)
ULCER, ANTICHOLINERGIC AGENTS (0307)
ULCER, ASPIRIN INGESTION (6661)
ULCER, BETAZOLE TEST (0181)*
ULCER, BLOOD GLUCOSE (1128)
ULCER, BRAIN NOREPINEPHRINE, CONFLICT, ADRENAL (4188)*
ULCER, CANCER (6617)
ULCER, CARCINOMA, ATHEROSCLEROSIS, GERIATRICS, RADIOLOGY (6620)
ULCER, CARCINOMA, SURGERY (2627)
ULCER, CEREBELLAR LESION (2645)
ULCER, CHRONIC HEPATITIS, CIRRHOSIS (0351)
ULCER, CHRONIC MALIGNANCY (4202)
ULCER, CLINICAL TREATMENT (2626)
ULCER, COAGULOGRAM, THROMBOELASTOGRAM (7403)
ULCER, DEVELOPMENT, SULFATION, POLYSACCHARIDE (6659)*
ULCER, DIAGNOSIS (0212)
ULCER, DIAGNOSIS, THERAPHY (0347)
ULCER, DIET (3395)
ULCER, DIETARY PARTICLE SIZE, FIBER CONTENT, SWINE (5827)*
ULCER, DOGMATIL, SULPIRIDE (5035)
ULCER, DUODENAL, BILLROTH-II/FINSTERER RESECTION (4214)
ULCER, DUODENUM, CHRONIC PNEUMONIA (7410)
ULCER, DUODENUM, GASTRIC SECRETION, SURGERY (7400)
ULCER, DUODENUM, PHARMACOTHERAPY (5834)
ULCER, DUODENUM, REPEATED SURGERY (3412)
ULCER, DUODENUM, SMOOTH MUSCLE CONTRACTION, BLOOD (5521)
ULCER, DUODENUM, SURGERY (1908), (4194), (5027), (7390), (7401)
ULCER, DUODENUM, SURGERY, SCANDINAVIA (4203)

ULCER, DUODENUM, VAGOTOMY (5841)
ULCER, DUODENUM, XYLAMIDE (4193)
ULCER, EXPERIMENTAL, EXERTION, ANTI-ULCER AGENT (5830)*
ULCER, FISTULA, SURGERY (5031)
ULCER, GASTRECTOMY, VAGOTOMY (6660)
ULCER, GASTRIC ACID, MUCOSA, DEFENSE MECHANISM (5831)
ULCER, GASTRIC MUCOPROTEIN, DOG (6654)
ULCER, GASTRO-COLIC FISTULA (6994)
ULCER, GASTROSCOPY, ANESTHESIA, DIAGNOSIS (4953)
ULCER, HEALING-PROCESS, PATHOGENESIS (0269)*
ULCER, HEMORRHAGE, STENOSIS, PERFORATION (5034)
ULCER, HEMORRHAGE, TREATMENT (0695)
ULCER, INDOMETHACIN, RESERPINE, BENZYDAMINE (8132)*
ULCER, MOTILITY, SURGERY (5032)
ULCER, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
ULCER, PEPTIC, DUODENUM, SURGERY (1914)
ULCER, PEPTIC ULCER, DUMPING SYNDROME, VAGOTOMY (5024)
ULCER, PERFORATION, DUODENUM (4080)
ULCER, PERFORATION, MYOCARDIUM, CARDIA (5039)
ULCER, PHYTOBEZOAR (7411)
ULCER, PREGNANCY, PERFORATION (2648)
ULCER, PREVENTION, MUCOPOLYSACCHARIDE, SYNTHESIS, RAT (3345)
ULCER, PSYCHOSOMATIC, ANXIOSPASMOLYTIC (6665)
ULCER, RELAPSE, RECURRENCE, PROTRACTION (6664)
ULCER, RESECTION, MUCOSA (5811)
ULCER, RESTRAINT, RAT (0077)
ULCER, SECRETION (3409)
ULCER, SECRETION, ACID (3287)
ULCER, SMOKING, BODY FORM (4182)*
ULCER, SMOKING, DUODENUM (5029)
ULCER, STRESS, ATROPINE ADRENERGIC BLOCKERS, GANGLIONIC BLOCKERS, RAT (5824)*
ULCER, STRESS, MOVEMENT, BEHAVIOR, RAT (2631)*
ULCER, STRESS, TRAUMA, DUODENUM (5771)
ULCER, STRESS-INDUCED (0305)
ULCER, SURGERY (1920), (2600), (3356), (3402), (4198)
ULCER, SURGERY, STATISTICAL ANALYSIS (4209)
ULCER, SURGERY, VAGOTOMY (3401)
ULCER, TREATMENT (6670)
ULCER, TREATMENT, DUODENUM (4195)
ULCER, TREATMENT, ENDOSCOPY, RADIOLOGY (5854)
ULCER, VAGOTOMY (7392), (7404)
ULCER DEVELOPMENT, BIOCHEMICAL-CELLULAR-MORPHOLOGY (1022)*
ULCER SYNDROME, DUODENUM, SULPIRIDEX TREATMENT (3407)
ULCERATION, UROLOGICAL SURGERY (2647)
ULCERATIVE COLITIS, MORTALITY RATE, CORTICOSTEROID EFFECT (2762)*
ULTRASTRUCTURE, ATROPHIC GASTRITIS, PERNICIOUS ANEMIA (7320)*
ULTRASTRUCTURE, HORMONAL EFFECTS, MUCOSA, GASTRIN (1671)*
ULTRASTRUCTURE, ULCER, PITRESSIN (5764)*
UPPER, CARDIA, ESOPHAGOSCOPY (6543)
VAGOTOMY, ANTRECTOMY, DUODENAL ULCER SURGERY (3405)
VAGOTOMY, GASTRIC ANALYSIS, STASIS, GASTRIC ULCER, HEMORRHAGE (5687)
VAGOTOMY, HIATAL HERNIA (2557)
VAGOTOMY, HYPERTONIA, RADIOLOGY (1863)
VAGOTOMY, PYLOROPLASTY, SECRETION, MOTILITY, HEIDENHAIN POUCH SECRETION, RECURRENT ULCER (1667)*
VAGOTOMY, SUBDIAPHRAGMATIC (0346)
VAGOTOMY, SUPRAPYLORIC ANTRECTOMY, HEIDENHAIN POUCH SECRETION, DUODENAL ULCER (1901)*
VAGOTOMY, ULCER (4197)
VAGUS, MUCOSA, SURGERY (3354)
VAGUS, SECRETION (3355)
VARICES, LINTON-NACHLA TUBE, SENGSTAKEN-BLAKEMORE TUBE, CIRRHOTIC (2903)
VASOMOTOR RESPONSE, POLYMYXIN, PROTECTIVE EFFECT, THIOPROPERAZINE, TRANXENEMIC ACID, RAT (2378)
VILLOUS TUMOR, MORPHOLOGY, MALIGNANCY (8112)
VOLVULUS (0325)
VOLVULUS, RADIOLOGY, SURGERY (8120)
WALKER, OPERATION, ESOPHAGEAL VARIX, ANASTOMOSIS (2556)
WALL, BIOELECTRIC ACTIVITY, FOOD EFFECT (0051)
WALL, GASTROCUTANEOUS FISTULA, SURGERY (5799)
WALL, MUCOSA, ION TRANSPORT, ACID SECRETION (0030)*
WALL, OXYGEN TENSION, INTESTINE (7053)
XANTHOMA, ENDOSCOPY, LIPID CONCENTRATION (1078)
X-RAY DIAGNOSIS, DISEASE, WATER-SOLUBLE AGENT (3307)
X-RAY TELEVISION, MASS SURVEY, ROLL FILM (3269)*

STOMATITIS
  CORYNEBACTERIUM DIPTHERIAEX, NEONATE (3753)
STORAGE
  HEPATIC MICROSOMAL CYTOCHROMES, SUBSTRATE-INDUCED DIFFERENCE SPECTRA (3078)
  LIPID, GLYCOLIPID, LIVER, DISEASE (5411)*
STRATIGRAPHY
  TRANSVERSE AXIAL, ANATAMO-RADIOLOGIC CORRELATION, CHRONIC PANCREATITIS (2798)
STREPTOMYCIN
  VIBRIO-DEPENDENT, CHOLERA (3763)
STRESS
  ATROPINE, ULCER PRODUCTION, STOMACH, MECHANISMS, ADRENERGIC BLOCKERS, GANGLIONIC BLOCKERS, RAT (5824)*
  GASTRIC ULCER, MOVEMENT, BEHAVIOR, RAT (2631)*

POST-SURGICAL, ULCER, GASTRO-DUODENAL, ACUTE HEMORRHAGE (2632)*
SALMONELLA, EXCRETION, PIG (5357)
ULCER, GASTRIC, DUODENAL (7393)
ULCER, HEMORRHAGIC, GASTRODUODENAL (8135)
ULCER, STOMACH, DUODENUM (1142)

STRESS FACTOR
EPIDEMIOLOGY, ULCERATIVE COLITIS, REGIONAL ENTERITIS (3507)*
ULCERATIVE COLITIS, IRRITABLE BOWEL SYNDROME (1398)*

STRICTURE
COLON, ANUS, ANASTOMOSIS, SWENSON'S OPERATION (0436)
ESOPHAGUS, COMPLICATIONS (0259)
ESOPHAGUS, HIATAL HERNIA, DYSPHAGIA (2558)
ESOPHAGUS, PEPTIC, EPITHELIUM (3312)*
ESOPHAGUS, SHORT, SURGERY (2567)
ILEUM, CHERRY STONES, ISCHEMIA, PERFORATION (6679)
POSTOPERATIVE, BILE DUCT (4548)

STRING TEST
BLOOD (2525)

STRONGYLOIDOSIS
DIAGNOSIS, SMALL INTESTINE (4077)
STRONGYLOIDES STERCORALIS, CLINICAL EVALUATION (2268)
STRONGYLOIDES STERCORALIS, DIAGNOSIS TREATMENT (2262)

STRUCTURE
MITOCHONDRIA, ABSORPTIVE CELLS, JEJUNUM (7775)*
SMALL INTESTINE, NEWBORN, POLYVINYLPYRROLIDONE (7067)*

SUBMAXIMAL BETAZOLE TEST
INDICATION, GASTRIC AND DUODENAL ULCER (0181)*

SUBUNIT
ACTIVE, PREPARATION, PROPERTIES, RIBOSOMES, LIVER, RAT (1667)

SUCTION BIOPSY
GASTRIC MUCOSA EXCISION (0214)

SUGAR
ALDOPENTOSE, JEJUNUM, TRANSPORT, RAT (3097)*
A-METHYL-D-GLUCOSIDE, INTESTINAL TRANSPORT, VITAMIN E (6348)*
D-GLUCOSE, D-RIBOSE, GLUCOSE UPTAKE, PANCREATECTOMIZED, DOG, INSULIN INFUSION (0813)
DISACCHARIDE, INTOLERANCE, DIARRHEA (4647)
FRUCTOSE, ALDOLASE SPLITTING DEFECT, LIVER (4259)
INHIBITOR, D-GALACTOSE (2436)
METABOLISM, HEPATIC FUNCTION, PROGESTERONE DERIVATIVE EFFECT, UTERINE ADENOCARCINOMA (3578)
MONOSACCHARIDE, INTESTINAL TRANSPORT, FASTING, DIABETES (8559)*
POLYSACCHARIDE, ISOLATION, LIVER CAPSULE, PIG (2303)
SMALL INTESTINE, METABOLISM (3237)
STRUCTURE, ACTIVE TRANSPORT, INTESTINE (7834)*
SUCROSE, ABSORPTION, MONOSACCHARIDE (7850)
TRANSPORT, SODIUM SENSITIVITY, INTESTINE (5478)*

SULFANOMIDE
PANCREATITIS, PANCREAS (2030)
TROPICAL SPRUE, TREATMENT (0412)*

SULFATION
GALLBLADDER, STOMACH, PANCREAS, SECRETION (2481)*

SULFOBROMOPHTHALEIN
BILE, EXCRETION, SHEEP (1771)
BILE SALTS, LIVER PERFUSION (2411)*
BILIARY EXCRETION, PROTEIN-FREE DIET, RAT (0821)*
CLEARANCE, HEPATIC FUNCTION, AGED (1821)
GALLBLADDER, BILE (4089)
INTOLERANCE, DIAGNOSTICS, HEPATOLOGY (8788)
LIVER DISEASE, RETENTION (3545)*
METABOLISM, EXCRETION, GLUTATHIONE (7119)*
METABOLISM, SCINTOGRAPHY, JAUNDICE, DIAGNOSIS (0224)
RISING SLOPE OF EXCRETION, DIAGNOSTIC UTILITY, PHYSIOPATHOLOGICAL SIGNIFICANCE (2061)
STORAGE, TRANSPORT, LIVER, DIABETES MELLITUS, CHRONIC ALCOHOLISM (2065)
SULFOBROMOPHTHALEIN, BILIARY EXCRETION, METABOLISM, BENZIOBARONE (1765)
UPTAKE, KINETICS, DAMAGED HEPATOCYTES (0109)

SURGERY
ABDOMEN, AORTOGRAPHY (5359)
ABDOMEN, DIAGNOSIS (3738)
ABDOMINAL, HEMORRHAGE, PERITONITIS, ADHESIONS (5337)
ABDOMINAL, PERITONITIS, ILEUS, PUERPERIUM (6702)
ABDOMINAL, POSITIVE NITROGEN BALANCE (2967)
ABDOMEN, PREMATURE CORRECTIVE INTERVENTION (9246)
ABDOMINAL, TRAUMA, DUODENAL INJURY (6541)
ABDOMINAL AORTA, ILIAC ARTERY, AORTOINTESTINAL FISTULAS (1938)
ABDOMINAL TRAUMA, LAPAROSCOPY, PERITONEAL HEMORRHAGE, HEMATOMA (4909)
ABDOMINOPERINEAL AND ANTERIOR RESECTIONS, ADENOCARCINOMA, RECTAL AMPULLA, RECTOSIGMOID (1263)
ACHALASIA, ESOPHAGUS, CARDIA (4972)
ACUTE APPENDICITIS, GAS GANGRENE, PERFORATION, DRAINAGE (5097)
ACUTE CHOLECYSTITIS, EARLY AND DELAYED SURGERY (7666)
ACUTE CHOLECYSTITIS, PANCREATIC ENZYMES, LIVER BIOPSY, JAUNDICE (5324)
ACUTE INTESTINAL OBSTRUCTION, CIRCULATION, RESPIRATORY INSUFFICIENCY, PNEUMONIA, SUPPURATION (2963)
ACUTE PANCREATITIS (2797), (3511)
ACUTE PANCREATITIS, EDEMA, NECROSIS (8257)
ADHESIVE INTESTINAL OBSTRUCTION, POSTOPERATIVE (3727)

ADRENAL, CHOLECYSTITIS, OBSTRUCTIVE JAUNDICE (2910)
AGANGLIAR MEGACOLON, NONSUTURE TECHNIQUE (0437)
ALCOHOLIC PANCREATITIS (4355)
ANAL FISTULA, FUNCTIONAL SPHINCTEROTOMY, CONTINENCE FUNCTION (8965)
ANATOMY, PANCREAS, FASCIA, PERITONEUM, SPLEEN (3090)
ANESTHESIA, LIVER (5244)
ANEURYSM, CAROTID ARTERY, ULCER, CIRCULATION (2962)
ANOMALY, PANCREAS, ULCER, DIAGNOSIS, STENOSIS (2782)
ANORECTAL ANOMALIES, CONGENITAL (6719)
ANTERIOR GASTROPLEXY, HIATUS HERNIA (1847)
ANTROPYLORECTOMY, VAGOTOMY, PEPTIC ULCER (2654)
ANUS, DIVERTICULITIS, DIVERTICULOSIS (2727)
ANUS, FISSURE (3484)
ANUS, GRACILIS ANOPLASTY, INCONTINENCE (5911)
ANUS, MELANOMA (1994)
ANUS, PRURITIS, GRAFT (2726)
ANUS, RECTUM, ANATOMY (4729)
ANUS, RECTUM, INJURY (4269)
AORTO_ILIAC-ATHEROSCLEROTIC LESION, NONVASCULAR INTRAABDOMINAL LESION, MANAGEMENT (3735)
APPENDECTOMY, APPENDICITIS, LYMPHOCYTE COUNT (6721)
APPENDECTOMY, LEAD POISONING, FISTULA (3500)
APPENDECTOMY, URETHRAL RUPTURE (8967)
APPENDICITIS, COLON (3487)
APPENDICITIS, DIVERTICULITIS, COLON (5103)
APPENDICITIS, GERIATRICS (1996)
APPENDIX, ENDOMETRIOSIS (5104)
APPENDIX, PERFORATION, RADIOLOGY (2713)
BILE DUCT, ATRESIA, LIVER (4540)
BILE DUCT, DUODENAL CATHETERIZATION (3673)
BILE DUCT, PERFORATION, NEONATE, CHOLANGIOGRAPHY (6148)
BILIARY AND DIGESTIVE SYSTEM, POSTOPERATIVE K MANAGEMENT, HEART (3683)
BILIARY TRACT, ATRESIA (4543)
BILIARY TRACT, BIOLOGICAL GLUE (5312)
BILIARY TRACT, CALCULI (3688)
BILIARY TRACT, CHOLECYSTECTOMY, CHOLEDOCHOTOMY, CHOLEDOCHODUODENOSTOMY, PAPILLOTOMY (2941)
BILIARY TRACT, CYSTS (4549)
BILIARY TRACT, GALLBLADDER, LIVER (5308)
BILIARY TRACT, LIVER, VAGOTOMY (0671)
BILIARY TRACT, PANCREATIC INVOLVEMENT, MORTALITY RATE (9181)
BILIARY TRACT, PREOPERATIVE, GERIATRICS (1490)
BILLROTH I, STOMACH, DUODENUM, ULCER (6626)
BIOPSY, LIVER, HEPATITIS (4078)
BLEEDING ULCER, DUODENUM, NEONATE (4200)
BOWEL, ANTIBIOTIC (3745)
BUDD-CHIARI SYNDROME, THROMBOPHLEBITIS (6213)
CANCER, ANUS, RECTUM, COLON (4193)
CANCER, ESOPHAGUS (1001)
CANCER, ESOPHAGUS, DRUG EFFECT, RADIOLOGY (2553)
CANCER, ESOPHAGUS, RADIOLOGY, BRONCHOESOPHAGEAL INVESTIGATION (2551)
CANCER, ESOPHAGUS, TREATMENT (1002)
CANCER, RECTUM, PRIMARY SUTURE (8970)
CANCER, RECTUM DIAGNOSIS (2738)
CARCINOMA, ARGENTAFFIN CELL, RECTUM (5912)
CARCINOMA, COLON (2719)
CARCINOMA, DUODENAL BULB (5800)
CARCINOMA, ESOPHAGUS, DYSPHAGIA (0992)
CARCINOMA, ESOPHAGUS, STOMACH (4117)
CARCINOMA, RECTOSIGMOID, UROGENITAL TRACT (1232)
CARCINOMA, RECTUM, POSTOPERATIVE (2739)
CARDIA, OBSTRUCTION (7299)
CARDIA COMPETENCE, REFLUX ESOPHAGITIS (7306)
CARDIAC ACHALASIA, STOMACH DILATATION, MEGA-ESOPHAGUS, HYPERTONIC PYLORUS, PYLOROPLASTY, CARDIOMYOTOMY, CHILDREN (4963)
CECAL ULCER, CECUM (5902)
CECUM, CANCER (3483)
CERVICAL ESOPHAGUS, RECONSTRUCTION (7305)
CHILDS-PHILLIPS OPERATION, MESENTERIC PLICATION, POSTOPERATIVE ADHESIONS (2212)
CHOLANGIOGRAPHY, BILE DUCT (1366)
CHOLANGIOGRAPHY, CONTRAINDICATIONS (4048)
CHOLECYSTECTOMY, MORTALITY, RADIOLOGY (9183)
CHOLECYSTITIS, ACUTE (4555)
CHOLECYSTITIS, GALLBLADDER (2925)
CHOLECYSTOSTOMY, ACUTE CHOLECYSTITIS, GALLBLADDER NECROSIS (7673)
CHOLEDOCHODUODENOSTOMY (7667)
CHOLEDOCHODUODENOSTOMY, TRANSDUODENAL PAPILLOTOMY BILE FLOW DISORDERS (2906)•
CHOLEDOCHOTOMY, THORACIC FISTULA, DIAPHRAGM (9186)
CHOLELITHIASIS (3671)
CHOLELITHIASIS, CHOLECYSTECTOMY, CHOLEDOCHOTOMY (6912)
CHOLELITHIASIS, JAUNDICE (1479)
CHRONIC DUODENAL ULCER, CHILDREN (5837)
CHRONIC PANCREATITIS, BILIARY DRAINAGE, SPHINCTEROTOMY (6758)
CHRONIC PANCREATITIS, ENZYME (2788)
CHRONIC PANCREATITIS, PANCREATICOJEJUNOSTOMY, CANCER (6746)
CHRONIC PANCREATITIS, SPLANCHNICECTOMY PANCREATIC FIBROSIS (6752)
CHRONIC PANCREATITIS, STATISTICS, GENEVA (9022)
CIRRHOSIS, ESOPHAGUS, VARICES (4518)
CIRRHOSIS, METABOLISM, WATER, ELECTROLYTE (7646)

CIRRHOSIS, PORTACAVAL ANASTOMOSIS, ADHESIONS (6887)
CIRRHOSIS, SODIUM, POTASSIUM (7645)
CLOSED TRAUMA, ABDOMEN, PANCREAS RUPTURE, ANTIBIOTIC (2783)
COLON, ABSCESS, HEALING (5101)
COLON, ADENOMA, RESECTION (2710)
COLON, ANASTOMOSIS, PERITONITIS (2708)
COLON, ANTIBIOTIC (2731)
COLON, ANTIBIOTIC, CARCINOMA (5118)
COLON, CANCER, PROGNOSIS (3475)
COLON, CARCINOMA, GERIATRICS (1981)
COLON, COLOSTOMY, ILEOSTOMY (2724)
COLON, MYOTOMY, MANOMETRY, DIVERTICULUM (3482)
COLON, PENICILLIN, BACTERIA (4881)
COLON, PERFORATED DIVERTICULITIS (4288)
COLON, RECTUM, NEOPLASM (1258)
COLON, RECTUM, TRAUMATIC INJURY (3491)
COLON, SIGMOID VOLVULUS (3470)
COLON, VOLVULUS (2706)
COLON TRANSPLANT, ESOPHAGEAL REPAIR, ESOPHAGEAL ATRESIA (8811)
COLONIC FISTULA, URINARY FISTULA, HIGH INTESTINAL FISTULA (2741)
COLOSTOMY, BOWEL FUNCTION, DIET (8946)
COLOSTOMY AVOIDANCE, COLONIC OBSTRUCTION, NON-OPERABLE CARCINOMA (3502)
COMMON BILE DUCT, LITHIASIS (6152)
COMMON BILE DUCT REPLACEMENT, SILICONE RUBBER (9171)
COMPLEX RECTAL HERNIA, DIAGNOSIS (7462)
COMPLICATIONS, ASCARIASIS, CHILDREN (7761)
COMPLICATIONS, BOWEL GAS EXPLOSION (7704)
COMPLICATIONS, STOMACH, GERIATRICS (7367)
CONGENITAL, OBSTRUCTION, NEWBORN INFANTS, ENTEROANASTOMOSIS (0382)
CONGENITAL ICTERUS, CONTROL (4429)
CONGENITAL JEJUNAL DIAPHRAGM, FETUS (4221)
CONSTIPATION, COLON, DOLICHOCOLON (3757)
CONTINENCE, ANAL, RECTAL, PEDIATRIC (8972)
CRITICAL STUDY, TREATMENT OF PORTAL HYPERTENSION (2056)
CROHN,S DISEASE, FISTULA, EVALUATION (2677)
CROHN,S DISEASE, TERMINAL ILEITIS (4237)
DIAGNOSIS, CRURAL HERNIA, RESECTION (2743)
DIAPHRAGMATIC HERNIA, BOCHDALEK (6210)
DISTAL PANCREATECTOMY, SPLENECTOMY, TRAUMATIC PANCREAS TRANSECTION (4339)
DIVERTICULITIS, CARCINOMA, COLECTOMY, COLOSTOMY (6696)
DOGS, ARTIFICIAL SPHINCTER, INCONTINENCE (6496)
DRAINAGE, ACUTE POSTVAGOTOMY, GASTRIC DILATION, DUODENAL ULCERS (1905)
DUMPING SYNDROME DETECTION, PREOPERATIVE TEST (3371)
DUODENAL DUPLICATION, CYSTO-JEJUNOSTOMY (5777)
DUODENAL STUMP CLOSURE, OX, FASCIA (7358)
DUODENAL ULCER (2651), (7389)
DUODENAL ULCER, GASTRIC SECRETION (5845)
DUODENUM, CHOLEDOCHAL SPHINCTER, GALLBLADDER (4544)
DUODENUM, SMALL INTESTINE (1864)
DUODENUM, SPHINCTEROTOMY, BIOPSY (3270)*
DUODENUM, STENOSIS, RADIOLOGY (4151)
DUODENUM, ULCER (4196)
DUODENUM, ULCER, VAGOTOMY (1906)
DYSPHAGIA, ESOPHAGEAL DILATATION, HELLER OPERATION (6594)
EARLY, SMALL INTESTINE, OBSTRUCTION (5876)
ECHINOCOCCOSIS, ENLARGED LIVER, MARSUPIALIZATION (4666)
ELONGATION OF ESOPHAGUS, DELAYED END-TO-END ANASTOMOSIS, ESOPHAGEAL ATRESIA (8821)
EMERGENCY, COLON (4275)
EMERGENCY, GASTRODUODENAL HEMORRHAGE (4213)
EMERGENCY, GASTROINTESTINAL, NEWBORN (4602)
EMERGENCY PANCREATECTOMY, ACUTE PANCREATITIS, ANATOMOPATHOLOGY (9028)
ENTERECTOMY, GASTRIC BILIARY FISTULA (7873)
EPIDERMOID CARCINOMA, ESOPHAGUS (4104)
ERROR, DUODENAL ULCER, PROGNOSIS, VAGOTOMY-RESECTION, HISTAMINE STIMULATION (5036)
ESOPHAGEAL, STOMACH TUBE (5732)*
ESOPHAGEAL ACHALASIA, PH, REFLUX (5758)
ESOPHAGEAL ACHALASIA, RADIOGRAPHY, INDICATIONS (8822)
ESOPHAGEAL ATRESIA, ANESTHESIA (4120)
ESOPHAGEAL DYSRHYTHMIAS (1845)
ESOPHAGEAL GASTRIC HERNIA, DIAGNOSIS, MANOMETRY (5718)
ESOPHAGEAL HIATUS HERNIA (5747)
ESOPHAGEAL PROSTHESIS, MALIGNANT ESOPHAGEAL FISTULA (8071)
ESOPHAGEAL RECONSTRUCTION, COLON INTERPOSITION (3329)
ESOPHAGEAL RECONSTRUCTION, GASTRIC TUBE, CHILDREN (5734)*
ESOPHAGEAL REPAIR, COLON TRANSPLANT, POSTSURGICAL CARE (8826)
ESOPHAGEAL REPAIR, CONGENITAL ATRESIA, (8794)
ESOPHAGEAL REPLACEMENT, LEFT COLON (7311)
ESOPHAGEAL REPLACEMENT, MALIGNANT DISEASE (5757)
ESOPHAGEAL SUBSTITUTION, COLON TRANSPLANT, INFANTS, CHILDREN (8793)
ESOPHAGITIS, TOTAL BYPASS, REVERSED GASTRIC TUBE OPERATION (8082)
ESOPHAGOBRONCHIAL FISTULA, DYSPHAGIA, DIVERTICULA (6590)
ESOPHAGOGASTRIC RECONSTRUCTION, GASTRIC MUCOSA, ANASTOMOSIS (6589)

ESOPHAGOGASTRO-ANASTOMOSIS, ESOPHAGITIS, CANCER, REFLUX (2552)
ESOPHAGO-ILEO-COLONPLASTY, CICATRICIAL STENOSIS (3747)
ESOPHAGOSTOMOSIS, COLON, BLOOD (4662)•
ESOPHAGOSTOMY, TRANSVERSE COLON TRANSPLANT, ESOPHAGEAL ATRESIA (8812)
ESOPHAGUS, ACHALASIA (3333)
ESOPHAGUS, ACHALASIA, DYSPHAGIA, CARDIOMYOTOMY, DILATATION (5760)
ESOPHAGUS, ACHALASIA, ESOPHAGITIS (2578)
ESOPHAGUS, ATRESIA, NEONATE (5749)
ESOPHAGUS, ATRESIA, STRICTURE (2564)
ESOPHAGUS, CANCER (4108)
ESOPHAGUS, ESOPHAGECTOMY (0250)
ESOPHAGUS, FISTULA, ATRESIA (4971)
ESOPHAGUS, HIATAL HERNIA, ANEMIA (4091)•
ESOPHAGUS, HOMOGRAFT (7298)
ESOPHAGUS, MUCOSA (3316)
ESOPHAGUS, RUPTURE (3332)
ESOPHAGUS, STENOSIS, CARCINOMA, PERFORATION (4965)
ESOPHAGUS, VARICES, VAGOTOMY (3334)
EVISCERATING HERNIA, SUTURE SINUS (6173)
EXPLORATORY, LIVER, JAUNDICE (1412)
EXTRAHEPATIC BILE DUCTS, CHOLELITHIASIS , MORTALITY RATE (9182)
EXTRAHEPATIC BILIARY SYSTEM, ANATOMY (3847)
EXTRAHEPATIC BILIARY TRACT, OBSTRUCTION (7668)
EXTRAPLEURAL TRANSDIAPHRAGMATIC, INTRAHEPATIC FOREIGN BODIES (7589)
FISTULA, ILEUS, GALLSTONE (2929)
44 45N+L ULCER, PERFORATION, HEMORRHAGE (2636)
FUNDOPLICATION, PEPTIC AND REFLUX ESOPHAGITIS, ENDOSCOPY (8798)
GALLBLADDER, ACUTE CHOLECYSTITIS (6141), (6142)
GALLBLADDER, BILE DUCT, HEMATOMA, DUODENUM (5813)
GALLBLADDER, CHOLECYSTITIS (2169)
GALLBLADDER, CHOLEDOCHODUODONOSTOMY (4546)
GALLBLADDER, CHOLELITHIASIS, DUODENUM, ULCER (7669)
GALLBLADDER, DUODENUM, CHOLEDOCHODUODENOSTOMY (2347)
GALLBLADDER, POLYARTERITIS NODOSA (3686)
GALLBLADDER, VOLVULUS, NON-LITHIASIC CHOLECYSTOPATHY (6147)
GASTRECTOMY, AMINO ACID, CANCER (2606)
GASTRECTOMY, DUMPING SYNDROME, ULCER RESECTION, MALABSORPTION (6636)
GASTRECTOMY, DUODENAL ULCER, CHOLEDOCHOLITHIASIS (9199)
GASTRECTOMY, STOMACH (1877)
GASTRIC, BEZOAR FORMATION, PATHOGENESIS, TREATMENT (8855)
GASTRIC, DUODENAL, ULCER, CANCER (2627)
GASTRIC, ESOPHAGEAL CARCINOMA SEQUEL (4113)
GASTRIC, GERIATRICS (1059)
GASTRIC, INSULIN, HYPOBLYCEMIA, CARBOHYDRATES (1028)
GASTRIC, INTRAGASTRIC INVAGINATION (2624)
GASTRIC ANTRUM, ATRESIA (8097)
GASTRIC BURNS, TREATMENT (7335)
GASTRIC CARCINOMA, MORPHOLOGY, LIFE EXPECTANCY (8127)
GASTRIC CELLS, GASTRITIS (4157)
GASTRIC INTUBATION, HIATAL HERNIA, ESOPHAGEAL STENOSIS (1011)
GASTRIC RESECTION, ARTERIO-PORTAL FISTULA, PHYSIOPATHOLOGY (8850)
GASTRIC RESECTION, DUCTS, EXTRAHEPATIC PANCREATIC DUCTS (8126)
GASTRIC RESECTION, DUODENAL ULCER, MORTALITY RATE (8884)
GASTRIC RESECTION, GASTROENTEROSTOMY, MALIGNANT ULCER (7372)
GASTRIC RESECTION, HEMORRHAGE, ULCER (2598)
GASTRIC ULCER, DUODENAL ULCER, OPISTHORCHOSIS, DIAGNOSIS, CHOLECYSTITIS (3009)
GASTRIC ULCER, HEMORRHAGE, HILUS LIENIS (2637)
GASTRIC ULCER, PARENTERAL NUTRITION (7407)
GASTRIC ULCER, STATISTICAL ANALYSIS (4209)
GASTRIC VAGOTOMY, CARDIAL SPASM, ESOPHAGEAL ENLARGEMENT (8858)
GASTRODUODENAL HEMORRHAGE, GASTRIC RESECTION, TREATMENT (1053)
GASTRODUODENAL RESECTION, GASTROENTEROANASTOMOSIS, COLONIC STENOSIS (8856)
GASTRODUODENAL ULCER (3406)
GASTRODUODENAL ULCER, GASTRIC SECRETION (3396)
GASTROENTEROSTOMY (3356)
GASTROENTEROSTOMY, VAGOTOMY, DUODENAL ULCER (6663)
GASTROESOPHAGEAL REFLUX, GASTROPLEXIA, HIATAL HERNIA (8818)
GASTROINTESTINAL, CALCIUM, CALORIC DEFICIENCY (1088)
GASTROINTESTINAL, FLUID LOSS, POSTOPERATIVE (9215)
GASTROINTESTINAL, SEPTICEMIA (2229)
GASTROINTESTINAL REVERSAL, GASTROINTESTINAL INSUFFICIENCY (1155)
GASTROINTESTINAL REVERSAL, TECHNIQUES ADVANTAGES, COMPLICATIONS (1155)
GASTROINTESTINAL TRACT, ADVANCES (5801)
GASTROINTESTINAL TRACT, LIPID METABOLISM (1156)
GASTROINTESTINAL TRACT, NEONATE (6958)
GASTROINTESTINAL TRACT, SUTURING APPARATUS (3731)
GASTROJEJUNAL AUTOPLASTY, JEJUNAL GRAFT, SECRETION (7376)
GASTROJEJUNOPLASTY, INTESTINAL GRAFT, GASTRIC STUMP (7338)
GASTROPEXY, HIATAL HERNIA, DELAYED RESULTS (8061)

ASTROSCHISIS, GASTROSTOMY, LAPAROTOMY, (2954)
ASTROSTOMY, TEMPORARY (8107)
ASTROSTOMY, TUBE, GASTRIC DECOMPRESSION (2612)
ENTAMYCIN, STERILIZATION, COLONIC FLORA, INTESTINAL GERMS (5941)
LOVES, POWDER, STARCH GRANULOMATOUS PERITONITIS (8421)•
ALOTHANE, HEPATITIS (3612)
EART, ENZYME ACTIVITY, LIVER DAMAGE (4070)
EART, LIVER INJURY (4470)
ELLER'S OPERATION, IDIOPATHIC MEGA-ESOPHAGUS, MORTALITY RATE (8062)
ELLER'S TECHNIQUE, MEGA- ESOPHAGUS, CHILDREN (8795)
EMIGASTRECTOMY, VAGOTOMY, ULCER, DUMPING SYNDROME (7353)
EMORRHAGE, CANCER, ULCER (5372)
EMORRHAGE, STOMACH, ULCER (3288)
EMORRHOIDECTOMY, IMPROVED TECHNIQUES (8955)
EMORRHOIDS, DIATHERMIC LOOP, ANUS (2725)
EPATECTOMY, LIVER (2044)
EPATECTOMY, MITOSIS (4368)•
EPATIC, MALIGNANCY, INJURY (9079)
EPATIC CIRRHOSIS, ASCITES (2896)
EPATIC CIRRHOSIS, LIVER HYDROLYSATE, ANTITOXIC FACTOR, ESOPHAGEAL VARICES, SERUM PROTEIN FRACTION (2905)
EPATIC ENCEPHALOPATHY (6897)
EPATIC FAILURE, TREATMENT (6023)
ERNIA, BOWEL, FORAMEN OF WINSLOW (3429)
IATAL HERNIA, ADULT (4118)
IATAL HERNIA, DYSPHAGIA, PULMONARY SYMPTOMS, RADIOLOGY, ANTISPASMOTICS, REFLUX, PEPTIC ULCER, DILATATION (5738)
IATAL HERNIA, GASTROPLEGIA, TREATMENT (1066)
IATAL HERNIA, RADIOLOGY (5701)
IATAL HERNIA, VAGOTOMY (2557)
IATUS HERNIA (6584)
IATUS HERNIA, HYPOCHROMIC ANEMIA, THROMBOSIS, ULCER (6595)
ILL SUTURE, HIATAL HERNIA (5745)
ODGKIN'S DISEASE, ABDOMEN, DIAGNOSIS (4911)
YDATID CYST, LIVER, BILIARY TRACT, CHOLANGIOGRAPHY, ODDI'S SPHINCTER, PARASITES (5401)
ATROGENESIS, GASTROINTESTINAL TRACT, ANASTOMOSIS, OBSTRUCTION, ULCER (2959)
LEOSTOMY, LONG-TERM REHABILITATION (2679)
LEUM, ANTIBODY (2311)
LEUM, MUCOSA, COLON, DUODENUM (5045)
LEUS, AGED PATIENTS, CARCINOMA, PERFORATION (6950)
NTESTINAL OCCLUSION, ABSCESS, STASIS, ADHESIONS (5334)
NTESTINE, ANTISEPSIS (6246)
NTESTINE, END-TO-END SUTURE (7746)
INTESTINE, ENTEROPTOSIS, OCCLUSION (5061)
INTESTINE, ISCHEMIA, MALABSORPTION (5086)
INTESTINE, NUTRITION, RESECTION, NEONATE (4231)
INTESTINE, POSTOPERATIVE FISTULA, ACUTE OCCLUSION (6679)
ISLET CELL TUMOR, HEMIPLEGIA, HYPOGLYCEMIC COMA, ULCER, DIARRHEA (5952)
JEJUNOCOLOSTOMY, OBESITY (3428)
JEJUNOILEAL SHUNT, OBESITY, VITAMIN A, VITAMIN C (5859)
JEJUNUM (5046)
JEJUNUM INTERPOSITION, PEPTIC ESOPHAGITIS, CARDIO SPASM (7296)•
JUVENILE GASTROINTESTINAL POLYPOSIS, CONGENITAL (6186)
LAPAROTOMY, ACUTE, MOTILITY (6977)
LAPAROTOMY, BILIRUBIN, ABSORPTION, GALLBLADDER, TECHNIQUE (3101)•
LARGE INTESTINE, DUHAMEL-HADDAD OPERATION (2009)
LARYNGOTRACHEAL-ESOPHAGEAL CLEFT, CONGENITAL ANOMALY (3324)
LATERAL DUODENAL FISTULA, DUODENOJEJUNOSTOMY (5774)
LIGATION, PORTAL HYPERTENSION, SHUNT OPERATION, THROMBOSIS (6812)
LIVER, ABSCESS (5208)
LIVER, AMEBIC ABSCESS (7770)
LIVER, ANASTOMOSIS, CIRRHOSIS (4616)
LIVER, ANATOMY (2057), (3848), (7806)
LIVER, BILE DUCT, EXPLORATION (4532)
LIVER, BILE DUCTS, DIETARY INDICATIONS CHILDREN (9064)
LIVER, CIRRHOSIS, ADRENALECTOMY (6797)
LIVER, CIRRHOSIS, HEMORRHAGE (6909)
LIVER, GRAFT, TRANSPLANT (3219)
LIVER, HEMATOMA (3582)
LIVER, HYPERTENSION, HEMORRHAGE (4618)
LIVER, JAUNDICE, CHOLESTASIS, HEPATITIS (5179)
LIVER, LYMPH, TRANSPLANT, DOG (6006)
LIVER, NUTRIENT DEMANDS (6047)
LIVER, PARTIAL HEPATECTOMY (1377)
LIVER, PORTAL HYPERTENSION, CHILDREN (4397)
LIVER, PULMONARY TUBERCULOSIS (1372)
LIVER, RADIOLOGY, PORTAL HYPERTENSION (5298)
LIVER, RESECTION, HEMOSTASIS (3584)
LIVER, SCINTIGRAPHIC APPEARANCE (4381)
LIVER, SIDE-TO-END PORTACAVAL SHUNT (2153)
LIVER, THYMECTOMY (3984)
LIVER, TRANSPLANT (3212)
LIVER, TRANSPLANTATION, RETROPERITONEAL SPACE (3224)
LIVER, TRAUMA (6049)
LIVER, TRAUMA, HEPARIN (6073)
LIVER, TUMOR (4385)
LIVER, TUMOR, MALIGNANT (1382)
LIVER, TUMOR, TRAUMA (2046)
LIVER DISEASE, BILIARY TRACT, DIAGNOSIS (4393)

LIVER ECHINOCOCCUS, LONG-RANGE RESULTS (4679)
LIVER GRAFT, FULMINATING HEPATITIS, HISTOLOGICAL CHANGES, HUMAN, BABOON (6069)
LIVER INJURY (6786)
LIVER TUMOR, RESECTION (4377)
LOOP INVERSION, SMALL INTESTINE, TECHNIQUES (3431)
LUMBAR HERNIA, PELVIC COLON, REPAIR (6722)
LYMPHOSARCOMA, SMALL INTESTINE, CHILDREN (4229)
MALIGNANT SECONDARY, HEPATIC DEPOSIT (2050)
MASSIVE GASTRECTOMY, ESOPHAGEAL JEJUNODUODENOPLASTY, CANCER (8852)
MECKEL'S DIVERTICULUM, HEMORRHAGE, GASTRIC MUCOSA, SHOCK (5064)
MECKEL'S DIVERTICULUM, PERFORATION, INTESTINAL OBSTRUCTION, PERITONITIS, NEWBORN INFANT (5050)
MECKEL'S DIVERTICULUM, PERITONITIS (1943)
MECKEL'S DIVERTICULUM, RADIOLGOY (5051)
MEGACOLON, CONGENITAL, INTESTINAL OBSTRUCTION (1249)
MEGACOLON, HEMICOLECTOMY, ILEOPROCTOSTOMY (6723)
MEGACOLON, INFANT (8954)
MEGA-ESOPHAGUS, IDIOPATHIC (1010)
MESENTERIC CYST, ENUCLEATION, BOWEL RESECTION, MARSUPIALIZATION (6209)
MULTIPLE POLYPOSIS, CANCER, RETAINED BOWEL SEGMENT (3472)
NEONATAL, DUODENAL OCCLUSION, GASTROSTOMY (6640)
OBSTRUCTION, INTESTINE, GERIATRICS (4630)
OBSTRUCTIVE JAUNDICE, LIVER FUNCTION (7674)
OBSTRUCTIVE JAUNDICE, PANCREAS, METASTASES, LAPAROTOMY, CHOLANGIOGRAPHY (4941)
OBSTRUCTIVE JAUNDICE, SURGERY, MORTALITY (6145)
OCCLUSION, SMALL INTESTINE (2208)
OPEN-HEART, JAUNDICE, ANESTHESIA (4390)
OPEN HEART, JAUNDICE, CARDIOPULMONARY BYPASS (2072)
OPISTHORCHOSIS, LIVER, PERITONITIS (7754)
PALLIATIVE, CARCINOMA, PANCREAS (4340)
PANCREAS (0506)
PANCREAS, BIOPSY (4033)
PANCREAS, CRYOSURGERY, AMYLASE (3519)
PANCREAS, IMPLANTATION (8234)
PANCREAS, JUICE COLLECTION (4772)
PANCREAS, LITHIASIS, PANCREATITIS (3537)
PANCREAS, PALPATION (4903)
PANCREAS, RUPTURE, HEMORRHAGE, WIRSUNG CANAL (6743)
PANCREATECTOMY, PANCREATITIS (4357)
PANCREATIC CARCINOMA, PANCREATODUODENECTOMY, BYPASS OPERATIONS (5953)
PANCREATIC FISTULA, POSTOPERATIVE MANAGEMENT (3518)
PANCREATIC HETEROTOPIA, INSULAR CARCINOMA, GASTRIC TUMORS (6742)
PANCREATIC LITHIASIS, RADIOLOGICAL EXAMINATION, AMYLASE, LIPASE, GLUCOSE TOLERANCE, HEMIPANCREATECTOMY (5962)
PANCREATIC PSEUDOCYSTS, DIABETES (6745)
PANCREATICODUODENAL RESECTION, TUMOR PROPHYLAXIS (9004)
PANCREATICO-JEJUNAL ANASTOMOSIS, CHRONIC PANCREATITIS, PIG (9026)
PANCREATITIS, ACUTE, CHOLELITHIASIS, POST-OPERATIVE (6754)
PANCREATITIS, STOOL ANALYSIS, PANCRE ZYMIN-SECRETIN TEST (6757)
PANCREATITIS, TREATMENT (3532)
PANCREATODUODENECTOMY, COMPLICATION, JEJUNOJEJUNAL INTUSSUSCEPTION (586
PANCREATODUODENECTOMY, JEJUNOJEJUNAL INTUSSUSCEPTION (5866)
PAPILLA DUODENI MAJOR (3386)
PARTIAL GASTRECTOMY, GASTRIC FUNCTION MORPHOLOGY, ULCER (7391)
PARTIAL GASTRECTOMY, GASTRIC NEURINOM HISTOPATHOLOGY (8842)
PARTIAL GASTRECTOMY, GASTRIC ULCER, PATHOGENESIS (8870)
PARTIAL HEPATECTOMY, LIVER REGENERATION, ELECTROPHORETIC PROTEIN PATTERNS, DOG (8680)
PELVIC FISTULAE, NONSUTURE REPAIR, COLON, RECTUM (7477)
PEPTIC JEJUNAL, ULCER, PERFORATION, ANASTOMOSIS, INFECTION, GASTRIC RESECTION (5062)
PEPTIC ULCER, DUODENUM, VAGOTOMY, STOMACH ACID SECRETION (1114)•
PEPTIC ULCER, LACTOSE MALABSORPTION, INTESTINAL LACTASE, STEATORRHEA (1113)•
PEPTIC ULCER, MANAGEMENT (3399)
PEPTIC ULCER, RECURRENCE (1138)
PEPTIC, ULCER, STOMACH DUODENUM (1914)
PORTACAVAL SHUNT, CIRRHOSIS (5297)
PORTACAVAL SHUNT, PORTAL HYPERTENSION LIVER CIRRHOSIS (9085)
PORTAL HYPERTENSION, ETIOLOGY, CHILDREN (9055)
PORTAL HYPERTENSION, SHUNTING, ESOPHAGUS (3752)
POSTOPERATIVE DRAINAGE, AUTOMATIC PUMP, GASTROINTESTINAL, ASPIRATION (6985)
POSTOPERATIVE OCCLUSION, ELECTROLYTE, HEMODYNAMICS, DISTENSION (6674)
PROCTOCOLITIS, COLITIS, ISCHEMIA (4310)
PROXIMAL SELECTIVE VAGOTOMY (3722)
PYLORIC STENOSIS, VAGOTOMY (3353)
PYLOROMYOTOMY, HYPERTROPHY, PYLORIC STENOSIS, CONGENITAL (5770)
PYLOROPLASTY, CHOLEDOCHOJEJUNOSTOMY, CHOLEDOCHODUODENAL FISTULA (9177)
PYLOROPLASTY, GASTROSTOMY, GASTRECTOM (8094)

PYLORUS, CONGENITAL STENOSIS (5820)
RADIATION ENTERITIS (0357)•
RADIATION INJURY, SIGMOID STENOSIS, METASTASES (6577)
RADICAL, CANCER, DUODENAL PAPILLA (5803)
RADICAL, STOMACH, PLASMACYTOMA (7347)
RECONSTRUCTION, ESOPHAGUS, HYPOPHARYNX CORROSIVE OBLITERATION (7308)
RECONSTRUCTIVE, ESOPHAGEAL ATRESIA, COLON TRANSPLANT (6583)
RECTAL, SIGMOID, URINARY APPARATUS (4297)
RECTAL AMPULLA, SACRAL APPROACH, TUMOR, EXTERNAL SPHINCTER (6701)
RECTAL PROLAPSE, ANATOMY (4285)
RECTAL PROLAPSE, ETIOLOGY (5920), (7474)
RECTAL PROLAPSE, TWO-STAGE (4304)
RECTUM, COLON, ANASTOMOSIS, GRAFTS (8951)
RECTUM, CYSTOMETRIC EXAMINATION, BLADDER PRESSUREA HYPOTONUS, RETENTION (5095)
RECTUM, DUPLICATION (5108)
RECTUM, PERINEAL EXPOSURE, TECHNIQUE (8976)
RECTUM, CANCER (7494)
RECTUM, RECTOPLEXY (1982)
RECURRENT ILEUS, NOBLE OPERATION, ADHESIONS, APPENDICITIS, INTESTINAL TUMOR, PERITONITIS (5856)
RELAPAROTOMY, POSTOPERATIVE INTESTINAL OBSTRUCTION, ILEUS, GASTRIC JUICE (5060)
REMEDIAL, POSTGASTRECTOMY SYNDROME (4594)
REPARATIVE, PEPTIC ULCER, GASTRIC ULCER, DUMPING SYNDROME, AFFERENT LOOP, VAGOTOMY (5024)
REPEATED, GASTRIC ULCER, DUODENAL ULCER (3412)
RESECTION, SMALL INTESTINE, HIGH PROTEIN DIET EFFECTS (1925)•
RESECTION, SPHINCTER OF ODDI, GALLBLADDER (4153)
ROUX-EN-Y JEJUNAL LOOP, HEPATOBILIARY TRACT DISEASES, CHRONIC PANCREATITIS (7654)•
SECOND-LOOK OPERATION, CARCINOMA, COLON, FLUOROURACIL THERAPY (3492)
SEGMENTAL MYECTOMY, ESOPHAGUS, MORPHOLOGICAL AND FUNCTIONAL CONSEQUENCE DOG (1664)
SEPTIC SHOCK, LIVER METABOLISM (7415)
SEQUELAE, MASSIVE RESECTION, SMALL INTESTINE (8918)
SMALL INTESTINE, ANESTHESIA (2205)
SMALL INTESTINE, ATRESIA, MALFORMATION (4230)
SMALL INTESTINE, CHRONIC ULCER (5868)
SMALL INTESTINE, COLON, TRANSVERSE, TRANSPLANTATION (1928)
SMALL INTESTINE, LYMPHOMA, RADIATION (1932)
SMALL INTESTINE, MASSIVE RESECTION, DIGESTIVE CAPACITY (8919)
SMALL INTESTINE, MASSIVE RESECTION, FUNCTIONAL ADAPTATION, PHYSIOPATHOLOGY (8915)
SMALL INTESTINE, MASSIVE RESECTION, INDICATIONS, ADULTS, CHILDREN (8916)
SMALL INTESTINE, MASSIVE RESECTION, PHYSIOPATHOLOGY (8901)
SMALL INTESTINE, MASSIVE RESECTION, PHYSIOPATHOLOGY, LIPID MALABSORPTION (8914)
SMALL INTESTINE, MASSIVE RESECTION, SEGMENTAL INVERSION (8917)
SMALL INTESTINE, OBSTRUCTION (6234)
SMALL INTESTINE, RESECTION, CHILDREN (4228)
SMALL INTESTINE, SEGMENTAL INVERSION, MALABSORPTION, PHYSIOPATHOLOGY (8894)
SMALL INTESTINE, STRANGULATION, BACTERIA (3733)
SPHINCTEROPLASTY, DISTAL PANCREATIC DUCT, INFLAMMATION (7516)
SPHINCTEROTOMY, BIOPSY, VATER'S PAPILLA, TECHNIQUE (4944)
SPHINCTEROTOMY, FISSURE-IN-ANO (7478)
SPLANCHNICECTOMY, VAGOTOMY, DUODENAL ULCER (8892)
STOMACH, ACID FORMATION, HISTAMINE TEST, DIAGNOSTIC PROCEDURE (1043)
STOMACH, CARCINOMA (4988)
STOMACH, DUODENAL STUMP CLOSURE (3374)
STOMACH, DUODENAL ULCER, SERUM IRON, SERUM TRANSFERRIN (1127)
STOMACH, DUODENUM, PEPTIC ULCER (5844)
STOMACH, DUODENUM, ULCER (4198)
STOMACH, DUPLICATION, CYST (3357)
STOMACH, ELECTROLYTE METABOLISM (5807)
STOMACH, FISTULA, ULCER (5031)
STOMACH, GASTRECTOMY, FAT ABSORPTION (3367)
STOMACH, GASTRIC ULCERS, DUODENAL ULCERS (1107)
STOMACH, GASTROSCHISIS, ANTENATAL EVISCERATION (6244)
STOMACH, GASTROSCHISIS, SMALL INTESTINE, CONGENITAL DEFECT (6205)
STOMACH, JEJUNAL LOOP (0286)
STOMACH, MALABSORPTION, LACTOSE (1964)
STOMACH, PLICATION, WEIGHT REDUCTION (3744)
STOMACH, RECTUM, SUTURE (3740)
STOMACH, RESECTION, BILLROTH, ULCER (4155)
STOMACH, VAGOTOMY, MUCOSA (3354)
STOMACH TUBE, INSERTION (4158)
STRESS ULCER, HEMORRHAGIC, GASTRODUODENAL (8135)
STRESS ULCER, STOMACH, DUODENUM (1142)
SUBPHRENIC ABSCESSES, LIVER ABSCESSES, RADIOLOGIC DIAGNOSIS AND CONTROL (3614)
SUPERIOR MESENTERIC ARTERY, EMBOLECTOMY, INFARCT OF SMALL INTESTINE (9204)
SURGICAL ANATOMY, ANUS, RECTUM (3503)
TECHNIQUES, CANCER, ESOPHAGUS (1840)
THORACIC, ESOPHAGUS, CANCER (3318)
THYROIDECTOMY, GASTRIC MOTILITY, THYROTOXICOSIS (3385)

TOTAL PANCREATECTOMY, CHRONIC PANCREATITIS, 3 YEAR FOLLOW-UP (9021)
TRACHEOESOPHAGEAL FISTULA, ESOPHAGEAL ATRESIA (6588)
TRACHEOTOMY, ESOPHAGEAL LESIONS (8792)
TRANSPLANT, LIVER, SECRETION (3990)
TRAUMA, STOMACH, GASTROCUTANEOUS, FISTULA (5799)
ULCER, DUODENUM, STOMACH (3402)
ULCER, GASTRIC, DUODENAL, GASTRIC SECRETION (7400)
ULCER, GASTRIC, DUODENAL, HEMORRHAGE (7702)
ULCER, GASTRIC SECRETION (4206)
ULCER, HEMORRHAGE (4172)
ULCER, PYLOROPLASTY, VAGOTOMY (6627)
ULCER, STOMACH, DUODENUM (4194)
ULCER, STOMACH, VAGOTOMY (3401)
ULCERATIVE COLITIS, ILEUS, CONTINENCE, COLECTOMY, ANASTOMOSIS (5128)
ULCERATIVE COLITIS, INDICATIONS (4312)
ULCERATIVE COLITIS, RECTOLITIS, PSYCHIATRY, THERAPY, DIAGNOSIS (5125)
ULCERATIVE RECTOCOLITIS, LOWER MESENTERIC ARTERIO-VENOUS FISTULA, ARTERIOGRAPHY (8996)
URETEROILEOSTOMY, ECTOPIC BLADDER, CHILDREN (8942)
VAGOTOMY (1910)
VAGOTOMY, CIRCULATION (0164)•
VAGOTOMY, ESOPHAGUS (1834)
VAGOTOMY, GALLBLADDER, BILIRUBIN (3951)•
VAGOTOMY, GASTRIC RETENTION, DRAINAGE (5773)
VAGOTOMY, LIVER, GALLBLADDER (5178)
VAGOTOMY, POST-VAGOTOMY SYNDROME, DIARRHEA, GASTRIC ACID (5375)
VAGOTOMY, PYLOROPLASTY, BILE (3168)•
VAGOTOMY, STOMACH, SECRETION (3355)
VAGOTOMY, STOMACH, ULCER (4197)
VEGETATIVE NERVOUS SYSTEM, CHRONIC PANCREATITIS (7523)
WHIPPLE RESECTION, CASE REPORTS (9193)
WILSON'S DISEASE, GASTRODUODENAL, HEMORRHAGE, PORTAL HYPERTENSION, LEUCOPENIA, THROMBOPENIA (5200)
WOUND PROTECTION, LARGE INTESTINE (1272)
Z PYLOROPLASTY, HIATAL HERNIA, VAGOTOMY, VASCULARIZATION (6623)

SWENSON'S OPERATION
STRICTURE, COLON, ANUS (0436)

SYMPATHECTOMY
POSTGANGLIONIC, HEMORRHAGIC PANCREATITIS, MICROCIRCULATION (1322)•

SYMPATHOGONIOMA
ESOPHAGUS, TUMOR, ADULT (0995)

SYMPATHOMIMETIC
SMALL INTESTINE, METABOLISM (1651)

SYMPATHOMIMETIC AMINE
DOPAMINE, NORADRENALINE, ERGOMETRINE, RABBIT JEJUNUM, GUINEA PIG, VAS DEFERENS (0915)

SYNDROME
ADDUCENT LOOP, STOMACH RESECTION, SURGERY (5808)
BARRETT'S, ESOPHAGEAL ULCERATION (7301)
BLIND LOOP, ABSORPTION, SMALL INTESTINE, OBSTRUCTION (3452)
BLIND LOOP, OSTEOMALACIA, PANCREATITIS, MALABSORPTION (5159)
BOERHAAVE'S, SPONTANEOUS ESOPHAGEAL RUPTURE (4109)
BRILL-SYMMERS, SPLENIC TUMOR, PERFORATION, STOMACH, METASTASES, CACHEXIA (5011)
BUDD-CHIARI, ANOMALOUS HEPATIC VENOUS DRAINAGE (2841)
BUDD-CHIARI, THERAPY-INDUCED, LEUCOSIS, INFANT (0561)
BUDD-CHIARI, THROMBOPHLEBITIS SURGERY (6213)
BUDD-CHIARI, VENOUS OCCLUSION, LIVER DISEASE (9062)
BURNING FEET, MALABSORPTION, RIBOFLAVIN THERAPY (5899)
CARDIAC UPPER ABDOMEN, LIVER, BILIARY TRACT, STOMACH, PANCREAS (6198)
CELIAC, GLUTENENTEROPATHY (7437)•
CELIAC, IMMUNOCHEMISTRY, SECRETIONS, MUCOSA (8165)•
CELIAC, SMALL INTESTINE, INTESTINAL WASH, CELL MORPHOLOGY, ULTRASTRUCTURE (5433)•
CHRONIC RECURRENT INTESTINAL AMEBIASIS, ENTAMOEBA HISTOLYTICA, DIENTAMOEBA FRAGILIS, FECES (6256)
CRIGLER-NAJJAR, HYPERBILIRUBINEMIA, CLINICAL PICTURE (3574)
CRIGLER-NAJJAR, HYPERBILIRUBINEMIA, ICTERUS (5182)
CRIGLER-NAJJAR, HYPERBILIRUBINEMIA, LUMINAL TREATMENT, NEONATE (5220)
CRIGLER-NAJJAR, PHOTOTHERAPY, BILIRUBIN REDUCTION, INFANT (2038)•
CRIGLER-NAJJAR, THERAPY, BARBITURATE (3555)
''CRST'', CALCINOSIS, RAYNAUD'S PHENOMENON, SCLERODACTYLY, TELANGIECTASIA, PYLORIC OBSTRUCTION (1866
CRUVEILHIER-V. BAUMGARTEN, LIVER, CIRRHOSIS, PORTOUMBILICAL ANASTOMOSIS (6573)
CUSHING'S, POLYPS, COLON (5926)
CYTOLYSIS, LIVER, CHILDREN, CIRRHOSIS CHRONIC HEPATITIS (6001)
DANBOLT-CLOSS, ENTEROPATHIC DERMATITIS (1953)
DESCENDING PERINEUM, LARGE INTESTINE, RECTUM (1269)
DIARRHEAL, PANCREATIC ISLET CELL TUMOR, MANAGEMENT (3520)
DOWN'S, INFECTIOUS HEPATITIS (3634)
DUBIN-JOHNSON, CRIGLER-NAJAR, BILIRUBIN METABOLISM (9049)
DUBIN-JOHNSON, HEPATITIS, CHOLECYSTITIS, CHOLELITHIASIS (7739)
DUBIN-JOHNSON, LIVER, CELL, PIGMENT (4646)
DUBIN-JOHNSON, LIVER, INDOCYANINE GREEN, BSP RETENTION (2082)
DUBIN-JOHNSON, LIVER, JAUNDICE, HYPERBILIRUBINEMEA (3646)

DUBIN-JOHNSON, ROTOR'S, JAUNDICE LIVER (5219)
DUBIN-JOHNSON, SULFOBROMOPHTHALEIN EXCRETION, PATTERN (2061)
DUMPING, ANTISEROTONIN, METHYSERGIDE, GASTRECTOMY, GASTROENTEROSTOMY, ULCER (5079)
DUMPING, DUODENUM, ILEUM, ION (5080)
DUMPING, GASTRECTOMY, GASTRIC BIOPSY, GASTROSCOPY (7369)
DUMPING, GASTRECTOMY, RESECTION, MALABSORPTION (6636)
DUMPING, GASTRIC ULCER, PEPTIC ULCER, REPARATIVE SURGERY, PYLORIC ANTRUM, VAGOTOMY (5024)
DUMPING, GASTRODUODENAL ULCER, HEMORRHAGE, SULPIRIDE (5038)
DUMPING, PANCREAS, EXOCRINE FUNCTION, GASTRIC RESECTION, ULCER (8130)
DUMPING, PARTIAL GASTRECTOMY, CALCIUM DEFICIENCY (5779)
DUMPING, PREDISPOSTION, PREOPERATIVE TEST (3371)
DUMPING, STOMACH, RESECTION (7378)
DUMPING, STOMACH ACID, GASTROJEJUNAL ANASTOMOSIS (1045)
EHLERS-DANLOS, GASTROINTESTINAL COMPLICATION (3699)*
FELTY'S, SPLENOMEGALY, RHEMATOID ARTHRITIS, NEUTROPENIA, LIVER CHANGE (3649)*
FROHLICH, LIVER, FATTY, PERITONEOSCOPY, BIOPSY (2078)
GARDNER'S, ACROMEGALY, TUMOR, PAROTID (4306)
GARDNER'S, COLON, CARCINOMA, LIVER (3486)
GARDNER'S, COLON, COLECTOMY (5934)
GARDNER'S, COLONIC POLYPOSIS, MULTIPLE MANDIBULAR OSTEOMAS (0484)
GARDNER'S, TUMOR, RECTUM (6959)
GILBERT'S, ALKAPTONURIA, LIVER, ENZYME (7562)
GILBERT'S, HYPERBILIRUBINEMIA, LIVER (5205)
GILBERT'S, LIVER PARENCHYMA, ULTRASTRUCTURE (2801)*
GILBERT'S, PIGMENT OVERLOAD, BSF RETENTION (2053)
HEPATIC-OVARIAN, ETIOLOGY, PATHOGENESIS, CLINICAL PICTURE, THERAPEUTICS (3575)
HEPATOCEREBRAL, ENZYME (4423)
HEPATORENAL, ETIOLOGY, MANAGEMENT (4399)
HEPATORENAL, EXPERIMENTAL (7573)
HEPATORENAL, KIDNEY TRANSPLANT (6035)
HEPATORENAL, VASODILATOR, HYPOTENSION (2145)
HEPATORENAL, VIRAL HEPATITIS, ACUTE KIDNEY FAILURE (2112)
HEPATOSPLENIC, HEMATOPOIESIS, BONE MARROW, CHILDREN, HEPATITIS (4629)
HUNTER, HURLER'S, SANFILIPPO, MUCOPOLYSACCHARIDE, METABOLISM, INBORN ERRORS (6211)
HUNTER'S, MUAPOLYSACCHARIDOSIS, LARGE INTESTINE (7453)*
HURLER'S, MUCOPOLYSACCHARIDES, GLYCURONIC ACID, HEPATOSPLENOMEGALY, BUHOT CELLS, CORNEAL OPACITY (6051)
INTESTINAL KNOT, COMPOUND VOLVULUS (7696)
INTESTINAL RADIATION, ABSORPTION, PATHOGENESIS, GLUCOSE TRANSPORT (0761)*
IRRITABLE BOWEL, RECURRENT ABDOMINAL PAIN (6212)
IRRITABLE BOWEL, ULCERATIVE COLITIS, STRESS FACTOR (1301)
IRRITABLE COLON, DIARRHEA (4302)
IRRITABLE COLON, SYMPTOMS, TREATMENT (3510)
JARCHO'S, THROMBOCYTOPENIA PURPURA, STOMACH, GERIATRIC (1077)
KLIPPEL-TRENAUNAY, OMENTAL HEMANGIOMA, HEMORRHAGE (7700)
KRUKENBERG, MORPHOLOGY, HISTOCHEMISTRY (4615)
MALABSORPTION (4255)
MALABSORPTION, ALBUMIN MALABSORPTION, CHRONIC LIVER DISEASE, ACUTE HEPATITIS (6199)
MALABSORPTION, CELIAC DISEASE, INTESTINAL PEPTIDASES, GLUTEN (3448)*
MALABSORPTION, INTESTINAL (6689)
MALABSORPTION, IRON SORBITOL INJECTION (6692)
MALABSORPTION, SARCOMA, SMALL INTESTINE (4233)
MALABSORPTION, SMALL INTESTINE (7442)
MALABSORPTION, SMALL INTESTINE, CROHN'S DISEASE, RADIOGRAPHY (5879)*
MALIGNANT CELIAC, MALABSORPTION, INTESTINAL LYMPHOMA (7447)
MALLORY-WEISS, BOERHAANE'S, MANAGEMENT (8819)
MALLORY-WEISS, ESOPHAGOGASTRIC JUNCTION, MEDIASTINITIS (0986)
MALLORY-WEISS, HEMORRHAGE, GASTROINTESTINAL TRACT, PANCREATIC CARCINOMA, SARCOMA (6238)
MALLORY-WEISS, SPONTANEOUS RUPTURE, STOMACH, ESOPHAGUS, LACERATIONS, CARDIAC MASSAGE, GASTROINTESTINAL TRACT (5740)
NEPHROTIC, FATTY LIVER, FATTY KIDNEY (6892)
PANCREATIC CHOLERAIC, SECRETIN, GASTRIN, TUMOR, BLOOD, EXTRACTS, BIO-ASSAY (6156)*
PEUTZ-JEGHER (8143), (8153)
PEUTZ-JEGHERS, FAMILIAL, LARGE INTESTINE, ADENOMATOUS TUMOR (1229)
PEUTZ-JEGHERS, JEJUNO-ILEAL INVAGINATION, OCCLUSION (4241)
PEUTZ-JEGHERS, JEJUNUM, POLYPOSIS (6680)
PEUTZ-JEGHERS, POLYPOSIS, PIGMENTATION, GENETICS (1212)
PEUTZ-JEGHERS, SMALL INTESTINE, GASTRIC MUCOSA, DUODENUM, JEJUNUM, ILEUM (5875)
PEUTZ-JEGHERS, SYMPTOMATOLOGY, POLYPE HISTOLOGY (8908)
PLUMMER BINSON'S, DYSPHAGIA, FAMILIAL INCIDENCE (1015)

- PORTAL HYPERTENSION, SCHISTOSOMIASIS (7764)
- POSTGASTRECTOMY, REMEDIAL SURGERY (4594)
- REYE'S, LIVER STEATOSIS, ENCEPHALOPATHY, URIC ACID (8304)
- REYE'S, PERITONEAL DIALYSIS, HEPATOMEGALY (6018)
- ROTOR'S, DUBIN-JOHNSON'S, CHRONIC FAMILIAL JAUNDICE (6810)
- ROTOR'S, LIVER CELL, MORPHOLOGY (2354)
- RUNTING, LIVER, ELECTRON MICROSCOPY, GRAFT VS. HOST REACTION, BACTERIAL ENDOTOXEMIA, MICE (1564)•
- SJOGREN'S, LIVER, PATHOLOGY, RHEUMATOID ARTHRITIS (5206)
- SPRUE, PATHOPHYSIOLOGY (4262)
- STEVENS-JOHNSON, TOXIC HEPATITIS, SULFISOXAZOLE, SULFAMETHOXAZOLE, PREDNISONE (4445)•
- STRESS ULCER, TRAUMA, STOMACH, DUODENUM (5771)
- SUPERIOR MESENTERIC ARTERY, MEGADUODENUM, CAST SYNDROME, RADIOGRAPHY (1889)
- SUPERIOR MESENTERIC ARTERY, SEVERE BURNS (2211)
- TREHALOSE MALABSORPTION, MUSHROOM INTOLERANCE (8930)
- WEBER CHRISTIAN, PHYSIOPATHOLOGY (9010)
- WILSON'S, LIVER, ULTRASTRUCTURE, COPPER, MITOCHONDRIA, LYSOSOME, NUCLEAR GLYCOGEN, STEATOSIS (2799)•
- ZELLWEGER, CEREBRO-HEPATO-RENAL (7566)
- ZELLWEGER, RENAL CYST, LIVER DISEASE, HYPOTONIA, CONGENITAL IRON OVERLOAD, CHROMOSOAL DISORDER (2845)
- ZIEVE'S, ALCOHOLIC, UNSTABLE HYPERLIPEMIA (3653)
- ZIEVE'S, ALCOHOLIC LIVER STEATOSIS, JAUNDICE, DIFFERENTIAL DIAGNOSIS (8306)
- ZIEVE'S, HYPERLIPEMIA, JAUNDICE, HEMOLYTIC ANEMIA, STEATOSIS, CIRRHOSIS, ALCOHOL, LIVER DAMAGE (5284)
- ZIEVE'S, PROLONGED EVOLUTION, CIRRHOSIS (2902)
- ZOLLINGER-ELLISON, ACHLORHYDRIA, ATROPHIC GASTRITIS (1883)
- ZOLLINGER-ELLISON, BIOASSAY, DIAGNOSIS, POLYENDOCINOPATHY, PANCREAS, ADENOMA (1520)
- ZOLLINGER-ELLISON, CHARACTERISTICS, SURGICAL TREATMENT (2202)
- ZOLLINGER-ELLISON, CLINICAL AND PATHOLOGICAL FEATURES (2022)
- ZOLLINGER-ELLISON, DIAGNOSIS, BIOASSAY (8054)
- ZOLLINGER-ELLISON, DIAGNOSIS, BIOASSAY, GASTRIN (4921)
- ZOLLINGER-ELLISON, DIAGNOSIS, GASTRIN BIOASSAY (0933)•
- ZOLLINGER-ELLISON, DUODENAL CARCINOID TUMOR, LANGERHANS ISLET TUMOR (3372)
- ZOLLINGER-ELLISON, EARLY DIAGNOSIS, PENTAGASTRIN INFUSION METHOD (9252)
- ZOLLINGER-ELLISON, FULMINATING PEPTIC ULCER, ANTICHOLINERGICS, PANCREATIC SURGERY (8479)
- ZOLLINGER-ELLISON, GASTRIN, TRACER TECHNIQUE, IMMUNOLOGY (1808)•
- ZOLLINGER-ELLISON, INTESTINE, ABSORPTION, GASTRIC SECRETION (5380)
- ZOLLINGER-ELLISON, ISLET CELL TUMOR, PANCREAS, GASTRIN DIARRHEA (5381)
- ZOLLINGER-ELLISON, LIVER AND PANCREAS, CANCER, METASTATIC, SMALL INTESTINE SURGERY (1507)•
- ZOLLINGER-ELLISON, NEOPLASMA, STATUS (0708)
- ZOLLINGER-ELLISON, PANCREAS, PROCRESINE, GASTRIC SECRETION (6214)
- ZOLLINGER-ELLISON, PANCREAS, DIAGNOSIS (2733)
- ZOLLINGER-ELLISON, PANCREAS, ISLET-CELL ADENOMA, HYPOKALEMIA (2176)
- ZOLLINGER-ELLISON, PANCREAS BICARBONATE SECRETION, PEPTIC ULCERS, STOMACH ACID SECRETION (1512)
- ZOLLINGER-ELLISON, PEPTIC ULCER, PANCREAS, ADENOMA (1524)
- ZOLLINGER-ELLISON, SECONDARY AMENORRHEA, FATAL OUTCOME (2210)
- ZOLLINGER-ELLISON, SMALL INTESTINE, ULCERATIVE COLITIS, GASTRIC SECRETION (4939)
- ZOLLINGER-ELLISON, TOTAL GASTRECTOMY (2240)
- ZOLLINGER-ELLISON, TUMOR, GASTRECTOMY, HYPERCALCEMIA, GASTRIN (8433)
- ZOLLINGER-ELLISON, TUMOR, PANCREAS (7747)
- ZOLLINGER-ELLISON, TUMOR, ULCEROGENIC (0691)
- ZOLLINGER-ELLISON, ULCER, DIAGNOSIS (2235)
- ZOLLINGER-ELLISON, ULCER, GASTRECTOMY, CARCINOID (2967)
- ZOLLINGER-ELLISON, ULCER, GASTRIC SECRETION (3265)•

SYPHILIS
- CIRRHOSIS, ASSOCIATION, SIGNIFICANCE (0642)
- HEPATIC CIRRHOSIS (2155)

TAENIA COLI
- COLON, CALCIUM, POTASSIUM (2332)
- COLON, SMOOTH MUSCLE (3783)
- MOTILITY, TEMPERATURE, GUINEA PIG (6386)

TAPEWORM
- CYSTICERCOSIS, MADAGASCAR (4678)
- ENZYME, METABOLISM (3784)
- EPIDEMIOLOGY, CYSTICERCOSIS, PARASITOLOGY (3019)
- HYDATID, LIVER (3010)
- INTESTINAL ABSORPTION, POTASSIUM IODIDE, SERUM VITAMIN B12, CHILDREN (0362)
- T. COLI, RABBIT AORTA, ESOPHAGUS, TRANYLCYPROMINE MECHANICAL ACTIVITY (0781)
- TAENIA SAGINATA, HYMENOLEPSIS NANA, PAROMOMYCIN, TREATMENT (2252)

- AURINE
  - ANALOGUES, SALICYLIC ACID DERIVATIVE, ABSORPTION, GASTROINTESTINAL TRACT, RAT (2350)
- AY-SACHS' DISEASE
  - LIPIDS, BRAIN, LIVER, BIOCHEMISTRY (2059)
- ECHNETIUM
  - TC 99M SULFIDE, LIVER, SCANNING (2536)
- ECLOZAN
  - AMEBIASIS, INTESTINAL, TREATMENT (1542)
- ELECHOLANGIOSCOPY
  - BILIARY TRACT, MANOMETRY, SURGERY (0937)•
- ELEMETRY
  - PH, GASTRIC SECRETION, ESOPHAGEAL REFLUX, THERAPY EVALUATION (0938)•
- ELEVISION
  - MAGNETIC TAPE, GASTROINTESTINAL TRACT EXAMINATION (0970)
  - X-RAY INSTALLATION, ROLL FILM CHANGER, GASTRODUODENAL STUDY (3269)•
- EMPERATURE
  - TAENIA COLI, MOTILITY, GUINEA PIG (6386)
- ESTOSTERONE
  - LIVER PERFUSION, STEROIDGLUCURONIDE, SEX SPECIFICITY (3975)
  - METABOLISM, PERFUSED LIVER (3977)
  - SMALL INTESTINE, FAT ABSORPTION, RAT (0772)
  - SMALL INTESTINE, SECRETION (3236)
- ETANUS
  - JEJUNO-JEJUNO-GASTRIC INTUSSUSCEPTION GANGRENE (1198)
- HERAPY
  - ACUTE DYSENTERY, ANTIBIOTICS (7711)
  - AMEBIASIS, LIVER, DIAGNOSIS (3018)
  - BARIUM SULFATE, PEPTIC ULCER, STOMACH, DUODENUM (7253)
  - CHEMO-, CARCINOMA, LARGE BOWEL, MAMMARY, RENAL (6708)
  - CHEMO-, GASTRIC CANCER (7379)
  - CHEMO-, LUCANTHONE HYDROCHLORIDE, BILHARZIASIS (7767)
  - CHLOROXYL, OPISTHORCHOSIS (7766)
  - CHRONIC HEPATITIS, IMMUNOSUPPRESSIVE CYTOSTATICS, D-PENICILLAMINE (8368)
  - COLON DISEASE, ATAPULGITE, GUAR GUM (8203)
  - COMBINED, CONSERVATIVE AND PSYCHOTHERAPY, ULCERATIVE COLITIS (8997)
  - CORTICOSTEROID, VIRAL HEPATITIS (7619)
  - CUCURBITACINES, HELMINTHIASIS, MOUSE (9280)
  - DRUG, DIET, MASSIVE SMALL INTESTINAL RESECTION (8905)
  - ELECTROLYTE AND FLUID ADMINISTRATION, PERFORATIVE PERITONITIS, PATHOGENESIS (9250)
  - ENZYME INDUCTION, HYPERBILIRUBINEMIA (5469)
  - ESOPHAGEAL ACHALASIA, SURGERY, RADIOLOGY (8823)
  - GALLBLADDER DISEASE, PHARMACOLOGY, PATHOPHYSIOLOGY (6132)
  - GASTRIC ULCER, GASTROPULGITE, GASTRIC PH RADIOMETRY (8134)
  - GASTRODUODENAL ULCER, GASTRECTOMY, ANTRECTOMY, PYLOROPLASTY (5022)
  - GASTROPULGITE, ESOPHAGEAL DISEASE, GASTRODUODENAL DISEASE (8072)
  - GASTROPULGITE, GASTROENTEROLOGY (8467)
  - GASTROPULGITE, UPPER GASTROINTESTINAL TRACT DISEASE (8457)
  - HEMORRHOIDS, ETIOLOGY, PATHOGENESIS (8952)
  - HETOL, OPISTHORCHOSIS, THAILAND (8496)
  - HYPNO-, ULCERATIVE COLITIS (7502)
  - IMMUNOLOGY, ANTILYMPHOCYTIC GLOBULIN, HEPATITIS (6873)
  - IMMUNOSUPPRESSION, ULCERATIVE COLITIS, CHILDREN (8217)
  - INTRAVENOUS HEPATIC OPOTHERAPY, BILHARZIASIS, LIVER (9281)
  - ISONIAZID, RIFAMPICINE, ANTITUBERCULAR ACTIVITY, HEPATIC LESIONS, LUNG TUMOR (5230)
  - LIVER STEATOSIS, ESSENTIAL PHOSPHOLIPIDS, SERUM TRANSAMINASES (9099)
  - LUMINAL, RHESUS INCOMPATIBILITY, JAUNDICE, NEWBORN INFANTS, ENTOPLASTIC RETICULUM (5201)
  - LUNG CANCER, CYCLOPHOSPHAN, LIVER FUNCTION (8042)
  - METRONIDAZOLE, GIARDIA INTESTINALIS, CYTOCHEMISTRY (6258)
  - METRONIDAZOLE, GIARDIASIS, DIARRHEA (6266)
  - PEPTIC ULCER (2646)
  - PERITONITIS (5389)
  - PHARMACOLOGY, PANCREATITIS, PATHOPHYSIOLOGY (5964)
  - PHARMACOLOGY, SMALL INTESTINE DISEASE, PATHOPHYSIOLOGY (5863)
  - POLYARTHRITIS, HEPATOSIS, CHOLESTASIS, GOLD TREATMENT, DURO--DETOXIN (5194)
  - PROTEIN, MALNUTRITION, HEMATOLOGY, METABOLISM (4623)
  - RECTOPANBILINE GEL, CHRONIC CONSTIPATION, ENEMA, DYSCHEZIA (5094)
  - REST, LIVER DISEASE, TRANSAMINASE, EXERCISE, CHRONIC HEPATITIS, LIVER CELL PERMEABILITY (4937)
  - SERUM, BOTULISM TYPE I, RABBIT, MONKEY (9218)
  - STOMACH, DUODENUM, PEPTIC ULCER, SULPIRIDE (4204)
  - SULPIRIDE, GASTROINTESTINAL DISEASES (7325)•
  - SULPIRIDE, PEPTIC ULCER, SIDE EFFECTS (7395)
  - SULPIRIDE, ULCERATIVE COLITIS, CROHN'S DISEASE (7500)•
  - TINCTURE OF OPIUM-HMB-PECTIN COMBINATION, NONSPECIFIC DIARRHEA, CHILDREN (8442)
  - ULCER, GASTRIC, DUODENAL CARBENOXOLONE (7841)
  - ULCER, STOMACH, DUODENUM (5834)
  - VIRAL HEPATITIS, CLINICAL FEATURES, PROPHYLAXIS (7608)
  - VIRAL HEPATITIS, GLUCOCORTICOID METABOLISM (7617)
  - VIRAL HEPATITIS, POLYVINYL ALCOHOL PREPARATION (8355)

  - VIRAL HEPATITIS, PREGNANCY (7618)
  - X-RAY, ESOPHAGUS, CARCINOMA (5746)
  - XYLAMIDE, GASTRIC ULCER, GASTRODUODENITIS (7387)•

THERMOMETRY
  - ESOPHAGOPLASTY, BLOOD SUPPLY (0240)

THIAMIN
  - ABSORPTION, ANALOGS, GRADIENT (3880)
  - ABSORPTION, GRADIENT LEVEL, INTESTINE (3879)
  - DEFICIENT DIET, PROTEIN SYNTHESIS, POLYSOME, LIVER (0134)

THIOLS
  - CHOLESTEROL SYNTHESIS, LIVER (7141)•

THROMBIN
  - HEPATECTOMY, LIVER, KUPFFER CELLS (1386)

THROMBOCYTOPENIA
  - ARTERIAL THROMBOSIS, STREPTOKINASE, INTRAARTERIAL INFUSTION (3414)
  - CIRRHOSIS, PORTAL HYPERTENSION, COAGULATION, FIBRINOLYSIS (0641)
  - LIVER, CIRRHOSIS, SPLENOMEGALY (6883)

THROMBOENDARTERECTOMY
  - ILEOFEMORAL (1995)

THROMBOPHLEBITIS
  - CAVO-PORTAL, THROMBOSIS, PORTAL CIRCULATION, TREATMENT (2217)

THROMBOSIS
  - ARTERIAL, THROMBOCYTOPENIA, STREPTOKINASE, INTRAARTERIAL INFUSION (3414)
  - HEPATIC VEIN, ANOMALOUS DRAINAGE (2841)
  - HEPATIC VEIN, CARBON TETRACHLORIDE, METHYLCHOLANTHRENE, RAT (3606)
  - HIATAL HERNIA, HYPOCHROMIC ANEMIA, MYELOGRAM, HEMOGLOBIN (6595)
  - MESENTERIC VEIN, HEMODYNAMICS (7692)
  - PORTAL CIRCULATION, TREATMENT (2217)

THYMECTOMY
  - LIVER, REGENERATION (3987)
  - LIVER, REGENERATION, DNA (3986)
  - LIVER, REGENERATION, ENZYME (3988)
  - LIVER, REGENERATION, MITOSIS (3985)
  - LIVER, REGENERATION, SURGERY (3984)

THYMIDINE
  - INCORPORATION, DNA, ISOLATED MITOCHONDRIA, LIVER, RAT (3069)

THYMUS
  - FREUND'S ADJUVANT, ARTHRITIS, STOMACH, SMALL INTESTINE (4578)

THYROID
  - DISTURBANCE, LIVER FUNCTION (2843)
  - LIVER, ENZYME, ADRENAL, CORTISOL (3856)

THYROID DISEASE
  - HYPOTHYROIDISM, HYPERTHYROIDISM, GASTRIC SECRETION, ACID, INTRINSIC FACTOR (1668)•
  - MYXEDEMA, PARALYTIC ILEUS, FLUID IMBALANCE, ELECTROLYTE (8941)•

THYROID HORMONE
  - DEFICIENCY, POLYSOME, MONOSOME, PROTEIN, LIVER (0133)

THYROXINE
  - LIVER, CIRRHOSIS, ALPHA-GLOBULIN (3658)
  - LIVER, ENZYME HISTOCHEMISTRY (0023)
  - LIVER, MITOCHONDRIA, FATTY ACID (3947)•

TISSUE ADHESIVE
  - N-BUTYL 2-CYANOACRYLATE, IMPLANTATION, LIVER FUNCTION, DOG (2454)

TOXEMIA
  - PREGNANCY, HEPATIC HEMORRHAGE (6835)•
  - PREGNANCY, SUBSCAPULAR HEPATIC HEMATOMA (1362)

TOXICITY
  - ACUTE, ALCOHOL, ACETONE, LD50 (6061)•
  - ACUTE ORAL, DIMETHOATE, PROTEIN MALNUTRITION, RAT (6995)
  - ALCOHOL, LIVER, CIRRHOSIS, CHRONIC HEPATITIS (6122)
  - ANESTHESIA, LIVER, CONJUGATING CAPACITY, HEMODYNAMICS (6840)
  - BILIRUBIN, DISTRIBUTION, ALBUMIN (7072)
  - CYTOTOXIC DRUGS, LIVER CHANGES, ACUTE PHOSPHORUS POISONING (3623)
  - DDT, METABOLITES, LIVER, THERAPY (7584)
  - E.COLI ENDOTOXIN, ENHANCEMENT, HEMOGLOBIN, FERRIC AMMONIUM CITRATE (8477)
  - HEPATO-, CAFFEINE, THEOPHYLLINE, ACUTE NON-VIRAL HEPATITIS, RAT (5821)
  - HEPATO-, CCL4, ETHANOL (5991)•
  - HYPOGLYCIN, METABOLISM (5249)
  - LIVER (5248)
  - LIVER, ACUTE VIRAL HEPATITIS (6034)
  - LIVER, ALKALOID, RAT (5239)
  - LIVER, CHLORETHANOL, GROWTH, RAT (5231)
  - LIVER, CHLOROFORM, ENZYME (3607)
  - LIVER, ENZYME, POISON, DRUG (5425)•
  - LIVER, TRANSAMINASES, ALKALINE PHOSPHATASE, OBIDOXIN (6467)
  - LYMPHOCYTE, ULCERATIVE COLITIS, GRANULOMATOUS COLITIS, ALLOGENIC COLONIC EPITHELIAL CELLS (5947)•
  - METHOTREXATE, GI LESIONS, LEUCOVORIN (8429)
  - POISON, ACTIVATED CHARCOAL, LIVER, ASPIRIN, PENTOBARBITOL, GASTROINTESTINAL TRACT (5639)
  - SALMONELLA ENTERITIDIS (7551)
  - TRICHLOROETHYLENE, HEPATORENAL DAMAGE, HISTOLOGY (8334)

TOXICOLOGY
  - CUCURBITACINE LAXATIVE (4013)
  - ETHIONINE, ENZYME INHIBITION, LIVER (4450)
  - HERBICIDES, MONURON, LIVER MITOCHONDRIA (3600)
  - HYPERBILIRUBINEMIA, NAPTHYLISOTHIOCYANATE (1387)
  - SOMAN, DFP, ENZYME BIOSYNTHESIS, LIVER (4452)

TOXIN
  - AFLA-, LIVER, RNA (7171)
  - ALPHA-AMANITIN, RNA POLYMERASE ASSAY, LIVER NUCLEI (6317)
  - BOTULISM TYPE E, SERUM THERAPY, RABBIT, MONKEY (9218)
  - CHEMICAL, DELTA-AMANITIN, INHIBITION,

  - RIBONUCLEIC ACID POLYMERASE, LIVER, NUCLEI, RAT (2305)
  - CHOLERA, ELECTROPHORETIC MOBILITY, FORMALIN (6514)
  - CYANIDE, LIVER, INHIBITION, AMYLASE SYNTHESIS, PROTECTION, RAT (5567)*
  - ENDO-, LIVER, SPLEEN, SALMONELLA ENTERITIDIS, RAT, MOUSE (5983)*
  - ENTERO-, STAPHYLOCOCCAL, SMALL INTESTINE (6672)*
  - ENTERO-, VIBRIO CHOLERA, BIOCHEMISTRY (6513)
  - NEPTUNIUM, FATTY LIVER, MORPHOLOGY, FUNCTION, RAT (3619)
  - SALMONELLA, ENDOTOXIN, TEMPERATURE EFFECTS (8461)
  - TETANY, MALABSORPTION, GAMMA GLOBULIN, SMALL INTESTINE (5077)

- OXOPLASMOSIS
  - CHOLANGITIS, HEPATITIS, BIOPSY, CHOLESTASIS (1673)*
- RACER TECHNIQUE
  - CIRRHOSIS, LIVER BLOOD FLOW, DIAGNOSIS (0211)
  - HEPATITIS, LIVER FUNCTION TESTS (0210)
  - LIVER, RAT, CELL CULTURE, PROTEIN (2463)
  - POLYVINYLPYRROLIDONE, MOLECULAR WEIGHT INTESTINAL PERMEABILITY (7058)*
  - PROTEIN, DRUG EFFECT, ULCER (2488)
- RACHEA
  - LARYNGOESOPHAGEAL CLEFT, CONGENITAL ANOMALY (3324)
  - TRACHEOESOPHAGEAL FISTULA, PEDIATRICS (1012)
- RANSFUSION
  - BLOOD, RED CROSS, HEPATITIS (1398)*
  - BLOOD PLASMA, INFECTIOUS HEPATITIS, EARLY RECONVALESCENCE, JAUNDICE (0627)
  - EPIDEMIOLOGY, HOMOLOGOUS SERUM HEPATITIS, INOCULATION (2871)
  - EXCHANGE, INTESTINAL PERFORATION, POLY VINYL CHLORIDE TUBE (1228)
  - HEPATIC COMA, RECOVERY (3589)
  - VIRAL HEPATITIS, EPIDEMIOLOGY, SERUM PROTEIN FRACTION (2877)
- RANSMURAL STIMULATION
  - JEJUNUM, CATECHOLAMINE (0727)*
- RANSPLANT
  - ANGIOGRAPHY, LIVER, CIRCULATION (2466)
  - AUXILIARY, PANCREAS, REJECTION (3923)
  - BILE DUCT, TRACHEAL ALLOGRAFT (6917)
  - COLON, INFANT, ESOPHAGEAL ATRESIA, TRACHEOESOPHAGEAL FISTULA (6583)
  - ESOPHAGOPLASTY, PERISTALSIS, LARGE INTESTINE (2746)
  - GASTROINTESTINAL TUBE, ESOPHAGUS, RECONSTRUCTION, HUMORAL FACTORS (4798)
  - HETEROGRAFT, LIVER, BABOON, MAN, CROSS CIRCULATION, IMMUNODEPRESSIVES, CORTICOIDS (5213)
  - HETEROTOPIC, ALLOGRAFT, LIVER, IMMUNOSUPPRESSION (2069)
  - HETEROTOPIC, LIVER, ANATOMICAL AND PHYSIOLOGICAL REQUIREMENTS, PIG (9071)
  - HETEROTOPIC, LIVER, CHRONIC, INSUFFICIENCY, DECOMPENSATED, CIRRHOSIS, MAN (9072)
  - HETEROTOPIC, LIVER, HYPERTROPHY, SPLENOPORTAL ANASTOMOSIS, PIG (6012)
  - HOMO-, LIVER, BILE (6826)
  - ILEUM, CELLULAR CALCIUM, SMOOTH MUSCLE (1646)*
  - INTESTINE, REJECTION, LYMPHATIC REGENERATION (8958)
  - KIDNEY, HEPATORENAL SYNDROME (6035)
  - LIVER (3197), (3212), (3978), (4467)
  - LIVER, ALLOGRAFT, XENOGRAFT, PRIMATE (2113)
  - LIVER, ANESTHESIA (3188)
  - LIVER, AUXILIARY PARTIAL, MACACA (3198)
  - LIVER, AZOTHIOPRINE, SERUM IMMUNOSUPPRESSIVE ACTIVITY (6766)*
  - LIVER, BILE DUCT OBSTRUCTION, ARTERIAL BLOOD RESTRICTION (3182)
  - LIVER, BILIRUBINEMIA, HETEROTOPIC GRAFT, HUMAN, BABOON (6007)
  - LIVER, BLEEDING (7552)
  - LIVER, HEPATECTOMY, DNA (5171)*
  - LIVER, HISTOLOGY, HISTOCHEMISTRY (6823)
  - LIVER, HOST VS GRAFT (1388)
  - LIVER, HUMAN (6815)
  - LIVER, HUMAN DONOR, SELECTION CRITERIA, SURGICAL PROCEDURE (5985)*
  - LIVER, IMMUNOLOGY, PIG, DOG (8285)
  - LIVER, INDICATIONS (3964)
  - LIVER, KIDNEY, BLOOD GROUPS, TISSUE GROUPS, ISCHEMIA, VASCULAR ANOMALIES (5186)
  - LIVER, MAN (6792)
  - LIVER, PATHOLOGY (1583)*
  - LIVER, REJECTION, MAN (9087)
  - LIVER, SECRETION (3990)
  - ORTHOTOPIC, LIVER, CIRRHOSIS, REJECTION, ETIOLOGY (9073)
  - ORTHOTOPIC, LIVER, DOG (6742)
  - ORTHOTOPIC, LIVER, IMMUNOLOGY, ANATOMOPATHOLOGY, DOG (9086)
  - ORTHOTOPIC, LIVER, IMMUNOSUPPRESSIVE AGENTS (2067)
  - ORTHOTOPIC, LIVER, LYMPHATIC, DOG (6006)
  - ORTHOTOPIC, LIVER, MORBIDITY, MORTALITY (2068)
  - ORTHOTOPIC, LIVER, PIG (1379)
  - ORTHOTOPIC, LIVER, REJECTION, PIGLET (9092)
  - PANCREAS (3926), (3927), (3928)
  - PANCREAS, CANINE ALLOGRAFTS, TERMINAL NEPHROPATHY (6736)
  - PANCREAS, DOG, IMMUNOSUPPRESSIVE (2362)
  - PANCREAS, HETERTROPIC (0086)
  - PRESERVED LIVER, CLOTTING ABNORMALITIES (0532)*
  - SMALL INTESTINE, AUTOGRAFTS, HOMOGRAFTS (0165)
  - SMALL INTESTINE, AUTOTRANSPLANT, HEMODYNAMICS (0174)
  - SMALL INTESTINE, ESOPHAGOPLASTY, CIRCULATION (7317)

- SMALL INTESTINE, EXTRAMURAL SYNAPSES (8147)
- STOMACH (3912)
- SURGERY, LIVER (2834)

TRANSPLANTATION
- LIVER (2811)
- LIVER, ISOGENIC, ALLOGENIC (8281)

TRANSPORT
- ACTIVE, INTESTINE, SUGAR, STRUCTURE (7834)*
- ALANINE, SODIUM, INTERACTION, ILEUM, RABBIT (3105)*
- AMINO ACID, HEPATOMA CELL CULTURES, TYROSINE, AMINOTRANSFERASE (7114)*
- AMINO ACID, LIVER, EPINEPHRINE, GLUCAGON, ADENOSINE 3'5' MONOPHOSPHATE (5493)*
- AMINO ACID, SUGAR, SODIUM SENSITIVITY, INTESTINE (5478)*
- AMMONIA, METABOLISM, GASTROINTESTINAL TRACT (5634)
- CALCIUM, INTESTINE, BRUSH BORDER, VITAMIN D (7836)*
- CALCIUM, NEPHRECTOMY, VITAMIN D-DEFICIENCY (7059)*
- CALCIUM, VITAMIN D, SMALL INTESTINE (8560)*
- CARMINE, FECES, CONSTIPATION (6528)
- CELL, ENZYME, CALCIUM, INTESTINE (3118)
- CITRATE, MITOCHONDRIA, FATTY ACID SYNTHESIS (7106)*
- DRUG, CATION, INTESTINE, RAT (2328)
- DUODENAL COLUMNAR CELLS, RADIOAUTOGRAPHY (7794)*
- ELECTRICAL POTENTIAL, MUCOSA, RECTUM, COLON (4800)
- ELECTRICAL POTENTIAL, SMALL INTESTINE, ION, MUCOSA (4803)
- ELECTROLYTE, SMALL INTESTINE, VOLTAGE, RAT (0768)*
- ELECTROLYTE, WATER, RECTUM, AMPULLA, RENAL (6699)
- 5-THIO-D-GLUCOSE, SMALL INTESTINE (7831)*
- GLUCOSE, AMINO ACID, FASTING (5491)*
- GLUCOSE, SMALL INTESTINE, O2 AVAILABILITY (6361)
- GLYCINE, ILEUM, SODIUM (8549)*
- HEPATIC, ANIONS, METABOLITES, STEROIDS (4762)*
- HEPATOBILIARY TRANSPORT, BSP, BILIARY EXCRETION, GLUTATHIONE CONJUGATES (4754)*
- INTESTINAL, AMINO ACIDS, HIBERNATION, LIZARD (8558)*
- INTESTINAL, AMINO ACID, SUGAR (6363)
- INTESTINE, MONOSACCHARIDES, FASTING, DIABETES (8559)*
- JEJUNUM, SODIUM, ENZYME, SMALL INTESTINE (1633)*
- K+-H+ EXCHANGE, LIVER, MITOCHONDRIAL MEMBRANES, MAO ACTIVITY (5428)*
- LIPOPROTEIN, INTESTINAL LYMPH, ULTRASTRUCTURE (5417)*
- LIVER, CALCIUM, MAGNESIUM, RAT (2343)*
- LIVER, SECRETION, CHLOROGUANIDE-TRIAZINE (1717)*
- LIVER, TRIGLYCERIDE, PROTEIN DEPLETION SERUM APOPROTEIN (6934)*
- MEMBRANE, HEPATIC CIRCULATION (6377)
- METOCLOPRAMIDE, SMALL INTESTINE, DOG (3107)*
- MITOMYCIN C, EHRLICH ASCITES TUMOR CELLS, IN VITRO (6790)
- MONOVALENT CATIONS, ILEUM, SODIUM-ALANINE INTERACTION (8550)*
- NUCLEIC ACID, PHENETHYL ALCOHOL, HEPATOMA CELL, RAT (5989)*
- PENICILLAMINE, ISOMERS, SMALL INTESTINE (7056)*
- PERITONEUM, LOCAL OSMOSIS, NET WATER FLUX, TRANSPERITONEAL EXCHANGE, SOLVENT DRAG (4758)*
- PERITONEUM, OSMOSIS, UREA, INULIN, RISA, FILTRATION (4765)*
- POTASSIUM, COLON, RATS, ADRENALECTOMIZED, SODIUM DEPLETED (0760)*
- RATE CONSTANTS, GASTROINTESTINAL TRACT (6374)
- RECTUM, AMPULLA, ELECTROLYTE, SALURETIC (6370)
- SODIUM, COLON, MAN, IN VITRO (8548)*
- SUGAR, SODIUM GRADIENT, ENERGY DEPENDENT (7825)*
- TRANSMEMBRANE POTENTIAL, HEPATOCYTE, CATECHOLAMINE, NICOTINE (4782)
- VOLTAGE RESPONSE, DIRECT CURRENT, GASTRIC MUCOSA, FROG (6390)
- WATER, CECUM, WALL, RAT (4759)*
- WATER, INTESTINAL MUCOSA, OSMOTIC VOLUME FLOW (6351)*

TRASYLOL
- ACUTE PANCREATITIS, THERAPY (1339)
- PANCREATITIS, TREATMENT (1338)
- PERITONITIS, TREATMENT (1516)

TRAUMA
- ABDOMINAL, DUODENAL, PANCREATIC, ADRENAL (6541)
- ABDOMINAL, MECKEL'S DIVERTICULUM (7417)
- ABDOMEN, BATTERED CHILDREN (1517)
- ABDOMEN, COLON PERFORATION, TRAFFIC ACCIDENTS (8945)
- ABDOMEN, DIAGNOSIS, THERAPY (7255)
- ABDOMEN, DUODENUM, RUPTURE (2231)
- ABDOMEN, LIVER, SMALL BOWEL, STOMACH, PANCREAS (5390)
- ABDOMEN, RADIOLOGY, CHILDREN (4920)
- ABDOMEN, RUPTURE, JEJUNUM (1190)
- ACUTE, LIVER, HEPATIC COPPER, NON-VIRAL HEPATITIS (6067)
- ACUTE ABDOMEN, IATROGENIC LESIONS, EMERGENCY MEASURES (9242)
- ACUTE PANCREATIC, FISTULA, RUPTURE, AORTOGRAPHY, PSEUDOCYSTS, PANCREATODUODENECTOMY (5142)
- BLUNT, ABDOMINAL (8462)
- BLUNT, ABDOMEN, BILE DUCT AVULSION, CHILD (4581)
- BLUNT, BILE DUCT SEVERANCE (4552)
- BLUNT, COMMON BILE DUCT, TRANSECTION, CHOLEDOCHODUODENOSTOMY (6133)
- BLUNT, DIAPHRAGMATIC RUPTURE (6185)
- BLUNT, DUODENAL RUPTURE, RETROPERITONEAL (5797)

  CHEST, TRACHEO-ESOPHAGEAL FISTULA (5744)
  CLOSED, ABDOMEN, PANCREAS RUPTURE, SURGERY, ANTIBIOTIC (2783)
  CLOSED, DUODENUM, RUPTURE (1934)
  CLOSED LIVER, SURGERY (6049)
  DIAPHRAGM, RADIOLOGY, SURGERY (9235)
  EMERGENCY PERITONEOSCOPY (6558)
  EXTERNAL COMPRESSION, CELIAC AXIS (4590)
  HEMOPHILIA, HEMATOMA, HYPERBILIRUBINEMIA, HYPERAZOTEMIA (0591)
  HEPATIC, HEPATECTOMY, GLISSON'S CAPSULE, RADIOLOGY, DRAINAGE (6052)
  HEPATIC, SURGERY, COMPLICATIONS (2049)
  HILAR REGION, SURGERY, MAN (1411)
  INSTRUMENTAL, BRACHYESOPHAGUS, PULMONARY INFLAMMATION (0247)
  INTRAMURAL HEMATOMA, DUODENUM (7343)
  LIVER (2092)
  LIVER, ACUTE NON-VIRAL HEPATITIS (6083), (6188)
  LIVER, ANALYSIS (0597)
  LIVER, CARDIOPATHOGENIC DIET ATP-SPOFA HISTOLOGY (5993)•
  LIVER, HEMATOBILIA (1373)
  LIVER, HEPARIN, SURGERY (6073)
  LIVER, LEFT LOBE (6787)
  LIVER, MANAGEMENT (4464)
  LIVER, MORTALITY, HEMORRHAGE (7591)
  LIVER, PENTOBARBITAL, CATABOLISM (6081)
  LIVER, PULMONARY COMPLICATIONS (7588)
  LIVER, RESECTION (1393)
  LIVER, RIGHT HEPATIC LOBECTOMY (7555)
  LIVER, SERUM GLYCOPROTEIN (7551)
  LIVER, SHOCK, JAUNDICE (5238)
  LIVER, SUPRARENAL VENA CAVA (1408)
  LIVER, SURGERY, TUMOR (2046)
  LIVER, TRAFFIC ACCIDENT, FIREARMS, LESION (6836)
  NEWBORN, LIVER, SURGERY, CIRCULATION (2956)
  NONPENETRATING, INTESTINE, MAN (1915)
  OBTUSE, ABDOMEN, CHOLEDOCHUS RUPTURE (4433)
  PANCREAS, DIAGNOSIS, THERAPY (9008)
  PANCREAS, DUODENUM, PANCREATODUODENECTOMY, SURGERY (1318)
  PANCREAS, PHYSIOPATHOLOGY, SURGERY (90013)
  PANCREAS, RUPTURE, DRAINAGE, EXCISION (6741)
  PANCREAS, RUPTURE, HEMORRHAGE, PSEUDOCYSTS (6743)
  PSEUDODIVERTICULUM, ESOPHAGUS, NEWBORN (4114)
  RUPTURE, LIVER, TREATMENT (2095)
  STOMACH, DUODENAL RUPTURE (7364)
TRICHINOSIS
  DIAGNOSIS, ENCORTON (4670)
TRICHOCEPHALIASIS
  GASTROINTESTINAL TRACT, DIAGNOSIS, COPROLOGIC TEST, SARDINIA (2239)
TRIGLYCERIDE
  ABSORPTION, DETERMINATION, INTESTINE, FAT, STEATORRHEA (3443)•
  ABSORPTION, METABOLISM (6358)•
  ACCUMULATION, LIVER, HEPATECTOMY (8606)•
  BIOSYNTHESIS, LIVER MICROSOME, ANALYSIS (2428)
  LIVER, PHOSPHOLIDPIDS, SYNTHESIS (0847)•
  LYMPH COMPOSITION, THORACIC DUCT, BILIARY OBSTRUCTION, LYMPH-TO-BLOOD RATIO (2164)•
  MEDIUM-CHAIN, DIET, INTESTINAL LYMPHANGIECTASIA, CHILDREN (1202)
  METABOLISM, INTESTINAL CONCENTRATION, LIPID MEAL (6493)•
  PLASMA, FATTY ACID, LIVER, LIPID, GLUCAGON (3967)
  TRANSPORT, FATTY LIVER, SERUM APOPROTEIN (6934)•
  TREATMENT, MALABSORPTION, LIPID (3450)
  TRIELAIDIN, INGESTION, HEPATIC LIPID, UNSATURATION (6461)
TRISOMY
  21-, DOWNS SYNDROME, HEPATITIS (2108)•
TRYPSIN
  ACUTE PANCREATITIS, CHOLEPANCREATITIS, BLOOD, PROTEIN (2787)
  AROMATIC DIAMIDINE, INHIBITORY EFFECT (2379)
  DUODENAL ACTIVITY, SCANNING, PANCREAS, PANCREATIC FUNCTION (2025)
  INHIBITION, PANCREATIC KALLICREIN (6415)
  INHIBITOR, LIVER, PANCREAS (7814)
  INHIBITOR, PANCREAS, DOG (7102)
  INHIBITORS, PANCREAS, ISOLATION (0085)•
  PANCREAS, SECRETION, PROTEIN (3854)
  TRYPSIN INHIBITOR, PANCREAS TRYPSIN SECRETION (1330)
TUBERCULOSIS
  ADENOPHATHY, COMPRESSION, HEPATIC PEDICLE, ICTERUS (4410)
  GANGLION, HEPATIC PEDICLE, COMPRESSION (4407)
  GASTRECTOMY, LEUCOCYTES, EXERCISE (1873)
  HEPATIC, ANATOMO-PATHOLOGIC/STATISTICAL CONTRIBUTIONS (3581)
  HEPATIC, CLINICALLY AUTONOMOUS, CLINICAL PICTURE, BIOPSY (0594)
  HERNIA, ESOPHAGUS (4106)
  ILEOCECUM (0389)
  ISONIAZID, LIVER DAMAGE, SERUM TRANSAMINASE (1358)
  LIVER (2853)
  MILIARY, LIVER, BONE MARROW (2086)
  PULMONARY, GASTRODUODENAL ULCER, STATISTICAL CORRELATION (0344)
  PULMONARY, LIVER, SURGERY (1372)
  PULMONARY, LIVER DISTURBANCE, LIVER FUNCTION TESTS (0575)
  STOMACH (8114)
TUMOR
  ABDOMINAL, DIAGNOSIS, GAS INSUFFLATION, PNEUMOPERITONEUM, PARIETOGRAPHY, TOMOGRAPHY (4897)•
  ABDOMEN, MALIGNANT, RADIOLOGY, DIAGNOSIS, TREATMENT, CHILDREN (6960)

ABDOMEN, PAREITOGRAPHY, PNEUMOPERITONEUM (5378)
ADENOCANTHOMA, COLON, SQUAMOUS CELL CARCINOMA (5905)
ADENOMA, BRUNNER'S GLAND, DUODENUM (1892)
ADENOMA, COLON, CARCINOMA, POLYP (4915)
ADENOMA, GALLBLADDER, EXTRA HEPATIC BILE DUCTS (6914)
ADENOMA, STOMACH, SARCOMA, DUODENUM (6610)*
AMPULLA OF VATER, DUODENUM, EXCISION (1320)
ANGIOENDOTHELIOMA, STOMACH, SMALL INTESTINE, OBSTRUCTIVE ILEUS (5795)
ANGIOMA, ALLERGY, JUVENILE CIRRHOSIS, HEPATIC, CUTANEOUS LESIONS (5285)
ANGIOPLASTIC SARCOMA, LIVER, HEMORRHAGE, DELAYED DAMAGE, THOROTRAST (5214)
ASCITES, GLYCOGEN SYNTHETASE ACTIVITY, ALKYLATING AGENTS (7173)
ASCITES, METABOLISM (2450)
ASCITES CELLS, GLYCOGEN PHOSPHORYLASE, ALKYLATING AGENTS (7172)
ASCITES HEPATOMA, TRANSPLANTED, BLOOD COMPONENTS (7559)
ASCITES TUMOR CELLS, AMEBOID MOTILITY (3562)
ASCITES TUMOR CELLS, GLYCOLYSIS, HEXOKINASE REACTION (3077)
ATRESIA, ESOPHAGUS, DEGLUTITION (1835)
BENIGN, APPENDIX, FIBROANGIOMA (1290)
BENIGN, DUODENUM, GALLBLADDER OBSTRUCTION (0338)
BENIGN, ESOPHAGUS (7314)
BENIGN, GASTRIC RESECTION, LEIOMYOMA (4169)
BENIGN, LIVER, TREATMENT (2075)
BENIGN, LYMPHOMA, STOMACH, RADIOLOGY, ULCER (5817)
BENIGN, MALIGNANT, DUODENUM (7269)
BENIGN, MYOID, POLYP, VILLOUS, STOMACH, SURGERY (4985)
BENIGN, STOMACH, DUODENUM, DIAGNOSIS SURGERY (2609)
BENIGN LIOMYOMA, STOMACH, INTESTINE (5015)
BRAIN, GASTROINTESTINAL TRACT, RADIOLOGY, PERISTALSIS, POSTOPERATIVE (2965)
CALCIFIED CAVERNOUS HEMANGIOMA, LIVER, SURGERY, RADIOLOGY (6015)
CARCINOGEN, SODIUM CYCLAMATE, SACCHARIN, SUCROSE (6515)
CARCINOID (2985)
CARCINOID, APPENDIX (7479)
CARCINOID, APPENDIX, ILEUM RECTUM (6972)
CARCINOID, DUODENAL, LANGERHANS ISLET TUMOR, ZOLLINGER-ELLISON SYNDROME (3372)
CARCINOID, INTESTINAL, THERAPY, ETIOPAHOGENESIS HUMORAL FACTORS (0392)
CARCINOID, RECTUM (1238)
CARCINOID, SYNDROME, ILEAL POLYP (4223)
CECUM, SURGERY (3483)
CELL METABOLISM, RADIATION DAMAGE, ASCITES, MOUSE (4371)*
CELLS, METASTASIS, LIVER (7558)
COLON, ANTIGEN (1254)
COLON, PLASMACYTOMA (5099)
CUTANEOUS, MELANOBLASTOMA, ANORECTUM, MALPIGHIAN MUCOSA (6724)
CYSTIC, BILE DUCT (0670)
CYSTOADENOMA, PANCREAS, SURGERY, ETIOLOGY (8228)
DETECTABILITY, LIVER, SCANNING, GAMMA-ENERGY, NUCLIDES (1814)
DUODENUM (0336)
DUODENUM, BENIGN, MALIGNANT, PATHOLOGY, RADIOLOGY (4134)*
DUODENUM, PARAGANGLIOMA (5001)
EHRLICH ASCITES CELLS, CYTOSTATIC, IN VITRO, TRANSPORT (6790)
EHRLICH-LETTRE ASCITES, LACTATE DEHYDROGENASE (7041)
ENDOSCOPY, PSEUDO-TUMOR, ESO-CARDIAL REGION (4098)
ENZYME, LARGE INTESTINE, CARCENOSTATIC THERAPY, HUMAN (1224)*
EPITHELIAL HEPATOBLASTOMA, HEMIHYPERTROPHY (7561)
EPITHELIOMA, MEDIASTINAL, ESOPHAGUS, RADIOLOGY (4962)
ESO-CARDIAL REGION, DIAGNOSIS (2539)
ESOPHAGEAL, CICATRIX STENOSIS (4101)
ESOPHAGUS, DIAGNOSIS, MULER'S TEST (5721)
ESOPHAGUS, MOUSSEAU-BRABIN'S PROBES, PALLIATIVE THERAPY (2579)
ESOPHAGUS, TRANSCATHETER BIOPSY (6536)
EXTRA-PANCREATIC, HYPOGLYCEMIA, HYPERINSULINISM, ADRENOCORTICAL (6747)
GALLBLADDER, DIAGNOSIS, ICTERUS, GALLSTONE (5306)
GALLBLADDER, LIVER (4541)
GALLBLADDER, MALIGNANT, GALLSTONE (3684)
GALLBLADDER, PAPILLOMA, ADENOMA, LIPOMA (3682)
GASTRIC, BENIGN, MYOID, HEMORRHAGE, GASTROSCOPY, POLYP, PYLORIC OBSTRUCTION (5017)
GASTRIC, MULTIPLE NODULE, LUNG HEMATOMA, CHILD (4147)
GASTRIC, PANCREATIC HETEROTOPIA, DYSTROPHY (6742)
GASTRIC COMMON BILE DUCT OCCLUSION, JAUNDICE (5796)
GIANT HEMANGIOMA, LIVER, SURGERY (7569)
GLOMUS, ARTERIOLAR VENOUS ANASTOMOSIS STOMACH, BENIGN (1041)
GLOMUS, STOMACH (6630)
HAMARTOMA, ESOPHAGUS, DIAGNOSIS (6586)
HEMANGIOMA, LIVER, RADIATION THERAPY (6017)
HEMANGIOMA, LIVER, THROMBOSIS, ORAL CONTRACEPTIVE (8433)
HEMANGIOPERICYTOMA (7423)
HEMOBILIA, SURGERY (5303)
HEPATECTOMY, HEPATOMA, BILIARY DUCT (1381)
HEPATIC, ALKALINE PHOSPHATASE, LEUCO-

CYTE, ACUTE VIRAL HEPATITIS, OBSTRUCTIVE JAUNDICE (5723)
HEPATIC, AU 198 -SCINTOGRAPHY, RADIO-I SERUM ALBUMIN (3302)
HEPATIC, CLASSIFICATION (4382)
HEPATIC, DIAGNOSIS (4380)
HEPATIC FERRITIN (7166)
HEPATIC, PERITONEOSCOPY, SPACE-OCCUPYING LESION, LIVER SCAN (5659)*
HEPATIC, RESECTION (4377)
HEPATOBLASTOMA, CHEMOTHERAPY, RADIOTHERAPY, LOBECTOMY, INFANT (8308)
HEPATOBLASTOMA, HEPATOCARCINOMA (7556)
HEPATOMA, AH 13, AH 39, CARBOHYDRATE METABOLISM, GLYCOGENESIS, GLYCOGENOLYSIS (5987)*
HEPATOMA, ALDOLASES (6818)
HEPATOMA, ALDOLASES, LIVER, HYBRID MOLECULES, YOSHIDA SCITES, RAT (5175)*
HEPATOMA, CIRRHOSIS (6829)
HEPATOMA, ENZYME ACTIVITY, DNA POLYMERASE, LIVER, RIBOSOME, MICROSOME (5429)*
HEPATOMA, FERRITIN (6813)
HEPATOMA, GLUCOCORTICOID BINDING, TYROSINE AMINOTRANSFERASE, INDUCTION, CORISOL, DEXAMETHASONE (5170)*
HEPATOMA, HIPPURIC ACID SYNTHESIS, AZO-DYE FEEDING, RAT (6004)
HEPATOMA, POLYGLOBULISM, ERYTHROCYTOSIS, ELECTROPHORESIS, LIVER BIOPSY (5189)
HEPATOMA, PYRUVATE KINASE, DIET (6821)
HYPOCHONDRIUM, ANGIOGRAPHIC DIAGNOSIS, CHILDREN (6525)
ILEAL, MECKEL'S DIVERTICULUM, CARCINOID SYNDROME (1934)
ILEUM, FIBROMA (2666)
IMPLANT, GASTRIC SEROSA (5798)
INFLAMMATORY, ILEOCECUM (7733)
INHIBITION, DIPHENYLGLYOXAL, ASCITES, IMMUNOLOGY (3830)
INTESTINAL LYMPHOMA, MALIGNANT CELIAC SYNDROME (7447)
ISLET, ULCERATION, METASTASES, INSULIN (6644)
ISLET CELL, ADENOMA, DIAGNOSIS, TREATMENT (1314)
ISLET CELL, PANCREAS, HYPOGLYCEMIA COMA, HEMIPLEGIA, TOLBUTAMIDE TEST, INSULIN (5952)
ISLET CELL, PANCREAS, ZOLLINGER-ELLISON SYNDROME (5381)
ISLET CELL, ZINC CONTENT, BETA CELLS, HISTOCHEMISTRY (3516)*
LAPAROTOMY, WOLFFIAN BODY, INTESTINAL OCCLUSION, RETROPERITONEAL CYST, PAIN (2663)
LARGE INTESTINE, X-RAY DIAGNOSIS, FIBROMA (1239)
LEIOMYOBLASTOMA, BEHAVIOR, PROGNOSIS (0698)
LEIOMYOBLASTOMA, JEJUNUM, ALCOHOL-INDUCED PAIN (3425)
LEIOMYOMA, ABDOMINAL, ESOPHAGUS, EPITHELIAL TUMOR, MESODERMAL TUMOR (5754)
LEIOMYOMA, DIGESTIVE TRACT, SYMPTOMS (0709)
LEIOMYOMA, ESOPHAGUS, SURGERY (5750)
LEIOMYOSARCOMA, MECKEL'S DIVERTICULUM (7418)
LEIOMYOSARCOMA, STOMACH, RADIOLOGY, DIAGNOSIS (4995)
LIPOMA, DUODENUM (1079)
LIPOMA, LIVER, CASE REPORT (9077)
LIVER, ASCITES, HEPATOMA (3561)
LIVER, DIETHYLNITROSAMINE-INDUCED, SERUM ALDOLASE (3081)
LIVER, HEMANGIOENDOTHELIOMA, HEMOLYTIC ANEMIA (6819)
LIVER, HEPATIC ARTERY LIGATION (7571)
LIVER, HEPATOCYTE, CARCINOGEN (4367)*
LIVER, HEPATOMA, CIRRHOSIS (4361)*
LIVER, KIDNEY, POLYGLOBULISM (1363)
LIVER, OBSTRUCTION, CHOLEDOCHUS (4421)
LIVER, OBSTRUCTIVE JAUNDICE, CIRRHOSIS TREATMENT (6011)
LIVER, PANCREAS, SCLEROSIS (5181)
LIVER, PATHOLOGY, INFANCY, CHILDHOOD (4383)
LIVER, RESECTION, RIGHT LOBE (6009)
LIVER, RIBOFLAVIN, RAT (6072)
LIVER, SCINTILLATION CAMERA, DIAGNOSIS (5670)
LIVER, SURGERY (4385)
LIVER, SURGERY, TRAUMA (2046)
LIVER, ULTRASTRUCTURE, TOXOHORMONE (6286)*
LIVER FERRITIN, RAT (6990)
LYMPHATIC STOMACH UPSET, RADIOLOGICAL TREATMENT (5786)
LYMPHOID HYPERPLASIA, COLON, CHILDREN (1992), (1993)
LYMPHOMA, ABDOMINAL PAIN, ALPHA GLOBULIN, IGA, LUMPH NODES, JEJUNAL MUCOSA, HYPOKALEMIA (5346)
LYMPHOMA, LYMPHOSARCOMA, ESOPHAGUS (4111)
LYMPHOMA, MALIGNANT, CYTODIAGNOSIS, STOMACH (4890)*
LYMPHOSARCOMA, MUCOSA, STOMACH, COLON, RECTUM (5392)
MALIGNANT, CHYLOUS ASCITES, LIVER, STOMACH (7750)
MALIGNANT, COLON, RECTUM, INCIDENCE, DISTRIBUTION (6729)
MALIGNANT, LARGE INTESTINE (1283)
MALIGNANT, LIVER, SURGERY (1382)
MALIGNANT, MELANOMA, ESOPHAGUS, CHILD (5743)
MALIGNANT, PANCREAS, CHILDREN (7506)
MALIGNANT, PRIMARY, DUODENUM (4135)
MALIGNANT, VILLOUS, ADENOMA, DUODENAL, OBSTRUCTION (6675)
MALIGNANT, VILLOUS, EXUCATIVE GASTROPATHY, HYPOPROTEINEMIA, GASTRECTOMY (1887)
MALIGNANT MELANOMA, ANUS, RECTUM (6727)
MALIGNANT MUCOCELE, APPENDIX, THROMBOEMBOLISM (3497)
MELANOMA, DUODENUM, RADIOLOGY, METASTASES, LOCALIZATION (5012)
MESENCHYMAL, RADIOTHERAPY, POLYPOID, FIBROSARCOMA, NEUROSARCOMA (6655)

  MESENCHYMOMA (3734)
  MESENCHYMOMA, CECUM (7465)
  METASTATIC, MUCOSA, SMALL INTESTINE (1939)
  MIXED, PAROTID, GARDNER'S SYNDROME, ACROMEGALY (4306)
  MORRIS HEPATOMA, HISTONE, TRYPTOPHAN PYRROLASE, TYROSINE TRANSAMINASE (7537)•
  MORRIS HEPATOMA, SERUM LIPOPROTEIN (6762)•
  MULTIPLE MYELOMA, LIVER, KAHLER'S DISEASE, HYPERLEUCOCYTOSIS, PROTEINURIA, NORMOCHROMIC ANEMIA, PROTEINEMIA (5275)
  MYOID, STOMACH, GASTRIC HEMORRHAGE, GASTRIC RESECTION, RADIOGRAPHY, METASTASES (5014)
  MYOSARCOMA, JEJUNUM (7425)
  NEOPLASM, NEURINOMATA, LEIOMYOMATA, SMALL INTESTINE (0384)
  NEUROBLASTOMA, LIVER, NEWBORN (4392)
  NOVIKOFF HEPATOMA, HISTONE DEACETYLASE (6459)
  NOVIKOFF HEPATOMA, LIVER, OLIGONUCLEOTIDES, 28S RIBOSOMAL RNA (6817)
  NOVIKOFF HEPATOMA, RNA TURNOVER, DEOXYTHYMIDINE KINASE (7117)•
  PANCREAS, CYSTS, RADIOLOGY, JAUNDICE, RESECTION (5140)
  PANCREAS, DIAGNOSIS (7241)
  PANCREAS, DIAGNOSIS, PAIN (8242)
  PANCREAS, DIAGNOSIS, ULTRA SOUND (8053)
  PANCREAS, ISLET CELL, HORMONE (2772)
  PANCREAS, SURGERY, DIFFERENTIATION (8240)
  PANCREAS, ZOLLINGER-ELLISON SYNDROME (7747)
  PANCREAS, ZOLLINGER-ELLISON SYNDROME, DIAGNOSIS (2773)
  PANCREATIC, ADENOMA, CHOLANGIOGRAAHY, ARTERIOGRAPHY, CANCER, MICROSCOPIC EXAMINATION (5146)
  PANCREATIC, DUODENAL, ULCERATION, ENDOCRINE (6644)
  PANCREATIC, NONBETA ISLET CELL, DIARRHEAL SYNDROME (3520)
  PANCREATIC ISLET CELL, CHOLERA (6231)
  PARATHYROID ADENOMA, DUODENAL CARCINOMA (6621)
  PARATHYROID ADENOMA, HYPERCALCEMIA, PEPTIC ULCER (5836)
  PEPTIC ULCER, ZOLLINGER-ELLISON SYNDROME, GASTRECTOMY (2967)
  PHEOCHROMOCYTOMA, GASTRIC HEMORRHAGE, CATECHOLAMINE SECRETION (7717)
  PLASMA CELL GRANULOMA, STOMACH (3378)
  PLASMACYTOMA, STOMACH, SURGERY (7347)
  POLYCYTHEMIA, CIRRHOSIS, HEPATOCELLULAR CARCINOMA (5193)
  PRESACRAL, RADIOLOGY, CHILDREN (7489)
  PRIMARY, MALIGNANT, SMALL INTESTINE, LARGE INTESTINE (6682)
  PRIMARY, STOMACH, CHILDREN, RESECTION (6647)
  PRIMARY HEPATIC, PATHOLOGIC ANATOMY (4379)
  PRIMARY MALIGNANT, ILEUM, JEJUNUM (7701)
  PSEUDO-, GASTRIC FUNDUS, ACCESSORY SPLEEN (1068)
  PSEUDO-, SIGMOID COLON, DOUBLE CONTRAST, RADIOGRAPHY, DIVERTICULITIS (4894)•
  RECTUM, GARDNER'S SYNDROME (6959)
  RECTUM, RADIOACTIVE PHOSPHORUS, EVALUATION (4912)
  RETROPERITONEAL, ABDOMEN, INFANT (4914)
  RETROPERITONEAL, COLON, RADIOTHERAPY (6975)
  RHODAMINE SARCOMA, LIVER ENZYMES (7042)
  SCHWANNOMA, HISTOCYTOFIBROMA, SMALL INTESTINE, INTESTINAL INVAGINATION (2681)
  SECONDARY, LIVER, HEPATIC ARTERY, 5-FLUOROURACIL (8301)
  SMALL INTESTINE (3422)
  SMALL INTESTINE, MALIGNANT (1177)
  SMALL INTESTINE, PERFORATION, OBSTRUCTION (5869)
  SPLENIC, PERFORATION, STOMACH, METASTASES, CACHEXIA (5011)
  SPONTANEOUS, DIGESTIVE TRACT, UNTREATED C57BL MICE (1594)
  STOMACH, ESOPHAGUS, MALIGNANT, BENIGN, GASTROSCOPY, HISTUS HERNIA, POLYP (4957)
  STOMACH, 4-NITROQUINOLINE 1-OXIDE, ALKYLBENZENESULFONATE, ADENOCARCINOMA (7328)•
  STOMACH, GASTRECTOMY, DUODENAL ULCER, GASTRIC ULCER (8119)
  STOMACH, GLANDULAR, FIBROSARCOMA, ADENOCARCINOMA (8088)•
  STOMACH, INTESTINE, GASTROPTOSIS, ENTEROPTOSIS, WEIGHT LOSS, EPIGASTRIC PAIN (5018)
  STOMACH, MALIGNANT, CYTOLOGY, DIAGNOSIS (4930)
  STOMACH, MESENCHYME, DIAGNOSIS (3373)
  STOMACH, MUSCLE, POTENTIAL (4154)
  STOMACH, NEURINOMA (4987)
  STOMACH, STENOSIS, ESOPHAGEAL HERNIA, DUODENUM, DIVERTICULUM (5802)
  SUBCUTANEOUS HEPATOMA, METASTASES (7560)
  SYMPATHOGONIOMA, ESOPHAGUS, ADULT (0995)
  TRANSPLANTABLE, MORRIS HEPATOMA, CELL CYCLES (6816)
  ULCEROGENIC, PANCREAS (2022)
  URETHAN, HEPATECTOMY (8268)•
  VILLOUS, ADENOMA, COLON, RECTUM (5940)
  VILLOUS, ELECTROLYTE, RECTUM (4303)
  VILLOUS, STOMACH, MORPHOLOGY, MALIGNANCY (8112)
  XANTHOFIBROGRANULOMA, LIVER, MULTIFOCAL FIBROMATOSIS, BILE DUCT (5326)
TYPHOID FEVER
  CARRIERS, VI HEMAGGLUTINATION TEST (8019)
  CHLORAMPHENICOL, METAMPICILLIN, CLINICAL COMPARISON (2995)
  ENDEMIC, RAILWAY POPULATION, AJMER (3761)

- ILEUM, PERFORATION, SURGERY (8902)
- SALMONELLA, ANTIBIOTIC, CHILDREN (2976)
- SALMONELLOSIS, ANTIBIOTIC THERAPY, ENTEROHEPATIC CIRCULATION (1972)•
- SALMONELLOSIS, ANTIBIOTIC THERAPY, WIDAL TEST (1973)•
- SEROLOGICAL DIAGNOSIS, HEMAGGLUTINATION, VI-ANTIBODIES, PARATYPHOID (6538)
- SERUM ADENOSINE DEAMINASE (4610)
- SYMPTOMS, DIAGNOSTIC DISTINCTIONS (3766)
- TRIMETHOPRIM, SULPHAMETHOXAZOLE, PARATYPHOID FEVER (0697)
- VACCINATION, IMMUNOLOGY, RABBIT (7205)

TYROSINE
- DEGRADATION, CECUM, RAT (1274)
- GASTROINTESTINAL TRACT, AMINO ACID (4613)
- TRANSAMINASE, PYRIDOXINE, HOLOENZYME (6441)•

UBIQUINONE
- CHOLESTEROLGENESIS, REGULATION, LIVER (3205)

ULCER
- ABSORPTION, SECRETION, TRACER TECHNIQUE (2825)
- ACUTE, EROSION, NECROSIS, GASTROINTESTINAL TRACT (1123)
- ACUTE, GASTRIC, DUODENAL, COMPLICATIONS (5804)
- ACUTE, STOMACH, DUODENUM (5806)
- ACUTE, STOMACH, EROSIONS, SPINAL CORD DISEASE (7332)
- ACUTE, STOMACH, INTESTINE, HEMORRHAGE (6193)
- ADRENERGIC BLOCKING AGENT, RAT (5829)•
- ANASTOMOTIC, GASTRIC SURGERY, SYMPTOMATOLOGY, RADIOLOGY (8140)
- ANASTOMOTIC, HEMORRHAGE, SEPTICEMIA, GRAM NEGATIVE (2644)
- ANASTOMOTIC, PERFORATION, JEJUNUM, DUODENUM (1200)
- ANORECTAL, NECROTIZING, LEUKEMIA, PSEUDOMONAS INFECTION (0490)
- ANTRAL PORTION OF STOMACH, HEMORRHAGIC EROSION, ANTRAL SPASM (1874)
- BARRETT'S, ESOPHAGUS, MUCOSAL ACID SECRETION (0260)
- BENIGN, SMALL INTESTINE (7424)
- CALCIUM, HISTAMINE, GASTRIC MUCOSA, METABOLISM (2640)
- CANCER, MORTALITY, COMPARISON, JAPAN (1096)
- CAROTID ARTERY, CIRCULATION, SURGERY (2962)
- CECAL, SOLITARY, SURGERY (5902)
- CHOLECYSTITIS, HEMORRHAGE, GALLBLADDER (3668)
- CHOLELITHIASIS, POST-VAGOTOMY, GASTRECTOMY, DIARRHEA (5321)
- CHRONIC, PEPTIC, MAN, SURGERY (1140)
- CHRONIC, SMALL INTESTINE, SURGERY (5868)
- CHRONIC GASTRIC, DUODENAL, SELECTIVE SURGERY (8881)
- COLITIS, SURGERY (5124)
- COLON, COLITIS, SURGERY (5133)
- COLONIC, ADENOCARCINOMA, CLOSTRIDIAL MYONECROSIS, RECOVERY (0480)
- CONSTRICTED, FORMATION, ULTRAVIOLET, RADIATION (0316)
- CORTICOSTEROIDS, SULPIRIDE, NEUROSURGICAL RESUSCITATION (7349)
- DRUG EFFECT, PROTEIN, TRACER TECHNIQUE (2488)
- DUODENAL, ACID OUTPUT, HISTAMINE (3410)
- DUODENAL, ACID SECRETION, CALCIUM CARBONATE (5768)
- DUODENAL, ACID SECRETION, HISTALOG (5678)
- DUODENAL, ACUTE PANCREATITIS, EXTRACORPOREAL CIRCULATION (5976)
- DUODENAL, BISMUTHBILE, RECTOCOLITIS, SORBITOL (5352)
- DUODENAL, BLEEDING, SURGERY, NEONATE (4200)
- DUODENAL, CARCINOID TUMOR, MECKEL'S DIVERTICULUM (0371)
- DUODENAL, CHILDHOOD (2652)
- DUODENAL, CHRONIC, PROXIMAL SELECTIVE VAGOTOMY (3722)
- DUODENAL, CHRONIC, SURGERY, CHILDREN (5837)
- DUODENAL, COEXISTING HIATUS HERNIA, TREATMENT (3325)
- DUODENAL, DIETARY EFFECT (0341)
- DUODENAL, DIETARY TREATMENT (1149)
- DUODENAL, DYSTONIA, VAGOTOMY, GASTROENTEROSTOMY (6663)
- DUODENAL, ELECTROGASTROGRAPHY (1118)
- DUODENAL, FUNDIC MUCOSA, GASTRIC, HISTOPAHTOLOGY, HIATAL HERNIA (8831)
- DUODENAL, GASTRECTOMY, PYLOROPLASTY, PANCREAS (4993)
- DUODENAL, GASTRIC, ACIDITY TITRATION, HISTAMINE, BLOOD GROUP ABO, BLOOD GROUP ABH (2594)
- DUODENAL, GASTRIC, GALLSTONES, X-RAY, SEX DIFFERENCE (5041)•
- DUODENAL, GASTRIC, RESECTION, VAGOTOMY, PERFORATION, PYLORIC STENOSIS, HYPERSECRETION (4951)
- DUODENAL, GASTRIC, SMOOTH MUSCLE CONTRACTION, BLOOD (5521)
- DUODENAL, GASTRIC, VAGOTOMY (1910)
- DUODENAL, GASTRIC ACID, INTUBATION, SURGERY (4212)
- DUODENAL, GASTRIC ACID SECRETION, VAGOTOMY, ATROPINE SULFATE (0270)•
- DUODENAL, GASTRIC FREEZING, FAILURE (2720)
- DUODENAL, GASTRIC RESECTION (3411)
- DUODENAL, GASTRIC RESECTION, ENZYMATIC INHIBITOR (4208)
- DUODENAL, GASTRIC RESECTION, HEMORRHAGE (7339)
- DUODENAL, GASTRIC RESECTION, MORTALITY RATE, COMPLICATIONS (8884)
- DUODENAL, GASTRIC RESECTION, WOMEN (3398)
- DUODENAL, GASTRIC SECRETION, MEASUREMENT (1678)
- DUODENAL, GASTRIC SECRETION, REDUC-

TION, OSMOLAR SALINE, GLUCOSE (3391)*
DUODENAL, GASTRIC VAGOTOMY, HEMIGASTRECTOMY, ANTRECTOMY (1147)
DUODENAL, HEMIGASTRECTOMY, GASTRODUODENOSTOMY (3408)
DUODENAL, HEMORRHAGE, SURGERY (1915)
DUODENAL, HYPERPARATHYROIDISM, DIATHESIS, PARATHYROID ADENOMA (5840)
DUODENAL, PEDIATRICS, PSYCHOLOGY (1912)
DUODENAL, PEPTIC, GASTRIC SECRETION, IRON BINDING CAPACITY (3390)*
DUODENAL, PEPTIC, GASTRIC SECRETION, PENTAGASTRIN, EFFECT, HYOSCYAMINE (3387)*
DUODENAL, PERFORATED, VAGOTOMY, DRAINAGE (2653)
DUODENAL, PERFORATION (4201)
DUODENAL, PERFORATION, HEMORRHAGE, SURGERY (2636)
DUODENAL, PERFORATION, STENOSIS (1146)
DUODENAL, PYLOROPLASTY, RADIOLOGICAL ASSESSMENT (2610)
DUODENAL, SELECTIVE, VAGOTOMY, PARIETAL CELL MASS (8880)*
DUODENAL, SERUM IRON, SERUM TRANSFERRIN, GASTRECTOMY (1127)
DUODENAL, STOMACH, ANTICHOLINERGIC (1828)
DUODENAL, STOMACH, SECRETION, ATROPINE (2635)
DUODENAL, STOMACH, SURGERY (1920)
DUODENAL, SURGERY (7388)
DUODENAL, SURGERY, GASTRIC SECRETION (5845)
DUODENAL, SURGERY, GASTRIC VAGOTOMY, ANTRECTOMY (3405)
DUODENAL, SURGERY, SECRETION TEST, PROGNOSIS, ERROR, VAGOTOMY, RESECTION, ACIDITY, HISTAMINE STIMULATION (5036)
DUODENAL, SURGERY, VAGOTOMY (1906)
DUODENAL, SURGICAL TREATMENT (2651)
DUODENAL, ULCER COMPLICATIONS, PATHOLOGY (1035)
DUODENAL, VAGOTOMY (7402)
DUODENAL, VAGOTOMY, APPRAISAL, INSULIN-TEST (0343)
DUODENAL, VAGOTOMY, DRAINAGE (6662)
DUODENAL, VAGOTOMY, SURGERY (1148), (1907)
DUODENAL ANTICHOLINERGICA, GASTRIC ACID SECRETION (1112)*
DUODENUM, ANTIPEPTIC, ANTICHOLINERGIC (6658)*
DUODENUM, CIRRHOSIS, HEMORRHAGE (4038)
DUODENUM, COMPRESSION, RADIOGRAPHY (4090)
DUODENUM, GASTRIC RESECTION, PANCREATITIS (5155)
DUODENUM, GASTRIC SECRETION, ACID (5033)
DUODENUM, GASTRIC SECRETION, DIAGNOSIS (7226)
DUODENUM, GASTRIC SECRETION, ZOLLINGER-ELLISON SYNDROME (3265)*
DUODENUM, HEMORRHAGE (3379)
DUODENUM, HEREDITY (5852)
DUODENUM, HISTAMINE, GASTRIN, GASTRIC SECRETION, PEPSIN (4935)
DUODENUM, HISTAMINE, INSULIN, GASTRIC SECRETION (8886)
DUODENUM, MUCOSA, BIOPSY, TELEMETRY (5847)
DUODENUM, PERFORATION, PYLOROPLASTY (5028)
DUODENUM, PERFORATION, SUTURE (4190)
DUODENUM, PYLOROPLASTY, VAGOTOMY (5842)
DUODENUM, PYLORUS, LIGATION, ESOPHAGUS (4191)
DUODENUM, SECRETION, STOMACH, EMPTYING, ACID, HETERONIUM BROMIDE (4792)*
DUODENUM, SPLANCHNICECTOMY, VAGOTOMY (8892)
DUODENUM, STOMACH, GASTRIC JUICE, HEMATOPOIESIS (7409)
DUODENUM, SURGERY (4196), (4899), (7389)
DUODENUM, SURGERY, COMPLICATIONS (8111)
DUODENUM, SURGERY, VAGOTOMY (5778)
DUODENUM, VAGOTOMY, PARIETAL CELL
DUODENUM, VAGOTOMY, ANTRECTOMY, PYLOROPLASTY (8093)
MASS (5030)
DYSBACTERIOSIS, LARGE INTESTINE, COLITIS, ANTIBIOTIC, TOXIC DILATATION (2748)
ESOPHAGEAL, HIATAL HERNIA, PREGNANCY (4100)
ESOPHAGUS, COLUMNAR EPITHELIUM, BARRETT'S SYNDROME (7301)
ESOPHAGUS, PERFORATION, LUNG (1833)
ESOPHAGUS, ULCERATIVE COLITIS, DYSPHAGIA, STRICTURE (0499)
EXPERIMENTAL, ANTICHOLINERGIC AGENTS STOMACH (1019)*
EXPERIMENTAL, STOMACH, PREVENTION, MUCOPOLYSACCHARIDE, SYNTHESIS, RAT (3345)
GASTRECTOMY, CANCER, GASTRIC STUMP (1145)
GASTRECTOMY, GASTRIC ACID, ACHYLIA (4136)
GASTRIC (4124)
GASTRIC, ACHLORHYDRIA, HEATING, FREEZING, DOG (5828)*
GASTRIC, ACID SECRETION (7268)
GASTRIC, ACUTE, POTASSIUM CHLORIDE, HISTOLOGY (2655)
GASTRIC, ANXIOSPASMOLYTIC, DIGLIUM, PSYCHOSOMATIC ORIGIN (6665)
GASTRIC, ASPIRIN INGESTION (6661)
GASTRIC, BILLROTH-II-RESECTION, FIBROMYOMA, ULCER, BENIGN TUMOR (4980)
GASTRIC, BIOCHEMICAL-CELLULAR-MORPHOLOGY (1022)*
GASTRIC, CANCER (6617)
GASTRIC, CANCER, AMINO ACID (2611)
GASTRIC, CARCINOMA, ATHEROSCLEROSIS, GERIATRICS, RADIOLOGY (6620)

GASTRIC, CEREBELLAR LESION (2645)
GASTRIC, CHILD, STENOSIS, GASTRECTOMY, GASTRODUODENOSTOMY (2595)
GASTRIC, CHRONIC, MALIGNANCY (4202)
GASTRIC, COAGULOGRAM, THROMBOELASTOGRAM (7403)
GASTRIC, DIABETES MELLITUS, INSULIN, HYDROCHLORIC ACID, GASTRIC JUICE (2599)
GASTRIC, DIETARY PROTEINS (4168)
GASTRIC, DUODENAL, ABSORPTION, SMALL INTESTINE (5888)
GASTRIC, DUODENAL, ANTIBODY, DELOMORPHOUS CELL, INTRINSIC FACTOR (2952)
GASTRIC, DUODENAL, BLOOD GLUCOSE (1128)
GASTRIC, DUODENAL, CARBENOXOLONE (7841)
GASTRIC, DUODENAL, CHRONIC HEPATITIS CIRRHOSIS (0351)
GASTRIC, DUODENAL, GASTRIC STASIS, SURGERY (8136)
GASTRIC, DUODENAL, GASTROSCOPY, DIAGNOSIS (5717)
GASTRIC, DUODENAL, GERIATRICS, GASTRECTOMY, SUTURE, GASTROENTEROSTOMY (2638)
GASTRIC, DUODENAL, HEMORRHAGE, PHENOTHIAZINES, SURGERY (5040)
GASTRIC, DUODENAL, INDICATION, OPERATION, BETAZOLE TEST (0181)*
GASTRIC, DUODENAL, NEUROGENIC THEORY, ENDOCRINE THEORY, HISTAMINE THEORY (6669)
GASTRIC, DUODENAL, OPISTHORCHOSIS, DIAGNOSIS, SURGERY, CHOLECYSTITIS (3009)
GASTRIC, DUODENAL, PEPTIC, STEROID HORMONE, PROTEIN METABOLISM (5849)
GASTRIC, DUODENAL, PSYCHOPARMACOLOGIC DRUGS (4580)
GASTRIC, DUODENAL, SECRETION, SURGERY (7400)
GASTRIC, DUODENAL, STOMACH RESECTION (4210)
GASTRIC, DUODENAL, STRESS, POSTOPERATIVE, ACUTE HEMORRHAGE (2632)
GASTRIC, DUODENAL, SURGERY (2627), (3402), (3412), (7390)
GASTRIC, DUODENAL, UPPER GASTROINTESTINAL BLEEDING (0281)
GASTRIC, DUODENAL, UPPER GASTROINTESTINAL TRACT, HEMORRHAGE (7702)
GASTRIC, DUODENUM, CLINICAL TREATMENT (2626)
GASTRIC, DYSPEPSIA, REGURGITATION, ENDOSCOPY, RADIOLOGY (6237)
GASTRIC, ELECTROGASTROGRAM, STRESS, RAT (3294)
GASTRIC, ELECTROGASTOGRAPHY (1118)
GASTRIC, EMBOLISM, GASTRIC CONTENTS, TRAUMATIC RUPTURE, GASTRIC TUBE, AGRANULOCYTOSIS (5833)
GASTRIC, GASTRIC ACID, MUCOSA, DEFENSE MECHANISM (5831)
GASTRIC, GASTROBRONCHIAL FISTULA, PERFORATION, RESECTION, DRAINAGE (2596)
GASTRIC, GASTRO-COLIC FISTULA (6994)
GASTRIC, GASTROPULGITE THERAPY, GASTRIC PH-RADIOMETRY (8134)
GASTRIC, HEALING, ROENTGEN FEATURES, CARCINOMA (8836)
GASTRIC, HEALING-PROCESS, PATHOGENESIS (0269)*
GASTRIC, HEMORRHAGE, HILUS LIENIS, SURGERY (2637)
GASTRIC, INDUCED, INDOMETHACIN (8132)*
GASTRIC, INTESTINAL, SULFATION, POLYSACCHARIDE (6659)*
GASTRIC, LIVER, CELL, PARACRYSTALLINE HYALOPLASM, MITOCHONDRIA (2815)
GASTRIC, LYMPHOMATOSIS (5817)
GASTRIC, LYMPHORETICULAR HYPERPLASIA (5780)
GASTRIC, MUCOPROTEIN (6654)
GASTRIC, NECROSIS, FUNDUS, PITRESSIN, CORTISONE (5764)*
GASTRIC, NEOPLASMS, DIAGNOSIS (0466)
GASTRIC, PARASYMPATHOLYTICS, SURGICAL VAGOTOMY (1023)*
GASTRIC, PEPTIC, DUODENAL, GASTRODUODENITIS, DRUG EFFECT (2634)
GASTRIC, PERFORATION, CARDIA, LEFT VENTRICLE (5039)
GASTRIC, PERFORATION, PREGNANCY (2648)
GASTRIC, PHYCOMYCOSIS (0295)
GASTRIC, PROMETHAZINE, HISTAMINE, GASTRIN (6615)*
GASTRIC, PYLORIC, CONGENITAL DUODENAL STENOSIS (0294)
GASTRIC, PYLORIC STENOSIS, CARCINOMA, GASTRITIS (6618)
GASTRIC, RELAPSE, RECURRENCE, PROTRACTION (6664)
GASTRIC, REPARATIVE SURGERY, PEPTIC ULCER, DUMPING SYNDROME, AFFERENT LOOP, VAGOTOMY, PYLORIC ANTRUM (5024)
GASTRIC, RESECTION (5811)
GASTRIC, RESERPINE, DOPA, NEUROGENOUS DYSTROPHY (0329)
GASTRIC, RESTRAINT, ADRENAL CORTEX, RAT (0077)
GASTRIC, SECRETION, ACIDITY, STOMACH TUBE, SURGERY (5653)*
GASTRIC, SECRETION, CORTICOIDS (7099)
GASTRIC, SECRETION, SURGERY (7254)
GASTRIC, STRESS, BEHAVIOR, RAT (2631)*
GASTRIC, SUBTOTAL GASTRECTOMY, INTESTINAL TRANSIT, DIET (8099)
GASTRIC, SURGERY, DUMPING SYNDROME, VAGOTOMY (1105)
GASTRIC, SURGERY, DUODENUM (2600)
GASTRIC, SURGERY, PARENTERAL NUTRITION (7407)
GASTRIC, SURGERY, STATISTICAL ANALYSIS (4209)
GASTRIC, SYRINGOMYELIA, LIVER FUNCTION (7548)
GASTRIC, VAGOTOMY (7392)
GASTRIC, VAGOTOMY, GASTRIC STASIS, HEMORRHAGE (5687)
GASTRIC, XYLAMIDE, MUCOSA, GASTRODUODENITIS (7387)*
GASTRIC ANTRUM, TUMOR, PATHOLOGY (8096)

GASTRIC JUICE, HYDROGEN ION CONCENTRATION (2381)
GASTRIC AND DUODENAL, HEMORRHAGE, INCIDENCE, CHILDREN (8890)
GASTRODUODENAL, ACUTE COMPLICATIONS HEMORRHAGE (0348)
GASTRODUODENAL, BILLROTH I RESECTION, VAGOTOMY (5846)
GASTRODUODENAL, BILLROTH-II/FINSTERER RESECTION (4214)
GASTRODUODENAL, BURNS, PYLOROPLASTY, HEMORRHAGE (5347)
GASTRODUODENAL, DOGMATIL, SULPIRIDE, RADIOLOGY, HYPOTHALAMIC CENTER (5035)
GASTRODUODENAL, ESOPHAGUS, ENDOSCOPY, HYPERACIDITY (4958)
GASTRODUODENAL, ETIOLOGY, HYPERACIDITY (1144)
GASTRODUODENAL, ETIOPATHOGENESIS (0347)
GASTRODUODENAL, GASTRIC ACIDITY, CLINICAL EVALUATION (1875)
GASTRODUODENAL, HEMORRHAGE, PANCREATITIS, BLOOD TRANSFUSION (4994)
GASTRODUODENAL, HEMORRHAGE, PERFORATION, STENOSIS, MALIGNANCY, PROTEINASE, INHIBITION (5034)
GASTRODUODENAL, INCIDENCE, DETECTION, YOUNG ADULTS (8895)
GASTRODUODENAL, PARTIAL GASTRECTOMY, ETIOLOGY, PATHOGENESIS (8870)
GASTRODUODENAL, PERFORATION (0219)
GASTRODUODENAL, PULMONARY TUBERCULOSIS (0344)
GASTRODUODENAL, PYLOROPLASTY, VAGOTOMY (6627)
GASTRODUODENAL, SULPIRIDE, HEMORRHAGE, DUMPING SYNDROME, RADIOLOGY, ARTERIAL TENSION (5038)
GASTRODUODENAL, SULPIRIDE, TREATMENT, MIGRAINE, ANTIEMETIC, ENDOSCOPY, RADIOLOGY (6242)
GASTRODUODENAL, SURGERY, GASTRIC SECRETION (3396)
GASTRODUODENAL, SURGERY, SCANDINAVIA (4203)
GASTRODUODENAL, SYNDROME, SULPIRIDEX TREATMENT (3407)
GASTRODUODENAL, TREATMENT, GASTRECTOMY, ANTRECTOMY, PYLOROPLASTY (5022)
GASTRODUODENAL PEPTIC, GASTRODUODENOSTOMY, GASTRECTOMY, LIVER, GALLBLADDER (2588)
GASTROINTESTINAL HEMORRHAGE, ESOPHAGEAL VARICES, ENDOSCOPY (5368)
GASTROINTESTINAL TRACT, SURGERY, ULCER, IATROGENESIS, OBSTRUCTION (2959)
HEMORRHAGE, CANCER, SURGERY (5372)
HEMORRHAGE, UPPER GASTROINTESTINAL TRACT (0695)
HEMORRHAGE, VAGOTOMY, SURGERY (2207)
HEMORRHAGIC, GASTRIC RESECTION, DELAYED RESULTS, WEIGHT CONTROL, HYPERCHRONIC ANEMIA, PEPTIC ULCER, RELAPAROTOMY (5783)
HEMORRHAGIC, GASTRODUODENAL, STRESS, SURGERY (8135)
HEMORRHAGIC RECTO-COLITIS, COMPLICATIONS (4309)
ILEOCOLITIS, IMMUNOSUPPRESSIVES, LYMPHOID HYPERTROPHY, CORTICOIDS (5135)
INSIDON, PSYCHOSOMATIC ILLNESS (2209)
INTESTINAL, POTASSIUM CHLORIDE INGESTION, ENTERIC COATING (1930)
INTESTINE, MECKEL'S DIVERTICULUM, ECTOPIC TISSUE (0367)
INTESTINE, SMALL, ENTEROHEPATIC CYCLE, FLUFENAMIC ACID (6671)*
INTESTINE, STENOSIS, POTASSIUM CHLORIDE, MUCOSA (5048)
JEJUNAL, DUODENAL, RESECTION, VAGOTOMY, PERITONITIS, DYSTONIA, PAIN (5025)
LEARNING (5766)
MECKEL'S DIVERTICULUM, PERFORATION (3430)
MUCOSA, HYPERSECRETION, STRESS (1913)
MUCOSA, STOMACH, ADENOSINE (5782)
MULTIPLE, GASTRIC, LEUKEMIA, GASTROSCOPY (8138)
MULTIPLE, STOMACH, DUODENUM (0289)
NECK, HIATAL HERNIA (0267)
NONSPECIFIC, SMALL INTESTINE, PERFORATICE (0383)
PANCREAS, ANOMALY, SURGERY, DIAGNOSIS, STENOSIS (2782)
PEPTIC, AUTOPLASTIC ESOPHAGUS (7318)
PEPTIC, BLEEDING, AGE EFFECT, ABO BLOOD GROUP EFFECT (3404)
PEPTIC, BULBAR, SECRETION, VAGOPAX THERAPHY (0271)*
PEPTIC, CALCIUM ABSORPTION (0035)
PEPTIC, CHOLINERGIC ACTIVITY, STOMACH (5848)
PEPTIC, CHRONIC DUODENAL, VAGOTOMY, DRAINAGE (0339)*
PEPTIC, CHRONIC GASTRITIS (1121)
PEPTIC, CIRRHOSIS, PREDNISONE, ASCITES (6900)
PEPTIC, COMPLICATIONS, ELECTROGASTROGRAPHY (8787)
PEPTIC, CORONARY DISEASE, CIRCULATION, DIET (2639)
PEPTIC, CORTICOSTEROIDS, CATECHOLAMINES, URINE, EXCRETION (2641)
PEPTIC, DIAGNOSIS, CHILDREN (7406)
PEPTIC, DIARRHEA, VAGOTOMY, PYLOROPLASTY, GASTROJEJUNOSTOMY (2642)
PEPTIC, DUODENAL, FAMILY, OCCUPATION, RELIGION (5839)
PEPTIC, DUODENAL MUCOSA, MUCOPOLYSACCHARIDES (7394)
PEPTIC, DUODENAL, STRYCHNINE TREATMENT (1116)*
PEPTIC, DUODENUM, CHRONIC RENAL INSUFFICIENCY (7398)
PEPTIC, DUODENUM, GASTRIC MUCOSA, HISTOLOGY (5826)*
PEPTIC, DUODENUM, SURGERY (1129)
PEPTIC, DUODENUM, SYMPTOMS (2650)
PEPTIC, DUODENUM, TREATMENT, STOMACH (4195)
PEPTIC, DUODENUM, VAGOTOMY (1921)

PEPTIC, DUODENUM, XYLAMIDE, STOMACH (4193)
PEPTIC, EPIDEMIOLOGY, CHILDHOOD (3397)
PEPTIC, ESOPHAGOTHORACIC FISTULA, REFLUX, DUODENUM (6605)
PEPTIC, ESOPHAGUS, HIATAL HERNIA, CORROSIVE BURNS (1009)
PEPTIC, ESOPHAGUS, LUNG, PERFORATION, HIATAL HERNIA (8815)
PEPTIC, EUGASTRIN (2649)
PEPTIC, EXPERIMENTAL, TREATMENT, PROTEASE INHIBITORS (3392)•
PEPTIC, GALLBLADDER DISEASE, RADIOLOGY (6668)
PEPTIC, GASTRECTOMY, GASTRODUODENAL ANASTOMOSIS (8893)
PEPTIC, GASTRECTOMY, VAGOTOMY (6660)
PEPTIC, GASTRIC, DUODENAL (3395)
PEPTIC, GASTRIC, DUODENAL, CHRONIC GASTRITIS, SURGERY (6195)
PEPTIC, GASTRIC, DUODENAL, FAMILY (5838)
PEPTIC, GASTRIC, DUODENAL, X-RAY, PYRILENE TEST (8043)
PEPTIC, GASTRIC, TREATMENT (1116)•
PEPTIC, GASTRIC ACID SECRETION, PENTAGASTRIN, GLUCAGON (0790)•
PEPTIC, GASTRIC HYPERSECRETION, LONG-LASTING NEUTRALIZATION, FATTY ANTACID EMULSION (8862)
PEPTIC, GASTRIC MUCOSAL SUSCEPTIBILITY STEROIDS (7832)•
PEPTIC, GASTRIC MUCOUS MEMBRANE, HEPATIC CIRRHOSIS (1122)
PEPTIC, GASTRIC OUTLET OBSTRUCTION (1136)
PEPTIC, GASTRIC RADIOLOGY, DUODENAL RADIOLOGY, GASTRIC ACID SECRETION (3403)
PEPTIC, GASTRIC SECRETION (7396), (7405)
PEPTIC, GASTRIC SECRETION, HISTAMINE STIMULATED (0354)
PEPTIC, GASTRIN, GASTRIC, DUODENAL (7384)•
PEPTIC, GASTRODUODENAL, INCIDENCE, ALTITUDE (7385)•
PEPTIC, GASTRODUODENAL, INFLAMMATION (1923)
PEPTIC, GASTRODUODENAL, SURGICAL TREATMENT (1924)
PEPTIC, GASTROINTESTINAL TRACT DISEASE, PEPSIN, GASTRIC JUICE (2955)
PEPTIC, GASTROJEJUNAL FISTULA, TREATMENT (1120)
PEPTIC, HEMORRHAGE, CLINICAL DIAGNOSIS, CHARACTERISTICS (1124)
PEPTIC, HEMORRHAGE, SURGERY (1141), (4172)
PEPTIC, HISTAMINE INFUSION, MUCUS DEFICIENCY (1111)•
PEPTIC, HYPERACIDITY, DEFENSE MECHANISMS, MUCOSAL PROTECTION (1125)
PEPTIC, HYPERCHLORHYDRIA, STOMACH, DUODENUM (1118)
PEPTIC, HYPOALBUMINEMIA (0353)
PEPTIC, INHIBITION, PANCREATIC LIPID, NEUTRAL FAT (4205)
PEPTIC, LACTOSE MALABSORPTION, DISACCHARIDASES (1113)•
PEPTIC, LIVER DYSFUNCTION (6657)•
PEPTIC, PARATHYROID ADENOMA, HYPERCALCEMIA (5836)
PEPTIC, PATHOGENESIS, GENETIC FACTOR (7399)
PEPTIC, PERFORATED, PERITONEUM, FREE, SURGERY (1126)
PEPTIC, PERFORATED, SUTURE (0342)
PEPTIC, PERFORATION, DIAGNOSIS TREATMENT (7408)
PEPTIC, PERFORATION, GASTRECTOMY, ANATOMOPATHOLOGY (8889)
PEPTIC, PERFORATION, MORTALITY, ISLAND COMMUNITY (8139)
PEPTIC, PERITONITIS, APPENDICITIS, DIVERTICULITIS (6961)
PEPTIC, PH, FECES (7680)•
PEPTIC, PORTACAVAL SHUNT, PROPHYLAXIS, ALCOHOLISM (6233)
PEPTIC, POST-OPERATIVE INCIDENCE (1917)
PEPTIC, PREGNANCY (4211)
PEPTIC, PREGNANCY, HEMORRHAGE, PERFORATION, SURGERY (0352)
PEPTIC, PYLOROPLASTY, VAGOTOMY, CHILDREN (8117)
PEPTIC, RECURRENT, SURGERY (1130)
PEPTIC, RESECTION, ANTROPYLOECTOMY, VAGOTOMY (2654)
PEPTIC, SALIVA PROTECTION, GASTRIC JUICE, BILE, DUODENUM (5832)
PEPTIC, SMOKING, STOMACH, DUODENUM (5029)
PEPTIC, STOMACH, DIAGNOSIS, SURGERY (5709)
PEPTIC, STOMACH, DUODENUM, DRUG THERAPY (1922)
PEPTIC, STOMACH, DUODENUM, GLUCOCORTICOID (5850)
PEPTIC, STOMACH, DUODENUM, MINERAL WATER (5851)
PEPTIC, STOMACH, DUODENUM, PALPABLE MASSES (1919)
PEPTIC, STOMACH, DUODENUM, PANCREATIC SECRETION (5843)
PEPTIC, STOMACH, DUODENUM, SULPIRIDE THERAPY (4204)
PEPTIC, STOMACH, DUODENUM, SURGERY (1135), (4198), (5027), (5844)
PEPTIC, STOMACH, HYPOTHERMIA, HEMOSTATIC DRUGS, HEMORRHAGE (5007)
PEPTIC, STOMACH, MUCOSA, AMINOTRANSFERASE, AMINO ACID (3388)•
PEPTIC, STOMACH, RESECTION, SURGERY, INDICATIONS (5843)
PEPTIC, STOMACH, SULPIRIDE, CLINICAL USE (8888)
PEPTIC, SULPIRIDE, GASTRIC EMPTYING, ANTICHOLINERGIC DRUGS (8887)
PEPTIC, SURGERY (1134), (1138), (1914)
PEPTIC, SURGERY, LACTOSE MALABSORPTION, INTESTINAL LACTASE, STEATORRHEA (1113)•
PEPTIC, SURGERY, PERFORATION (2645)
PEPTIC, SURGERY, RECURRENCE, DUODENUM (5037)

PEPTIC, SURGERY, REVIEW (8882)
PEPTIC, SURGERY, STOMACH, DUODENUM (7401)
PEPTIC, SURGICAL MANAGEMENT (3399)
PEPTIC, SURGICAL TREATMENT (1904)
PEPTIC, THERAPY (2646)
PEPTIC, THERAPY, SULPIRIDE (7395)
PEPTIC, TREATMENT (1116)*, (6670)
PEPTIC, TREATMENT, GASTRIC SECRETION ANALYSIS (0349)
PEPTIC, VAGOTOMY (7404)
PEPTIC, VAGOTOMY, DIATHESIS (1901)*
PEPTIC, VAGOTOMY, STOMACH (4197)
PEPTIC, VAGOTOMY, ZOLLINGER-ELLISON SYNDROME, PANCREAS BICARBONATE SECRETION (1516)
PEPTIC, ZOLLINGER-ELLISON SYNDROME, CARCINOID, GASTRECTOMY (2967)
PEPTIC ESOPHAGITIS, STENOSIS, OPERATION, CANCER, SECRETION DIAGNOSIS (2555)
PEPTIC JEJUNAL, PERFORATION, GASTRIC RESECTION, ANASTOMOSIS, INFECTION (5062)
PERFORATED, TREATMENT, VAGOTOMY (0345)
PERFORATION, HEMORRHAGE, STOMACH, DUODENUM (8885)
PERFORATION, PERITONEUM (4619)
PERFORATION, PERITONITIS (7165)
PERFORATION, STOMACH, DUODENUM, DIAGNOSIS (4080)
PERFORATION, VAGOTOMY, PYLOROPLASTY (0350)
PH TELEMETRY, ESOPHAGEAL REFLUX, GASTRIC ANALYSIS (0938)*
POSTGASTRECTOMY, GALLBLADDER, MOTILITY, MALABSORPTION SYNDROMES (0042)*
POSTOPERATIVE STRESS, HEMORRHAGE, DIAGNOSIS (8883)
PRIMARY, SMALL INTESTINE (2114)
RADIOLOGY, ANTRUM, PYLORUS (8827)*
RECTUM (6704)
RECTUM, BENIGN, SOLITARY (3514)
RECTUM, COLITIS CYSTICA PROFUNDA, HISTOPATHOLOGY (8947)
RECURRENT, PANCREATIC TUMORS, DUODENAL ISLET TUMORS (6644)
RECURRENT, X-RAY, VAGOTOMY, PYLOROPLASTY (8141)
REFLUX ESOPHAGITIS, DIAGNOSIS, ACID PERFUSION TEST (2516)
RESECTION, PRIMARY STUMP CARCINOMA (1073)
SMALL INTESTINE, MELANOMA, METASTASES, INVAGINATION (2662)
SMALL INTESTINE, PERFORATING (0383)
SOLITARY, RECTUM, CLINICAL PICTURE, PATHOLOGY, TREATMENT (1971)*
SOLITARY, SMALL INTESTINE, ETIOPATHOGENESIS (0396)
STENOSIS, ENTEROPATHY, CROHN'S DISEASE (2664)
STERCORAL, HEMORRHAGE, CARDIOVASCULAR DISEASE (5906)
STEROID, GASTRECTOMY, HEMORRHAGE (6666)
STEROID-INDUCED, PERFORATION, RHEUMATISM (1119)
STOMACH, ANTICHOLINERGIC AGENTS (0307)
STOMACH, BELLADONNA ALKALOID (3409)
STOMACH, BRAIN CATECHOLAMINES, NOREPINEPHRINE, CONFLICT, ADRENALS (4188)*
STOMACH, CORTICOSTEROIDS (0273)*
STOMACH, DIETARY PARTICLE SIZE, FIBER CONTENT, SWINE (5827)*
STOMACH, DUODENAL, PHARMACOTHERAPY (5834)
STOMACH, DUODENUM, ALLERGIC PATHOGENESIS (2630)
STOMACH, DUODENUM, CANCER, EMBOLISM, HEMORRHAGE (3413)
STOMACH, DUODENUM, CHRONIC PNEUMONIA (7410)
STOMACH, DUODENUM, MOTILITY, SURGERY (5032)
STOMACH, DUODENUM, POST-UROLOGICAL SURGERY (2647)
STOMACH, DUODENUM, SMOKING, BODY FORM (4182)*
STOMACH, DUODENUM, SURGERY (3356), (4194)
STOMACH, DUODENUM, VAGOTOMY (5841)
STOMACH, DUODENUM, ZINC METABOLISM (8133)
STOMACH, ENDOSCOPY, HEALING PROCESS (8891)
STOMACH, ESOPHAGUS, ENDOSCOPY (4953)
STOMACH, EXPERIMENTAL, EXERTION (5830)*
STOMACH, EXPERIMENTAL, NOREPINEPHRINE, EPINEPHRINE, VAGOTOMY, ANTACID (5020)*
STOMACH, FISTULA, SECRETION, TESTOSTERONE, ESTRONE, HISTAMINE, PEPSIN, RAT (4183)*
STOMACH, FISTULA, SURGERY (5031)
STOMACH, HEMORRHAGE, GASTROSCOPY (4954)
STOMACH, MOUTH, STRESS-INDUCED (0305)
STOMACH, PHYTOBEZOAR (7411)
STOMACH, RESECTION, BILLROTH (4155)
STOMACH, RESECTION, SARCOMA (1904)
STOMACH, SECRETION, ACID (3287), (4910)
STOMACH, SECRETION, DUODENUM, PENTAGASTRIN, HISTAMINE (4189)*
STOMACH, SHAY RATS, BENZYL-TRI(B-PROPOXYETHYL)AMMONIUM IODIDE (8584)*
STOMACH, SURGERY, HEMORRHAGE (3288)
STOMACH, SURGERY, VAGOTOMY (3401)
STOMACH, VAGOTOMY, RESECTION, CANCER, POLYP (5805)
STOMACH FUNCTION, PHYSICAL EXERCISE (1031)
STRESS, ATROPINE-STRESS, STOMACH, MECHANISMS, ADRENERGIC BLOCKERS, GANGLIONIC BLOCKERS, RAT (5824)*
STRESS, DUODENUM, STOMACH (1908)
STRESS, GASTRIC, DUODENAL (7393)
STRESS, GASTRODUODENAL, PATHOGENESIS, MUCOSAL BARRIER (8137)
STRESS, GASTRODUODENAL, TREATMENT (1911)
STRESS, HEMORRHAGE, DIAGNOSIS (2982)
STRESS, HEMORRHAGE, VAGOTOMY, PYLOROPLASTY (5835)
STRESS, POSTOPERATIVE HEMORRHAGE, STOMACH, DUODENUM (5772)

- STRESS, STOMACH, DUODENUM (1142)
- STRESS, TRAUMA, STOMACH, DUODENUM (5771)
- SURGERY, GASTRIC SECRETION (4206)
- SURGERY, STOMACH, DUODENUM (3406)
- TREATMENT, ENDOSCOPY, MALIGNANCY, RADIOLOGY (5854)
- TUBERCULOUS, STOMACH, ENDOSCOPY, LESSER CURVATURE, GREATER CURVATURE RADIOLOGY (5023)

LCERATIVE COLITIS
- ALPHA-ORYZANOL TREATMENT (4325)
- ANGIOGRAPHY, GRANULOMATOUS COLITIS, DIFFERENTIAL DIAGNOSIS (8992)
- ANKYLOSIS, SPONDYLITIS, INFLAMMATION (7498)*
- CANCER, PROGNOSIS, MANAGEMENT (0497)*
- CARCINOMA (4315)
- CATAMNESIS, STATISTICS, MORTALITY RATE (8990)
- CHRONIC, PERICHOLANGITIS (4324)
- CHRONIC, RADIOLOGY (2015)
- CLINICAL STUDY (4323)
- CLINICAL STUDY, CHILDREN (4320)
- COLITIS, MORTALITY STATISTICS (0498)*
- COLON (2767)
- COLON, DILATION, CROHN'S DISEASE (7430)*
- COMBINED CONSERVATIVE THERAPY AND PSYCHOTHERAPY (8997)
- CORTICOSTEROID THERAPY, ACTH THERAPY (4313)
- CROHN'S DISEASE, THERAPY, SULPIRIDE (7500)*
- CROHN'S DISEASE, THROMBOCYTOSIS, THROMBOSIS (8993)
- DIAGNOSIS, LABORATORY TESTS (4021)
- DIAGNOSIS, THERAPY (2013)
- ENTERITIS, COLON, DIAGNOSIS (1300)
- ETIOPATHOLOGY (4322)
- FECAL PROTEOLYSIS, ALBUMIN, IGG (2761)*
- GRANULOMATOUS COLITIS, COMPARISON (2763)*
- HISTOLOGY, IMMUNOLOGY, IMMUNOSUPPRESSIVE THERAPY (8218)
- HYDROELECTROLYTIC DISEQUILIBRIA (4311)
- HYPOPHYSEAL-ADRENAL SYSTEM, HYPOCORTICISM, HYPOPHYSEAL INHIBITION (1302)
- IDIOPATHIC, HEMORRHAGE, HISTOPATHOLOGY ENDOSCOPY (8994)
- INCIDENCE (4289)
- INCIDENCE, ITALY (4318)
- IRRITABLE BOWEL SYNDROME, STRESS FACTOR (1398)*
- LACTOSE INTOLERANCE, MILK INTAKE, INCIDENCE IN EUROPE (8934)
- LARGE INTESTINE, DIAGNOSIS, RETICULITIS (0940)*
- LARGE INTESTINE, PROGNOSIS, CONSERVATISM (8988)*
- LARGE INTESTINE, TENESMUS, DIARRHEA, GASTRALGIA (1296)
- LIVER DISEASE, LIVER ABNORMALITIES, COLECTOMY (4307)*
- MUCOSA, SECRETION, GRANULOMA (4317)
- NOSOLOGY, ETIOLOGY, PATHOGENESIS (8991)
- PATHOLOGIC ANATOMY (4321)
- PIODERMA GANGRENOSUM (4326)
- PREGNANCY (4317)
- PROCTOCOLECTOMY (2766)
- PROCTO-SIGMOIDOSCOPY (4319)
- PROGNOSIS, IMPLICATION, ASSOCIATED ABNORMALITIES (8987)*
- PSUEDOPOLYPOSIS (0496)*
- RADIOLOGY (4020)
- RECTUM, REGENERATION, AUTORADIOGRAPHY (6731)*
- SEGMENTARY (4314)
- SMALL INTESTINE FUNCTION, MORPHOLOGY (6732)*
- STEROID THERAPY, SURGERY (2765)
- SURGERY, CORTICOSTEROIDS, MORTALITY, RATE (2762)*
- SURGERY, INDICATIONS (4312)
- SURGERY, LARGE INTESTINE (1299)
- THERAPY, ANABOLIC, STEROID HORMONES (7501)
- THERAPY, IMMUNOSUPPRESSION, CHILDREN (8217)
- TOXIC MEGACOLON, ILEOSTOMY-COLOSTOMY (8999)
- TOXIC MEGACOLON, PSYCHOSOMATIC ETIOLOGY, PHYSIOPATHOLOGY (8998)

ULTRASOUND
- PULSE LENGTH, METHODOLOGY, HEPATIC LESIONS (1407)

ULTRASTRUCTURE
- ACINAR CELLS, PANCREAS, EXOCRINE FUNCTION (1580)*
- BACTERIA, ALIMENTARY TRACT, INSECT (4876)
- BILE DUCT, EPITHELIUM (4752)
- BOVINE VIRUS, DIARRHEA, MUCOSAL DISEASE (6955)
- BRUSH BORDER MEMBRANES, EPITHELIAL CELLS, GUINEA PIG INTESTINE (8508)*
- CHANGE, GOLGI APPARATUS, LIVER, TOCOPHEROL DEFICIENCY (5169)*
- CITRATE TRANSPORT, FATTY ACID SYNTHESIS, ADIPOSE TISSUE (7106)*
- COLON, CARCINOEMBRYONIC, ANTIGEN LOCALIZATION (7456)*
- COLON, LIPIDS, HISTOCHEMISTRY, LARGE INTESTINE (1582)*
- DUODENUM, ARGYROPHIL, ARGENTAFFIN, RESERPINE (6306)*
- ELECTRON MICROSCOPY, SMALL INTESTINE, DUODENAL, EPITHELIUM, ENZYMATIC LOCALIZATION, ACID PHOSPHATASE, ALKALINE PHOSPHATASE (5413)*
- ENDOPLASMIC RETICULUM, POLYSOME, MICROSOME, LIVER, PHOSPHOLIPID, METABOLISM (4841)*
- EPITHELIUM, PYLORUS, HISTOLOGY, CAT (6314)
- EXOCRINE PANCREAS, HIBERNATING FROG,7793)*
- GASTRIC MUCOSA, ATROPHIC GASTRITIS, BIOPSY, INTRACYTOPLASMIC CANALICULI, PARIETAL CELLS (5765)*
- GASTROINTESTINAL TRACT, ENDOCRINE CELLS, EPITHELIUM (0740)*
- HEPATECTOMY, DIET, RNA (7773)*
- HEPATOCYTE, METAMORPHOSIS (6318), (6323)
- HEPATOMA ASCITES, PROTEASE, NUCLEASE (6765)*

HISTOPATHOLOGY, LIVER, TRANSPLANT (8281)
INTESTINE, MUCOSA, HEDGEHOG, HIBERNATION (2324)
INTESTINE, SPRUE, GLUTEN FREE DIET (8937)
JEJUNAL MUCOSA, SCANNING ELECTRON MICROSCOPY, CELIAC DISEASE (5885)•
LAMINA PROPRIA, MACROPHAGE, RECTUM (5925)
LARGE INTESTINE, TAENIA COLI, MUSCLE (6289)•
LIPOPROTEIN, LYMPH, INTESTINE, TRANSPORT (5417)•
LIVER, BENZYLIDENEYOHIMBOL, RAT, DOG (3028)•
LIVER, BLOOD CELL, ENDOTOXIN, SHOCK (6928)•
LIVER, CARBON TETRACHLORIDE, HYPOTHERMIA, RAT (3825)
LIVER, DARK CELL, MICROSCOPY (8522)
LIVER, FIXATION, GLUTANALDEHYDE (6319)
LIVER, FUNCTION, PYRAZOLE (7125)•
LIVER, GLUCOSE, ETHIONINE (8330)
LIVER, GOLGI, ENZYMES (7798)•
LIVER, HEPATECTOMY, 5-FLUOROURACIL RNA (8621)•
LIVER, HEPATITIS, CIRRHOSIS (2296)
LIVER, HEPATOCYTE, NUCLEAR GLYCOGEN, III GLYCOGENOSIS, SKELETAL MUSCLE (5986)•
LIVER INJURY, ETHIONINE, POLYRIBOSOME, NUCLEOLUS (8317)•
LIVER MICROSOME, METABOLISM, DIPHENYLHYDANTOIN, DRUG EFFECT, BIOTRANSFORMATION (5607)
LIVER MICROSOMES, NUCLEOPROTEIN FRACTION (7048)
LIVER MICROSOME, STEAROYL-COA DESATURASE (7040)
LIVER NUCLEI, HISTONE-SPECIFIC TRANSACETYLASES (7051)
LIVER NUCLEI, RNA POLYMERASE, ADRENALECTOMY, GAMMA-IRRADIATION (6458)
LIVER NUCLEI, RNA POLYMERASE ASSAY, ALPHA-AMANITIN (6317)
LIVER PARENCHYMA, SPLENOMEGALY, CELL COMPONENTS, MITOCHONDRIA, PRE-HEPATIC BLOCK (6054)•
LIVER SINUSOID (5471)
LIVER SINUSOIDS, ENDOTHELIAL LINING (7991)•
LYSOSOMAL PROTEASES, PANCREATITIS (7512)
LYSOSOMES, LIVER, KIDNEY, LIPOPROTEIN, ISOLATION (6338)
MICROSOME, LIVER, APO-CYTOCHROME B5 (6315)
MICROSOME, LIVER, CYTOCHROME, INDUCTION, MECHANISM (4832)•
MICROSOME, LIVER, ENZYME, BARBITURATE, RAT (5601)
MICROSOME, LIVER, ENZYME, RAT (4716)
MICROSOME, LIVER, ENZYME WAX (4720)
MICROSOME, LIVER, ETHANOL, UDPGT ACTIVITY (5604)
MICROSOME, LIVER, GLUCOSE, XYLOSE, DEHYDROGENASE (6465)
MICROSOME, LIVER, OXIDASE (4858)
MICROSOME, LIVER, PH, SODIUM BINDING, MAGNESIUM BINDING, ATP, EDTA (5449)
MICROSOME, LIVER, SEDIMENTATION, SUCROSE, PROTEIN SYNTHESIS (5409)•
MICROSOME, PROTEIN SYNTHESIS, FATTY LIVER (6650)
MITOCHONDRIA, CHRONIC HEPATITIS, CIRRHOSIS, IMMUNOGLOBIN (5276)
MITOCHONDRIA, DNA SYNTHESIS, LIVER, ENZYME (6474)
MITOCHONDRIA, ENZYME, LIVER, CHICKEN (4719)
MITOCHONDRIA, LIVER, ACYLATED PROTEIN (6325)
MITOCHONDRIA, LIVER, BILIRUBIN, MITOCHONDRIA LYSOSOME, COPPER, WILSON,S SYNDROME (2799)•
LIVER, HISTOLOGY, BIOCHEMISTRY (1575)•
LIVER, HUMAN, GANGLIOSIDOSIS (8284)
LIVER, INJURY, FRUCTOSE, CYTOLYSOSOME, ENDOPLASMIC RETICULUM, ELECTRON MICROSCOPY (3806)•
LIVER, MICROBODY, PEROXIDASE ACTIVITY, 3-AMINO-1,2,4-TRIAZOLE (4747)•
LIVER, MICROSOME, ETHANOL OXIDATION, CATALASE, ALCOHOL DEHYDROGENASE, TPNH OXIDASE (5580)•
LIVER, MITOCHONDRIA, CARNITINE, PALMITIC ACID, ESTERS, METABOLISM, RAT (5582)•
LIVER, MITOCHONDRIA, ELECTRON MICROSCOPY (1588)
LIVER, MITOCHONDRIA, PERMEABILITY, FRAGILITY, ETHANOL, CHOLINE DEFICIENCY, SUCCINIC DEHYDROGENASE (5221)•
LIVER, MITOCHONDRIA, MONKEY (4705)•
LIVER, MITOCHONDRIAL MEMBRANE, K+-H+ EXCHANGE, MAO ACTIVITY, RAT (5428)•
LIVER, MONOCROTALINE, CHICKEN (6058)•
LIVER, MOUSE, RIBOSOME, SUBUNIT (2281)•
LIVER, MUCOPOLYSACCHARIDOSES, CHILDREN (9088)
LIVER, NUCLEOLUS, SEGREGATION, AFLATOXIN B1 (3789)•
LIVER, PEROXIDASE, KUPFFER CELLS (7792)•
LIVER, POLYSOME, RIBONUCLEOPROTEIN, NUCLEI (6311)
LIVER, PUROMYCIN, POLYRIBOSOMAL DISAGGREGATION (6830)•
LIVER, PYRROLIZIDINE, MEGALOCYTES (8322)•
LIVER, RESECTION, HEPATOCYTE (6477)
LIVER, SMOOTH SURFACE ENDOPLASMIC RETICULUM, DRUG EFFECT, SPIRONOLACTONE (3809)•
LIVER, THYROXINE, METAMORPHOSIS, TADPOLE (5465)
LIVER, TUMOR (6286)•
LIVER CELLS, STEROID THERAPY, CONTRACEPTIVE (8515)•
LIVER CELLS, STEROIDS, PREGNANCY, TROPHOBLASTIC GROWTHS (8514)•
LIVER DISEASE, ACUTE VENOUS OCCLUSION, LIVER BIOPSY, ELECTRON MICROSCOPY, PATHOLOGY (5168)•

  - LIVER DISEASE, LIVER PATHOLOGY, TYPE METABOLISM (5241)
  - MITOCHONDRIA, LIVER, COLD EXPOSURE, UBIQUINONE (7185)
  - MITOCHONDRIA, LIVER, ENDOPLASMIC RETICULUM, NUCLEIC ACID, GUINEA PIG (4739)
  - MITOCHONDRIA, LIVER, ENZYME (4725)
  - MITOCHONDRIA, LIVER, ENZYME, DEVELOPMENT (4727)
  - MITOCHONDRIA, LIVER, ENZYME, RAT (4843)•
  - MITOCHONDRIA, LIVER, ENZYME, RAT, E.COLI, AEROBIC OXIDATION (5452)
  - MITOCHONDRIA, LIVER, HISTOCHEMISTRY, MEMBRANE, MONOAMINE OXIDASE, ENZYME MARKER (5440)•
  - MITOCHONDRIA, LIVER, MEMBRANE, SURFACE CHARGE, FREE-FLOW ELECTROPHORESIS (5426)•
  - MITOCHONDRIA, LIVER, NEGATIVE STAINS, BIOCHEMICAL PATTERNS (6313)
  - MITOCHONDRIA, LIVER, OXIDATIVE PHOSPHORYLATION, ANTIBIOTIC, RAT (6469)
  - MITOCHONDRIA, LIVER, PHOSPHOENOLPYRUVATE, METABOLISM (5572)•
  - MITOCHONDRIA, LIVER, SEDIMENTATION VELOCITY, WATER CONTENT, COMPOSITION (5431)•
  - MITOCHONDRIA, LIVER, STARVATION, EMBRYONIC, DENSITY GRADIENT CENTRIFUGATION (5434)•
  - MITOCHONDRIA, LIVER, TOCOPHEROL DEFICIENCY, RAT (5176)•
  - MITOCHONDRIA, LIVER, 2,4-DINITROPHENOL (7186)
  - MITOCHONDRIA, MICROSOME, LYSOSOME, ENZYMES, STOMACH (4977)
  - MITOCHONDRIAL PROTEIN, LIVER, CYCLOHEXIMIDE (7152)•
  - MUCOSA, ATROPHIC GASTRITIS, PERNICIOUS ANEMIA (7320)•
  - NUCLEUS, HEPATOCYTE, MEMBRANE (4731)
  - PANCREAS, ACINAR CELL, ISLET CELL (4726)
  - PANCREAS, ISLET OF LANGERHANS (1694)•
  - PARIETAL CELL, STOMACH, CARBONIC ANHYDRASE, LOCALIZATION (6308)•
  - PIGMENT, CYTOPLASM, MITOCHONDRIA (9039)•
  - POLYRIBOSOMES, LIVER, STABILITY, GEL FILTRATION, RAT (6340)
  - RAT LIVER MITOCHONDRIA, INNER MEMBRANE PROTEIN (8524)
  - RETICULO-ENDOTHELIAL CELL, DIABETES, LIVER (1574)•
  - RIBOSOME, LIVER, RNA SYNTHESIS, POLYNUCLEOTIDES, ENDOPLASMIC RETICULUM (4699)•
  - RIBOSOME, LIVER POLYNUCLEOTIDES, RNA SYNTHESIS, PURINE NUCLEOTIDES, ADENINE (4693)•
  - SMALL INTESTINE, CONVOLUTED MUCOSA, FLAT MUCOSA (7440)•
  - SMALL INTESTINE, EPITHELIUM, GOBLET CELLS (1566)•
  - SMALL INTESTINE, ILEUM, MUCOSA, ABSORPTION, WATER, ELECTROLYTE, ATPASE (4713)•
  - SMALL INTESTINE, MUCOSA, BIOPSY, AUTOLYSED SPECIMENS (7034)•
  - SMALL INTESTINE, MUCOSA, CHRONIC ENTEROCOLITIS (7496)
  - SMALL INTESTINE, MUCOSA, EPITHELIUM, DUODENUM, GOLGI APPARATUS, TRACER STUDY (4704)•
  - SMALL INTESTINE, SALINE WASH, CELL LOSS, NORMAL MUCOSA, CELIAC DISEASE (5433)•
  - STOMACH, NEOPLASM, LEIOMYOBLASTOMA (1576)•
  - SURFACE MEMBRANE, HAPATOMA CELL, GLUCOCORTICOIDS (8264)•
- UMBILICAL CORD
  - FECES, MECONIUM, STEROID (2487)
- UREMIA
  - HEPATIC COMA, EDEMA, METABOLIC DISTURBANCES (6799)
  - LIVER, CARBOHYDRATE, METABOLISM (0888)
  - NEPHRECTOMY, CALCIUM, VITAMIN D-DEFICIENCY (7059)•
- URETERO-ILEOSTOMY
  - CUTANEOUS, URINARY DIVERSION, MYELOMENINGOCELE, CHILDREN (0372)
  - OBSTRUCTION, ILEAL CONDUIT (2674)
- URETHRA
  - URETHRO-RECTAL FISTULA (2717)
- URIDINEDIPHOSPHOGLUCOSE
  - VIRAL HEPATITIS (2884)
- URINARY TRACT
  - DISEASE, SURGERY, STOMACH, DUODENUM, ULCERATION (2647)
- URINARY TRACT DISEASE
  - IMPERFORATE ANUS (2709)

- VAGINA
  - COLON, CARCINOMA, METASTASIS (1248)
- VAGOTOMY
  - ACID SECRETION, PYLOROPLASTY, ATROPINE (0270)•
  - ACUTE GASTRIC DILITATION, DUODENAL ULCERS, DRAINAGE (1905)
  - ANTRECTOMY, GASTRODUODENOSTOMY (4174)
  - APPRAISAL, INSULIN TEST, DUODENAL ULCER (0343)
  - ATROPINE, PENTOLINIUM, SURGICAL, MAN (1131)
  - BILE, GALLBLADDER (3168)•
  - COMPLICATIONS, DIARRHEA, DYSPEPSIA (8103)
  - DIARRHEA (3376)
  - DIARRHEA, PEPTIC ULCER, GASTROJEJUNOSTOMY, PYLOROPLASTY (2642)
  - DRAINAGE, DUODENUM, STOMACH, HEMORRHAGE (1030)
  - DUCTAL BILE PROPERTIES (0151)
  - DUODENAL AND GASTRIC ULCERS (1910)
  - DUODENAL ULCER, HEMIGASTRECTOMY, ANTRECTOMY (1147)
  - ESOPHAGUS, SURGERY (1834)
  - GALLBLADDER, DUODENUM, PRESSURES, CHOLECYSTOKININ STIMULATION, CAT (1649)•
  - GALLBLADDER, INSULIN, CONNON'S LAW (1491)
  - GASTRIC, ABDOMINAL, GALLBLADDER FUNCTION (2166)

GASTRIC, ANTRECTOMY, DUODENAL ULCER, SURGERY (3405)
GASTRIC ACID, PEPSIN, ELECTROLYTE, NITROGEN CONTAINING COMPOUNDS, MAN, DOG, ULCER (4184)*
GASTRIC MOTILITY, PENTAGASTRIN, DOG (1644)*
GASTRIC MUCOSA, PYLOROPLASTY, PEPTIC CELLS (0734)*
GASTRIC RESECTION, DUODENAL STUMP, ULCER (6653)
GASTRODUODENAL ULCER, INTRAGASTRIC PRESSURE (6627)
GASTROENTEROSTOMY, METABOLIC CONSEQUENCE, NUTRITIONAL STATE (2581)*
GASTROJEJUNOSTOMY, PLYLORPLASTY, LONG TERM CLINICAL AND METABOLIC EFFECTS (1069)
GASTROPLEGIA, TREATMENT (1143)
HEMORRHAGE FROM GASTRITIS (3349)
LIVER, BILIARY TRACT, SURGERY (0671)
PEPTIC ULCER, TREATMENT (1921)
PERFORATED DUODENAL ULCER (2653)
POST-, GASTRIC EMPTYING, PYLOROPLASTY (3370)
PROXIMAL, SELECTIVE (3722)
PYLORIC STENOSIS (3353)
PYLOROPLASTY, PERFORATION, ULCERS, DUODENUM (0350)
PYLOROPLASTY, POST-OPERATIVE, DUMPING, JEJUNAL IRRITATION (0298)
SELECTIVE, PARIETAL CELL MASS, ULCER (8880)*
SELECTIVE, TOTAL, ABDOMEN, INSULIN TEST (3712)
SELECTIVE, ULCER (8833)
SMALL INTESTINE, DUODENUM, DISTAL ANTRECTOMY (1900)*
SPHINCTER OF ODDI, FLOW RESISTANCE (6382)*
STOMACH, PEPTIC ULCER, SMALL INTESTINE (1030)
STOMACH, RADIOLOGY, HYPERTONIA (1863)
STOMACH, SECRETION, PENTAGASTRIN (0064)*
STOMACH, ULCER (4197)
SUBDIAPHRAGMATIC, ANATOMY, SURGICAL TECHNIQUES, MAN (0346)
SURGICAL, PARASYMPATHOLYTICS, ULCER (1023)*
ULCER, DRAINAGE (6662)
ULCER, DUODENAL, SURGERY (1147)
ULCER, DUODENUM (1907)
ULCER, HEMORRHAGE (2207)
ULCER, RECURRENT (8141)

VAGUS
STOMACH, SURGERY, MUCOSA (3354)
STOMACH, VAGOTOMY, SECRETION (3355)
SURGERY, GALLBLADDER, BILIRUBIN (3951)*

VALIUM
ESOPHAGUS, ENDOSCOPY (2541)

VARICELLA
CHILDREN, HEPATIC DYSFUNCTION, ACUTE ENCEPHALOPATHY (2066)

VARICES
BLEEDING, HEMODYNAMICS, SURGERY (1006)
BLEEDING ESOPHAGEAL, SPLENECTOMY, CORONARY VEIN LIGATION (3327)
DECOMPRESSION, HEMODYNAMICS, SPLENORENAL SHUNT, SURGERY (1005)
ESOPHAGEAL, BLEEDING, SPLENOMEGALY, HEPATIC CIRRHOSIS (3656)
ESOPHAGEAL, DRAINAGE, POSTOPERATIVE (6985)
ESOPHAGEAL, PORTAL HYPERTENSION, GAS TROINTESTINAL BLEEDING, PEPTIC ULCER, CIRRHOSIS (2816)
ESOPHAGUS, HEMORRHAGE, DIAGNOSIS (0990)
ESOPHAGUS, HEMORRHAGE, SURGERY (3752)
ESOPHAGUS, HEMORRHAGE, WILSON'S DISEASE, SURGERY (3314)*
ESOPHAGUS, PORTAL VEIN, MORPHOLOGY, PORTAL HYPERTENSION (7540)
ESOPHAGUS, STOMACH, CIRRHOSIS, HEMORRHAGE (7639)
ESOPHAGUS, SURGERY, CIRRHOSIS (4518)
ESOPHAGUS, SURGERY, VAGOTOMY (3334)

VARIX
BLEEDING, ESOPHAGUS, LIGATURE RESECTION (2570)
ESO-GASTRIC, LINTON-NACHLAS TUBE, SENGSTAKEN-BLAKEMORE TUBE, CIRRHOTICS (2903)

VASODILATOR
TOLAZOLINE, GASTROINTESTINAL BLEEDIN (3720)

VASOMOTOR RESPONSE
GASTRIC, POLYMYXIN B, PROTECTIVE EFFECT, THIOPROPERAZINE, TRANSENEMIC ACID, RAT (2378)

VEIN
OCCLUSION, MESENTERIC, DIAGNOSIS (3737)

VIBRIO
CHOLERA, ENTEROTOXIN, BIOCHEMISTRY (6513)
MARINE, GASTROENTERITIS (5393)
PARAHAEMOLYTICUS, ANTIGENIC SCHEMA, EPIDEMIOLOGY (7699)
PARAHAEMOLYTICUS, DIARRHEA (7737)

VIBRIOSIS
VIBRIO FETUS INTESTINALIS, ANTIBODY (2968)

VIBRO FETUS
GENITAL TYPE, INTESTINAL TYPE, ANTIBODY (2968)

VILLI
COUNTERCURRENT EXCHANGE, INTESTINAL ABSORPTION, OXYGEN TRANSPORT, CAT (1627)*
ILEUM, SMALL INTESTINE, HISTOLOGY, MORPHOLOGY (1571)*
INTESTINE, MORPHOLOGY, LYMPHATIC, PUM (6501)*
JEJUNUM, SCANNING ELECTRON MICROSCOPY MICROVILLI, MUCOSAL STRUCTURE (1568)*
LAMBLIA, SMALL INTESTINE, MOUSE, MUCOSA (3008)
SMALL INTESTINE, DUODENUM JEJUNUM, ILEUM (1569)*
SMALL INTESTINE, EPITHELIUM, UPTAKE, POLYVINYLPYRROLIDONE (7067)*
SMALL INTESTINE, HISTOLOGY, MORPHOLOGY (1570)*

  WATER TRANSPORT, JEJUNUM, CELL-EXTRUSION, DOG (0027)*

IRUS
  BACTERIA, GASTROENTERITIS, DIARRHEA, INFANTS, ANTIBIOTICS (1101)
  BOVINE, DIARRHEA, ULTRASTRUCTURE, MUCOSAL DISEASE (6955)
  CHOLERA, GAMMA RAY INACTIVATION, HOG (6183)
  CORONOVIRUS, CHRONIC ACTIVE HEPATITIS, CIRRHOSIS, AUSTRALIAN-SH ANTIGEN (3642)*
  DIARRHEA, BACTERIA, INFANT (6981)
  ECHO-, ANTIBODY DISTRIBUTION, RECTUM, NASOPHARYNX, SPINAL FLUID (6931)*
  ENTERO-, GASTROENTERITIS, NEONATE (6172)
  ENTERO-, RECEPTO ACTIVITY, PIG TISSUES (3248)
  ENTERO-, RURAL FAMILIES, EPIDEMIOLOGY (6176)
  GASTROENTERITIS, CORONAVIRUS, MORPHOLOGY (3758)
  HEPATIC, LUNG, DIGESTIVE ORGANS, ADENOVIRUS (4479)
  HEPATITIS, ACUTE, CHRONIC, ANTITHYMOCYTE GLOBULIN (3626)*
  HEPATITIS, DIABETES, ICTERUS (5269)
  HEPATITIS, EPIDEMIOLOGY (4493)
  HEPATITIS, FANCONI'S ANEMIA (4495)
  HEPATITIS, ICTERUS, TOLBUTAMIDE TEST (4483)
  HEPATITIS, INFECTIOUS, BLOOD DONOR, EPIDEMIOLOGY (3631)
  HEPATITIS, LIVER (4486), (4488)
  HEPATITIS, PREGNANCY (4492)
  HEPATITIS, PROGNOSIS (4496)
  HEPATITIS, RNA VIRUS, DNA VIRUS, ANTINUCLEAR ANTIBODY, PROTEIN SYNTHESIS (5257)
  HEPATITIS, XYLOSE TEST (4494)
  HERPES SIMPLEX, COXSACKIE VIRUS #5, HEPATITIS (7610)
  HUMAN FETAL INTESTINE, CYTOPATHIC CHANGES (7984)*
  MHV-3, HEPATITIS, INTESTINAL DISACCHARIDASE LEVEL (3636)
  MULTIPLICATION, ORGAN CULTURE, SMALL INTESTINE (7998)
  NEWCASTLE DISEASE, INTESTINAL TRACT, LOCAL IMMUNITY, CHICKEN (0924)*

ITAMIN
  A, CHRONIC HYPERVITAMINOSIS, LIVER INJURY (2858)*
  A, GLUCOSE, BLOOD, GLYCOGEN, LIVER (1612)
  A, NA AND K TISSUE LEVELS, ALANINE (3178)
  A, TEST, ALIMENTARY DISORDER (3267)*
  B6, GASTROPRIVAL CNS DEGENERATION (3916)
  B6, PHOSPHOLIPID, LIVER (7176)
  B12, ABSORPTION, ILEOSTOMY, ULCERATIVE COLITIS (3506)*
  B12, ABSORPTION, INTESTINE, LIVER METABOLISM, SCAN (5075)*
  B12, ABSORPTION, MALABSORPTION, ILEUM, INTRINSIC FACTOR (6375)
  B12, ABSORPTION, PERNICIOUS ANEMIA, ACHLORHYDRIA (7275)
  B12, MALABSORPTION, POTASSIUM CHLORIDE THERAPY (7444)
  B12, ABSORPTION, PROXIMAL GASTRIC RESECTION, GASTRIC AND PANCREATIC FUNCTION (1020)*
  B12, ABSORPTION, TRANSPORT, SMALL INTESTINE (2339)*
  B12, C, LIVER LIPID METABOLISM (0831)*
  B12, FOLIC ACID, ABSORPTION (0411)*
  B12, INTRINSIC FACTOR, INTESTINE, ABSORPTION (2336)*
  B12, IRON ABSORPTION, GASTRECTOMY, ATROPHIC GASTRITIS (6651)
  B12, MALABSORPTION, BACTERIAL FLORA, SMALL INTESTINE (3343)*
  B12, MALABSORPTION, ETHANOL-INDUCED (0406)*
  B12, MALABSORPTION, PERNICIOUS ANEMIA, ADDISON, ATROPHIC GASTRITIS, ACHYLIA GASTRICA (4132)*
  B12, MALABSORPTION, SELECTIVE, IMERSLUND-NAJMAN-GRASBECK ANEMIA (0419)
  B12, TRANSCOBALAMINS, INTRINSIC FACTOR (4811)
  B12, VIRAL HEPATITIS, MAN, ANTIBIOTICS (1517)
  CELL PROLIFERATION, KINETICS, LIVER (3983)
  CHOLINE, METABOLISM, DIET, FAT, METHIONINE (5558)*
  D, DEFICIENCY, MALABSORPTION, HISTOLOGY (5892)
  D, DUODENUM, ILEUM, MUCOSA (2471)*
  D, MALABSORPTION, CIRRHOSIS (5081)
  D, MALABSORPTION, RENAL DISEASE, ACIDOSIS, PARATHORMONE (7430)*
  D, RICKETS, CALCIUM, ABSORPTION, SMALL INTESTINE (3420)*
  D-3, CALCIUM, ABSORPTION, INTESTINE, STRONTIUM (4775)
  D-3, INTESTINAL CALCIUM ABSORPTION (6355)*
  D-3, METABOLISM, INTESTINAL NUCLEI (0916)
  DEFICIT, A,C, OBESITY, JEJUNOILEAL SHUNT (5859)
  DERIVATIVE, METHYCOBALAMIN, SYNTHESIS, PROTEIN, LIVER, RAT (4819)*
  DUODENUM, CALCIUM (3239)
  E, ABSORPTION, INTESTINE, MALABSORPTION (3438)*
  E, AMINO ACID, SUGAR, TRANSPORT (6348)*
  E, C, LIVER, NECROSIS, REGENERATION, MITOSIS (2419)*
  E, DEFICIENCY, MITOCHONDRIA, LIVER, ULTRASTRUCTURE (5176)*
  E, DEFICIENCY, ULTRASTRUCTURE CHANGE, GOLGI APPARATUS, LIVER (5169)*
  E, MALABSORPTION, CEROIDOSIS, SMALL INTESTINE, REGIONAL ENTERITIS (0400)
  E, MICROSOMAL MEMBRANE, PEROXIDATION INHIBITION (6305)*
  FOLATE, ENZYME, T4 INFLUENCE, LIVER, RAT (4827)*

- FOLATE, JEJUNUM, FOLATE METABOLIZING ENZYMES, REGULATION (5611)*
- FOLIC ACID, CIRRHOSIS, MALABSORPTION, CHRONIC ALCOHOLISM, URINE, LIVER BIOPSY, PTEROYLGLUTAMIC ACID (5074)
- FOLIC ACID, GLYCOLYTIC ENZYMES, JEJUNUM (5613)*
- FOLIC ACID, HEPATITIS, ACUTE PHASE, BILIRUBIN, TRANSAMINASES, ELECTROPHORESIS, ALKALINE PHOSPHATASE (6078)
- FOLIC ACID, LIVER REGENERATION, PARTIAL HEPATECTOMY, RAT (4835)*
- HYPOVITAMINOSIS A, INTESTINAL INFECTIONS (7765)
- K, ABDOMEN, HEMATOMA (4617)
- K, ABSORPTION, GASTROINTESTINAL TRACT, FECAL EXCRETION, URINE EXCRETION, SERUM LEVEL, TRACING TECHNIQUE (4757)*
- K, CIRRHOSIS, BLOOD CLOTTING, FIBRINOGEN, THROMBOCYTE (5290)
- K, COAGULATION STUDY, PROTHROMBIN SYNTHESIS, FACTORS VII-X (822)*
- K, CYCLOHEXIMIDE INHIBITION, PROTHROMBIN BIOSYNTHESIS, LIVER, RAT (3201)
- K, FACTORS VII-X SYNTHESIS, ISOLATED LIVER CELLS, RAT (0822)*
- K, PHYLLOQUINONE, HORSE LIVER, BIOASSAY (5437)*
- K, PROTHROMBIN BIOSYNTHESIS, LIVER (3963)
- LIPOIC ACID, HEPATIC COMA, CHRONIC HEPATITIS (2829)
- LIVER, PATHOLOGY (5242)
- LIVER DAMAGE, CARBON TETRACHLORIDE, PROTECTION, RAT, ENZYME, MITOCHONDRIA (2822)
- LOW CHOLINE, DIET, STEATOSIS, IRON METABOLISM, RAT (5608)
- MYOINOSITAL, CHOLINE, FATTY LIVER PREVENTION (6777)*
- PROTEIN PROFILE, CCL4, LIVER, NUCLEIC ACIDS (7112)*
- RIBOFLAVIN, ABSORPTION, EXCRETION, SMALL INTESTINE (7068)*
- RIBOFLAVIN, ABSORPTION, SMALL INTESTINE, AGE FACTOR (3099)*
- RIBOFLAVIN, DERIVATIVES, BILIARY EXCRETION (3122)
- RIBOFLAVIN, HEPATOMA, RAT (6072)
- RIBOFLAVIN, THERAPY, MALABSORPTION, BURNING FEET SYNDROME (5899)
- RIBOFLAVIN, THYROID, MITOCHONDRIA, ALPHA-GLYCEROPHOSPHATE DEHYDROGENASE (7178)
- RIBOFLAVIN SYNTHESIS, INTESTINE, 7-CHLORO-8-METHYL-FLAVIN (7197)*
- THIAMINE, METABOLISM, GASTRIC CANCER (5812)
- ULCEROUS COLITIS, BACTERIA, INTESTINE (2769)

VOLVULUS
- ASCENDING, COLON, MESENTERIUM COMMUNE (0456)
- CECUM (2745)
- CECUM, ETIOLOGY, DIFFERENTIAL DIAGNOSIS (8193)
- COLON (4276)
- COLON, SURGERY (2706)
- COLONIC, OBSTRUCTION, BARIUM ENEMA, TREATMENT (0491)
- GASTRIC (0325)
- GASTRIC, LIVER, PYLORUS, ANTRUM (6656
- IRAN, INTESTINE (1184)
- PELVIC COLON, ETIOLOGY, TREATMENT (1987)
- SIGMOID COLON, CECUM (4292)
- SIGMOID COLON, INTESTINAL OBSTRUCTION (3478)
- SIGMOID, SURGERY (3470)
- STOMACH, RADIOLOGY, SURGERY (8120)

WATER
- ABSORPTION, INTESTINE, BLOOD FLOW (4774)
- ABSORPTION, JEJUNAL LOOP, GLUCOSE, NA, CI (6367)
- RED BLOOD CELLS, PLASMA LEVEL, MESENTERIC BLOOD (3257)
- TEMPERATURE, ESOPHAGUS, MOTOR FUNCTION (2357)*

WATER TRANSPORT
- ELECTROLYTE, OUABAIN, DIPHENYLHYDANTION, ABSORPTION, INTESTINE, RAT (2348)
- ELECTROLYTE CONTENT, SKELETAL MUSCLE, PYLORIC STENOSIS (2583)*
- ELECTROLYTE LOSS, CHOLERA, INFANTS, CHILDREN (3754)
- JEJUNUM, VILLI, DOG (0027)*
- SOLUTE UPTAKE, RECTAL PADS, PERIPLANETA (3117)

WEIGHT REDUCTION
- PLICATION, STOMACH, SURGERY (3744)

WHIPPLE' DISEASE
- ELECTRON MICROSCOPY, MUCOSA, SMALL INTESTINE, MICROORGANISM (6487)
- INTESTINAL LIPODYSTROPHY, POLYARTHNALGIA (1170)

WHITE BLOOD CELL
- TOXOCARA CANIS INFECTION, RESPONSE, BABOON (3774)

WIDAL TEST
- TYPHOID FEVER, ANTIBIOTIC THERAPY (1973)*

WILSON'S DISEASE
- DIAGNOSIS, SEROLOGICAL EXAMINATION, CERULOPLASMIN (2800)*
- ESOPHAGEAL VARICES, HEMORRHAGE, SURGERY (3319)*
- GASTRODUODENAL, HEMORRHAGE, SURGERY, JAUNDICE, CIRRHOSIS, PORTAL HYPERTENSION, HEPATIC INSUFFICIENCY, THROMBOPENIA, LEUCOPENIA (5200)
- HEPATOLENTICULAR DEGENERATION, PENICILLIN, TREATMENT, CUTANEOUS LESIONS (0569)
- LIVER, SULFUR, METABOLISM (2040)
- PRESYMPTOMATIC, LABELED COPPER, PENICILLAMINE (0546)

WOUND PROTECTION
- SURGERY, LARGE INTESTINE (1272)

WRIGHT'S SERUDIAGNOSIS
- HEPATITIS, BRUCELLA, MAN (0592)

ANTHOMA
- STOMACH, ENDOSCOPY, LIPID CONCENTRATION (1078)

-RAY
- COLITIS DIAGNOSIS, CROHN'S DISEASE (3308)
- DIAGNOSIS, DISEASE, ESOPHAGUS, STOMACH, INTESTINE, MEDIA (3307)
- DNA DAMAGE, ADENOSINE TRIPHOSPHATE, ASCITES TUMOR (4371)*
- DOUBLE CONTRAST, SMALL INTESTINE (4051)
- ELECTROPHORETIC BEHAVIOR, ENZYMATIC PROTEIN, LIVER, HEART, RAT (2431)
- HEPATECTOMY, PARTIAL, MITOSIS, RAT (1394)
- JEJUNAL INTERPOSTITION, POST-GASTRECTOMY (3368)
- LIVER, ENA SYNTHESIS (2423)
- STOMACH, DUODENUM, CORRELATION WITH GASTRIC SECRETION, PEPTIC ULCER (3403)
- TELEVISION INSTALLATION, ROLL FILM CHANGER, GASTRODUODENAL STUDY (3269)*
- ULCERATIVE COLITIS (4020)

YEAST
- CHILDREN, DUODENUM, CANDIDA ALBICANS, LAMBLIASIS (6919)

YELLOW ATROPHY
- ACUTE, VIRAL HEPATITIS, HEMODIALYSIS RENAL DISEASE (2107)*

ZINC
- METABOLISM, CIRRHOSIS, ALCOHOLIC (2894)*
- PROTEIN-BOUND, SERUM, CIRRHOSIS (2892)*

LIBRARY U. OF I. URBANA-CHAMPAIGN

bers followed by an asterisk refer to abstracts in the text. Other numbers refer to citations.

AUTHOR INDEX

CH, R.
3612
GAARD, P.
3414, 4189*, 6642,
7094*
KHUS, T.
1940, 4354
KVAAG, A.
1294*
RON, C.
8733
S, M.
3061
BABEI, L.
0160*, 3186, 8676
BALO, M.
4107
BATE, L.
4147
BAURRE, R.
1153*
BAZA, H.
1526*
BBADESSA, S.
1655, 3888*
BBASSY, A.S.
4567*
BBOTT, A.G.
6392*, 8370*
BBOTT, J.D.
7720
BBOTT, O.A.
1851
BDALAHOUI, A.
4984
BDEL-DAIM, M.H.
2255
BDEL-HAMID, G.
1193
BDEL-TAWAB, G.A.
2255, 4567*
BD-RABBO, H.
1526*
BDRACHMANOV, Z.N.
8791*
BE, H.
4819*
BE, M.
6975, 7461
BELEV, G.I.
5651*
BELL, M.R.
3347
BELLERA, R.M.
3466*
BERG, G.
0053
BERNETHY, B.C.
6713
BEYATUNGE, J.L.
1198
BOO ZAR, M.
2472*
BOUL-ENEIN, A.
3767*
BOUMRAD, M.H.
8121
BOUNA, G.M.
3259

ABOURACHID, H.
8470
ABRAHAM, A.
8354
ABRAHAM, J.P.
6064
ABRAHAM, J.M.
6691
ABRAHAM, P.A.
3526
ABRAHAM, R.
2445, 4449*
ABRAHAM, S.
1716*, 1751
ABRAHAM, T.
2195*
ABRAHAMSON, M.
3471
ABRAMOVA, V.G.
7226
ABRAMOVITZ, A.S.
5459, 5460
ABRAMOWITZ, I.
0371
ABRAMS, G.D.
8702
ABRAMS, R.M.
1807*, 3725
ABRAO, E.
1509
ABRASHEV, I.
7848
ABRIC, J.
9090
ABRY, M.
3319, 3786
ABSHAGEN, U.
3211
ABYZGIL'DINA, I.K.M.
7695
ACAMPA, A.
8749
ACCARDO, E.
0570
ACCARDO, S.
0093*
ACCARPIO, G.
4293
ACCARY, D.
7493
ACCARY, J.P.
6402
ACCORDI, V.
5051
ACHARI, A.N.
3633
ACHER, R.
7814
ACKERMAN, N.B.
5798, 8263*
ACKERMANN, E.
3050, 8614*
ACKROYD, F.
4250*
ACKROYD, F.W.
6047
ACOSTA, J.M.
0089, 1685*, 7516

ACRI, C.
0677
ACUNA, A.O.
1134
ADACHI, F.
3806*
ADACHI, K.
3245*, 4633
ADAM, E.
0419
ADAM, J.
5691
ADAM, P.A.J.
0862
ADAM, S.E.I.
8331
ADAM, Y.G.
7569
ADAMO, F.
2239, 9267
ADAMS, D.B.
4611
ADAMS, H.D.
4928
ADAMS, J.T.
5792, 7651*, 8209
ADAMS, M.R.
4577*
ADAMS, T.H.
7836*
ADAMSON, J.R.
3668
ADAMSON, R.H.
8546
ADAMSONS, R.
2334*, 5080
ADAMUS, J.
2739
ADDADI, K.
3022
ADDARII, F.
4613
ADECHY-BENKOEL, L.
6051
ADENIS, L.
3563
ADEZATI, L.
9046
ADIBI, S.A.
6349*, 7835*
ADIGA, K.R.
5308
ADKINS, R.B., JR.
3582
ADLARD, B.P.F.
6772*
ADLE, F.
8918
ADLOFF, M.
0504, 1977, 2207,
6701
ADLUNG, J.
2027*, 4508
ADMIRAND, W.H.
3173*
ADOMIAN, G.E.
2271*
ADRIAENSSENS, K.
6033

ADSON, M.A.
1932, 3472
AEBI, H.
3160*
AFANASYEV, A.L.
2351
AFFOLTER, H.
8817
AFINYAN, V.M.
7603
AFONCHENKO, N.N.
3729
AFROUDAKIS, A.P.
7630
AGADZHANOVA, A.G.
1310
AGAR, J.
0915
AGARKOV, V.A.
6067
AGARWAL, B.L.
8744
AGARWAL, D.P.
7812
AGARWAL, M.K.
1776, 6298*
AGEEV, N.V.
1240
AGEICHEV, V.A.
5842
AGHEMO, G.
8535
AGID, R.
6800
AGIENKO, V.D.
7625
AGNOLI, G.C.
2820
AGNOLUCCI, M.T.
2824
AGOSTI, A.
2374*, 2519, 3124*,
3896, 4534, 7877*
AGOSTI, E.
4258
AGRANOVICH, R.M.
5721
AGRESTI, A.
8773
AGUILAR FAJARDO, P.
4271
AGUIRRE, J.
0166
AGUIRRE GARCIA, J.
3603
AGURTO, M.A.
1918
AHMAD, S.
5499
AHMED, A.
3706*, 4570*
AHMED, E.
7765
AHMED, M.
7000
AHMED, Y.
7763, 9077
AHO, A.J.
1185
AHONEN, J.
2951*, 3168*
AHREN, C.
3506*
AHRENS, E.H., JR.
4785, 6352*
AHRENS, H.P.
5940
AHSAN, I.
8120
AHUED, J.R.
1362
AIDONOPOULOS, A.P.
4167
AIHARA, K.
3245*
AIKAT, B.K.
5867
AIKAWA, T.
2509*, 8321*
AISAWA, R.
1608
AISSAOUI, A.
4993, 8893
AITHAL, H.N.
0113, 3083, 7185
AIUTI, F.
9139
AIZENSHTAT, A.I.
1245
AJDUKIEWICZ, A.
8346*
AKAHOSHI, M.
4462
AKAISHI, K.
5875
AKAKI, W.
1205
AKAMA, K.
8695*
AKAMATSU, T.
7322*
AKAO, Y.
0924*
AKASAKA, Y.
6545
AKESON, A.
8541
AKESSON, B.
5560*
AKGUN, S.
8375*
AKHUNDZHANOV, B.A.
7180
AKIBA, Y.
4006
AKIMOTO, K.
6958
AKINO, T.
6464, 7781*
AKOPIAN, V.G.
3546*
AKOPYAN, V.G.
0256, 8365
AKOPYAN, Z.I.
7169
AKOVBIANTZ, A.
1038, 6947
AKTAN, H.
2767
AKZHIGITOV, G.N.
1331, 2787
ALAGILLE, D.
5190, 5218, 532
9038*
ALAGNI, G.
3346, 4225, 742
ALAMI, T.
5738
ALAMILLA, G.
2959
ALARY, R.
5354, 8770
ALAUPOVIC, P.
8293
ALAVI, I.
4109
ALAVI, S.M.
2530, 5098
ALAZRAKY, I.
1490
ALBACETE, R.A.
8067
ALBALA, A.
3115
ALBANI, M.J.
0915
ALBERT, F.I.
2517
ALBERT, H.
8859
ALBERT, O.
4013, 9280
ALBERTINI, A.
3565
ALBERTO, P.
3539
ALBINUS, M.
0063*
ALBO, D., JR.
1408
ALBOT, G.
0247, 1999, 200
2539, 3477, 4232
5880, 7395, 815
ALBRECHT, R.
5231
ALBRIGHT, E.C.
2396*
ALCINDOR, L.G.
8615*
ALCINI, E.
0157
ALDAMIZ, H.O.
1898
ALDEN, J.C.
8461
ALDEN, J.F.
2505*
ALDOR, T.
2774
ALDOVA, E.
3763, 4627
ALDRETTE, J.A.
3188, 6840
ALDRIDGE, M.
3995*

DRIDGE, W.N.
6444*
EA, J.A.
0499
EINIK, M.D.
7601
EKPEROVA, L.I.
4479
EKSANDROV, V.B.
7464
EKSANDROWICZ, R.
0528
EMAN-GAVOTTI, C.
5765*
ETTI, L.
0216
EXANDER, D.P.
6456
EXANDER, F.W.
8313
EXANDER, H.C.
5956
EXANDER, R.H.
8187
EXANDER, R.W.
1562*
EXANDER, W.D.
1679
EXANDERSON, B.
2456
EXANDRE, G.P.J.
9073
EXANDRE, J.H.
7408
EXANDROV, N.I.
7205
EXANDROV, V.B.
7458
EXIU, O.
5375
FARO, C.
1099
FSEN, A.
4738
FTHAN, O.
2633*, 2659*
GNI, A.
4121
I, I.
0119
IEFF, A.
3541
I-KHAN, M.Y.
4821*
IMOV, T.U.
7403
IMOV, V.A.
7647
IMOVA, E.K.
3534
ISJAHBANA, A.
7710
JEBOORI, T.I.
3774
KIEWICZ, J.A., JR.
6919
LAN, B.C.
5393
ALLEE, J.G.
3291
ALLEGRA, G.C.
2147, 6870
ALLEGRA, S.R.
8115
ALLEN, C.V.
1997
ALLEN, E.R.
7835*
ALLEN, J.
6968
ALLEN, J.G.
1433, 8357
ALLEN, J.M.
2278*
ALLEN, J.R.
6058*, 8322*
ALLEN, K.A.
0915
ALLEN, R.E.
3400
ALLEN, T.W.
1450
ALLEN, W.D.
8545, 8687*
ALLEYNE, G.A.O.
2213
ALLGOWER, M.
6627, 6631
ALLIEZ, J.
5182
ALLISON, P.R.
8066
ALLRED, J.B.
5598
ALMANGE, C.
2089
ALMEIDA, J.D.
3642*
ALNOR, P.C.
5784
ALOISE, P.R.
0465, 4270
ALONSO, E.
0556
ALONSO, H.G.
1954
ALPERIN, P.M.
7641, 7650
ALPEROVICH, B.I.
5703
ALPERS, D.H.
6296*
ALPERT, E.
6065
ALPERT, L.I.
0637*, 6819
ALSTON, W.C.
8335
ALTAMIRA, J.
1323*
ALTAMIRANO, M.
1674*
ALTANKOV, P.
1289, 7457
ALTER, H.J.
7230
ALTER, J.
0370
ALTLAND, P.D.
0849*
ALTMAN, D.H.
4088
ALTMANN, G.G.
1569*
ALTSHUL, A.S.
7467
ALUFFI, A.
2477
ALVARADO, F.
6363
ALVARES, A.P.
4858, 6452*
ALVAREZ CORDERO, R.
3990
ALVAREZ-MORENO, C.
0751*
ALY, J.
2263
AMAKI, M.
6828
AMANO, M.
3946*
AMBACHE, N.
2472*
AMBLER, J.
5789
AMBROISE-THOMAS, P.
5675, 8485*, 8486*
AMBRUS, J.L.
7137*
AMDRUP, B.M.
3951*
AMDRUP, E.
1030, 5030, 8880*,
8944
AMELUNG, G.
6219
AMEND, H.
5164*
AMENTA, J.S.
4009
AMERSON, J.R.
2092
AMIC, J.
3175
AMICI, A.
3874
AMIEL, J.L.
3234
AMIN, P.B.
5316
AMIN, P.M.
5965
AMIR-AHMADI, H.
0189*, 0990
AMIRHAKIMI, G.H.
1202
AMMA, M.K.P.
1732
AMMANN, R.
2788, 6548, 6757,
8259
AMMON, R.K.
1300

AMOROSI, E.
3656
AMTOFT, A.
0629
AMTRUP, F.
7490
AMURE, B.O.
5530*
ANAND, S.S.
5943
ANANDAN, J.
2971
ANARDI, V.
2630
ANASTASIO, M.
0279
ANCELLE, J.P.
3782, 4073
ANDACHI, H.
3900
ANDERS, A.
8849
ANDERS, G.J.P.A.
2620
ANDERSEN, B.
7466
ANDERSEN, C.
0962
ANDERSEN, D.
3288
ANDERSEN, J.
7642
ANDERSEN, K.
1841
ANDERSEN, M.N.
4840*
ANDERSON, B.M.
7926
ANDERSON, C.M.
0418
ANDERSON, F.L.
5077
ANDERSON, I.G.
3195
ANDERSON, J.R.
8181
ANDERSON, J.W.
2282*, 3838
ANDERSON, K.
8019
ANDERSON, M.C.
2786*
ANDERSON, P.N.
4584
ANDERSON, P.R.
1150*
ANDERSON, R.C.
3580
ANDERSON, R.H.
7739
ANDERSON, R.I.
7719
ANDERSSON, A.
1941
ANDERSSON, H.
3403
ANDERSSON, R.
0053, 7854*
ANDERSSON, S.
0811*
ANDO, A.
0026
ANDO, M.
1886
ANDO, T.
6603
ANDRAS, L.
2636
ANDRAS, P.
2517
ANDRE, J.M.
8471
ANDRE, L.J.
8134
ANDRE, R.
0591, 4184*
ANDREADIS, P.
0115, 9255
ANDREASSEN, M.
8048
ANDREI, A.
4300
ANDREICHIN, M.A.
5726
ANDREJEVIC, M.
2623
ANDREOLI, F.
1621
ANDREOLI, M.
02115
ANDREOTTI, G.C.
4302
ANDRES, M.R., JR.
5656*
ANDREW, D.J.
8419
ANDREWS, J.T.
2526
ANDREWS, W.H.H.
6456
ANDREYEV, O.V.
7266
ANDRIAMIANDRA, A.
4678
ANDROSOV, N.S.
7379
ANDROSOV, P.I.
3740
ANDRUKOVICH, A.I.
7235
ANDRUS, C.H.
6185
ANDRUS, P.
8181
ANEES, A.M.
4328*
ANGELINI, L.
2598
ANGELUCCI, L.
7859*, 7878*
ANGER, H.S.
0139
ANGHEL, I.
7659
ANGRESS, G.
1253
ANGRISANI, G.
1206
ANGULO, A.G.
0166
ANGULO, M.
7876
ANIKINA, A.Z.
7732
ANISHIN, N.S.
8150
ANJARIA, R.K.
8052
ANKERMANN, H.
7898*
ANNES, G.
1983
ANNISON, E.F.
7139*, 7160*
ANONYMOUS
0341, 0445, 0551
0616, 0617, 0619
0624, 0701, 1001
1283, 1285, 1287
1289, 1489, 1493
1882, 1893, 2116
2119, 2120, 2155
2236, 2533, 2720
2731, 2962, 3559
3629, 3760, 5383
5673, 5884, 5919
6110, 6617, 6707
6735, 7606, 8384
8435, 9122
ANSARI, H.
7456*
ANSELL, I.D.
0967, 3649*
ANSELM, K.
3328
ANSFIELD, F.J.
1221*, 3492
ANSHELEVICH, Y.V.
2635, 5546
ANTANI, J.
9260*
ANTHONY, P.P.
8151
ANTIA, A.U.
9272
ANTIA, F.P.
0787*, 1883, 567
6262
ANTICO, L.
0033*
ANTIPOV, S.G.
7266
ANTOINE, J.
9249
ANTOKHINA, L.I.
5725
ANTONELLI, A.
3918
ANTONELLI, J.A.
0684
ANTONI, F.
2423
ANTONIJEVIC, A.
0575

LIBRARY U. OF I. URBANA-CHAMPAIGN

NTONIO, E.C.
1413
NTONOV, V.F.
2351
NTONOVICH, V.B.
0974*
NTONUCCI, G.
2218
NWAR, R.A.
1590
NYOK, E.
7937
NYON, C.
6971
OKI, M.
2327*
OKI, R.
8910
ONUMA, S.
3974, 4461
UN, A.
8093
USTIN, J.
4984
YAMA, D.
1874
ABLAZA, H.
1896
PLETOVA, N.N.
1124
POIL, A.
3179, 5216
POSTOL, G.
01990
POSTOLOFF, E.
8844
PPEL, S.H.
2443
PPELGREN, L.E.
7049
PPELMAN, H.D.
2701
PPERT, H.E.
2943*, 3243*
PPLEGARTH, D.A.
444A*
PPLETON, T.C.
1786*
ROSINA, Z.G.
6010
T, W.
1815
TEKAR, S.J.
7762
RAI, H.P.
5404
RAI, T.
3320
RAKAWA, T.
2063, 8262*
RANDA, L.
0018
RATA, L.
1059
RATANGY, L.R.
5032
RATEI, J.
0160*
ARAUJO, P.S.
1616
ARBENZ, U.
4260
ARBUCKLE, J.B.R.
8424*
ARBULU, A.
8194
ARCE, M.L.
7657
ARCERITO, S.
0526
ARCHAMBAULT, A.
8713
ARCHAMPONG, E.Q.
0049
ARCHER, J.M.
0744*, 0754*, 0755*,
4770
ARCOS, J.C.
3615
ARDEN, G.M.
1718*
ARDITO, G.
9276
AREALIS, E.
0115
AREND, P.
8991, 8995
ARENDT, R.
7870, 9099, 9136
ARGENSSON, A.
2541
ARGONZ, V.
1297
ARGUEDAS, J.
6176
ARGUELLO, M.
0047, 0428*
ARGUS, M.F.
3615
ARIANOFF, A.A.
3274
ARIARATNAM, T.
3471
ARIAS, I.M.
0098*, 0882, 7956
ARIEL, I.M.
4016*, 4369*
ARIENS, A.T.
3570
ARIENS, E.J.
3892*
ARIES, V.
3944*, 3945*
ARIMORI, M.
4789*
ARIYAMA, K.
4826*
ARIYOSHI, J.
4049, 8711*
ARIYOSHI, T.
6056*
ARKO, H.
1085
ARMAN, E.
5779
ARMAS MERINO, R.
4646
ARMENIO, L.
2875
ARMENTROUT, R.W.
0833*
ARMILLEI, E.
0378, 0466, 0598
ARMINSKI, T.C.
0187*
ARMSTRONG, C.D.
8834
ARMSTRONG, D.G.
4877
ARMSTRONG, F.
1967
ARMSTRONG, J.R.
7701
ARMSTRONG, R.G.
4031, 4114
ARMSTRONG, R.H., JR.
2773
ARMSTRONG, R.P.
2565
ARMSTRONG, R.W.
6249
ARMSTRONG, W.MCD.
8553*
ARNDT, H.
6875*
ARNESJO, B.
0917
ARNOLD, D.J.
6135
ARNOLD, E.
3059
ARNOLDT, K.H.
6886
ARNOTT, S.J.
3336
ARNOUS, J.
8952
ARONOFF, A.
1451
ARONSEN, K.F.
1348*, 1389, 2035*,
3268*, 3301, 8696*
ARONSTAM, E.M.
3324
AROSIO, G.
3565
ARPIN, M.
8651
ARRANTS, J.E.
5746
ARRAZTOA, J.
2216
ARREDONDO, J.J.
1918
ARRIAGA, R.
5614*
ARRIGONI, E.
5570*
ARSENI, C.
2965
ARSENIS, C.
1712*
ARSIC, B.L.
3762
ARSTILA, A.U.
3797*

ARTEMIEV, E.N.
7399
ARTHAUD, J.R.
2861
ARTIGAS, G.V.
1509
ARTIGNAN, J.
8792
ARTOM, C.
1695*
ARTUSI, A.R.C.
0387
ARTUSI, G.R.
0387
ARUIN, L.I.
7369, 7514, 7648
ARULLANI, P.
8772
ARVIDSON, G.
5560*
ARYAMKIN, L.T.
7235
ARYEV, L.M.
7374
ARZUL, C.
9211
ASADA, S.
9217
ASAI, K.
6786, 7596
ASAKAWA, H.
5786, 6625
ASAKURA, H.
6199
ASANO, K.
3369
ASATOOR, A.M.
5475*, 8166*, 8170
ASBURY, A.K.
8269*
ASBURY, G.F.
9209
ASCHRAF, S.C.
5106
ASCIONE, A.
3604, 6873
ASENJO, A.
0018
ASERKOFF, B.
6992
ASFOUR, R.Y.
6965
ASFOURY, Z.M.
1530*
ASHCAVAL, M.
8035
ASHCRAFT, K.W.
7309
ASHCROFT, T.
3259
ASHIDA, K.
7893*
ASHLEY, D.J.B.
2699, 4263*, 4265*
ASHMORE, J.
3956
ASHRAPOVA, M.A.
7180
ASHWORTH, L.A.
0065*, 0066*
ASHWORTH, T.G.
8499
ASKAROV, A.A.
7725
ASKOVIC, D.
6924
ASNAES, S.
7221*
ASOO, K.
3365
ASP, K.
4118, 4527*
ASPIN, N.
2353
ASQUITH, P.
0407*, 5885*
ASSAN, R.
2205
ASSEFF, J.S.
7341
ASSICOT, M.
2309
ASSIF, E.
2113
ASSOUD, I.
5097
ASTACIO, J.N.
1099
ASTAKHOVA, A.M.
6096
ASTALDI, A.A., JR.
3433
ASTALDI, G.
3433, 8572
ASTE, H.
0230
ATAMANCHUK, E.I.
8002
ATANASSOVA, E.
0050, 0051
ATARE, Z.A.
7867
ATASOY, H.
6978
ATHERTON, R.M.
5567*
ATHUKORALA, A.W.
6759
ATKINS, C.
5564*
ATLAY, R.D.
2698
ATRIA, P.
4181
ATSUMI, M.
2247
ATTAR, S.
8449
ATTEBA, S.
5231
ATTIA, O.
1356
ATTISHA, R.P.
3459*, 3482
ATZERI, G.
0021
AUBREY, A.
1943
AUBREY, D.A.
7871, 7872
AUBRY, L.
5575*
AUDEBAUD, G.
9274, 9275
AUDRETSCH, J.J.
5168*, 5249
AUELINO, I.C.
0722
AUERBACH, M.
5144
AUFFRAY, P.
5188
AUGENFELD, J.
3206
AUGIER, D.
4812, 7987
AUGUR, N.A.
1137, 7451
AUGUR, N.A., JR.
3241*, 5382, 8412
AUGUSTI, A.
8875
AULIAC, P.
4707*
AUNE, S.
3242*, 3244*, 4758,
4765*, 6373, 8081
AURELI, G.
0922
AURES, D.
0071*, 1671*, 3913,
6397*, 7865*
AURIAT, J.
2575
AURICCHIO, F.
0097*
AURICCHIO, S.
0904*, 2675, 7445
AUROUSSEAU, M.
4013, 9280
AUST, G.
7875
AUTARD, A.M.
6346
AUTIER, C.
0247
AUTISSIER, N.
3850
AUVERGNAT, J.C.
6253
AVDEEVA, T.A.
7729
AVENI, F.
4987, 7426
AVENIROVA, A.I.
0362
AVERY, G.B.
2928
AVILA, L.
7116*
AVILA BELLO, E.M.
7892*
AVIOLI, L.V.
0037

AW, S.E.
5157, 7279
AWATAGUCHI, S.
2225
AWAZU, S.
3122
AWWAD, H.K.
2408*
XELRAD, A.D.
8559*
XELROD, J.
5591*
XELSSON, C.
6564, 7434
XON, A.T.R.
7058*
YABE, M.
7222*
YAD, S.R.
8643
YARI, H.
4934
YAS, E.
0691
YE, H.
4441
YHOLM, K.
8944
YLWARD, M.
0075
YROLLES, C.
3521
ZARNOFF, D.L.
2456
ZER, M.S.
5070
ZERAD, E.
8249
ZEVEDO, J.F.
0722
ZIZ, K.M.A.
4570*
ZIZ, K.M.S.
3706*
ZIZ, O.
1723*
ZNAR, J.C.
4194
ZNAR-RAMOS, R.
8514*, 8515*
ZZAROLI, P.
4613
ZZI, A.
1774
ZZOLINA, P.
0526
ZZOPARDI, O.
4936
ABA, T.
4133*
ABAEV, O.G.
7753, 7770
ABALA, J.
0282, 2597, 4078,
5073*
ABB, R.R.
5315
ABICHEV, S.I.
5710

BABIOR, B.M.
5424*
BABIYETS, A.P.
7258
BABULI, R.
7338, 7376
BABUT, J.M.
6148
BABY, T.P.
3088, 3089
BACCELLI, G.
4611
BACCHIN, P.
4832*, 7127*
BACCHIN, P.G.
2908*, 7901*
BACCHINI, G.
4905
BACCI, G.
0601, 0633, 0652,
9080
BACCINO, F.M.
8518
BACH, G.G.
6377
BACHI, T.
1785*
BACHMANN, E.
3952*
BACKSTROM, A.
1998
BACKUS, B.
0009*
BACOLLA, D.
5719, 8755
BACQUE, P.
2617
BACQUES, C.
4885
BADA, J.L.
1544
BADALIAN, K.
2228
BADEA, G.
9071
BADEN, A.
6793
BADEN, H.
3280
BADER, G.
0003*
BADER, J.P.
8172
BADIA, G.
6012
BADLEY, B.W.D.
6764*
BADLEY, W.D.
0409*
BADRE-WAGGHIRI
5738
BAERG, R.D.
7069*
BAERLOCHER, C.
6558
BAES, C.
6443*
BAETZ, A.L.
2945*

BAEZ, A.
7561
BAEZA, R.
2216
BAFFES, T.G.
1251
BAGDADE, J.
0515
BAGDASARYAN, S.T.
0327
BAGGENSTOSS, A.H.
2144, 4383, 6905,
8216
BAGLEY, D.H., JR.
3995*, 5505
BAGLIN, M.
5159
BAGLIONI, T.
3787
BAGNENKO, E.M.
1483
BAGSHAWE, A.
6866, 8294
BAHLS, G.
4240
BAHR, G.F.
8505*
BAHSOUN, H.
2531
BAI, K.I.
0172, 6179
BAIBEKOV, I.M.
7808
BAILEY, E.
6423*
BAILEY, I.
6073
BAILEY, J.A.
6532
BAILEY, J.J.
2696
BAILEY, J.M.
2349
BAILLARGEON, J.
1065
BAILLET, J.
0058*, 1837, 8158
BAIN, G.O.
3190
BAINTNER, K., JR.
4730
BAIOCCHI, P.
0527
BAIOCCO, G.
4390
BAIR, W.J.
3252
BAIRD, G.D.
3204
BAIRD, I.MCL.
3351
BAIROV, G.A.
6083, 7689
BAISSET, A.
3901
BAJOLET, S.
7325*
BAKER, D.H.
3417*

BAKER, H.
2840, 5242, 7112*
BAKER, L.
7527*
BAKER, R.R.
1989
BAKER, S.J.
5894
BAKER, T.A.
4871*
BAKER, W.N.W.
5950
BAKHABOV, U.T.
7180
BAKHADYNOV, K.B.
3675
BAKK, Y.W.
4889*
BAKKE, O.M.
1274
BAKRADZE, G.E.
0241
BALA, YU.M.
6013
BALADO, R.
1436
BALAFREJ, L.
3408
BALAN, M.
0160*
BALANZO TINTORE, J.M.
4037
BALART, L.A.
0983, 2548*
BALASEGARAM, M.
9079
BALASUBRAHMANYAN, M.
1091
BALATRE, J.
6678, 9246
BALAZS, T.
5601, 8908
BALBI, L.
2146
BALCAR, V.
8992
BALCEA, M.
0393
BALCERZAK, S.P.
1566*
BALCH, H.H.
1492, 5389
BALDAMENTI, G.
4322
BALDET, P.
9088
BALDI, A.
1923, 2630, 4206
BALDIERI, M.
7878*
BALDUS, W.P.
3651*, 6126, 6898
BALDWIN, R.W.
1581*
BALE, G.F.
3465*
BALEA, T.
5230
BALEGNO, H.F.
2330*
BALESTRA, E.
4293
BALESTRAZZI, N.
1536
BALESTRIERI, G.G.
3636, 3836, 7248,
7445
BALFOUR, J.F.
3402
BALFOUR, T.
3482
BALI, J.P.
9086
BALINSKY, J.B.
1764
BALINT, J.A.
2690*
BALIS, M.E.
1784*, 4692*
BALISH, E.
3708*
BALL, P.
7820
BALLARD, F.J.
2314, 5572*
BALLARD, P.L.
8264*
BALLARINI, G.
2519, 3124*
BALLARINO, M.
2161
BALLINGER, W.F., II.
1130, 2371*, 5831
BALLON, G.
3782
BALMER, S.
4603
BALMES, M.
1143, 9086
BALMUCHANOV, S.B.
8791*
BALNER, H.
1583*
BALOCH, K.H.
6993
BALOGH, Z.
0445
BALSER, D.
3917
BALSLEV, I.
1981, 3475, 6693*,
8971
BALSLEY, I.
8182
BALSLOV, J.T.
6857*
BALTZER, G.
6875*
BALWANI, J.H.
1417*
BALZOLA, F.
2623
BAMCI, L.R.
4674
BAMJI, D.D.
0697
BAN, J.L.
7093*
BANAUDI, C.
3581
BANBA, M.
8881
BANCHERO, F.
2185
BANCIU, M.
4453
BANCIU, T.
4044, 4453
BANCONS, J.
6019, 6119
BANCROFT, F.C.
0137
BANDELIER, H.
9263
BANDINI, S.
3564
BANDLER, M.
8122
BANDOH, J.K.
5475*
BANERJEE, D.
5626
BANERJEE, P.L.
3020
BANI, G.
9054
BANK, S.
1605, 2513*, 2540
BANKE, L.
1660
BANKS, P.A.
4327*, 5360
BANKS, W.L., JR.
3215
BANNA, P.
0526
BANNAI, S.
0096*
BANNERMAN, R.M.
4251*
BANO, A.
2938
BANOS, R.Z.
4126
BANSAL, S.C.
2901
BANWELL, J.G.
1212*, 2192*, 2193*
4571*, 4575*, 4587,
8928*, 9201*
BAO, O.
5183
BAPNA, S.B.
2138
BAPTISTA, A.
2127
BAR, U.
7550
BAR, W.
5064
BARABE, P.
4441
BARADI, A.F.
0736*

LIBRARY U. OF I. URBANA-CHAMPAIGN

BARAKAT, M.
6650
BARAMIDZE, T.G.
7629
BARAN, D.T.
5450
BARANOV, Y.F.
5709
BARANOVICH, I.M.
0974
BARANY, F.
3513, 7245
BARAONA, E.
3166*
BARASHKOVA, G.M.
5526
BARBARA, L.
3108, 4613
BARBARINO, F.
4497*
BARBARO, G.
3359, 3432
BARBASON, H.R.
8652
BARBER, A.A.
6305*
BARBERA, G.
7742
BARBERA, G.J.
6212
BARBERI, I.
0602
BARBERO, G.J.
5929
BARBEZAT, G.O.
2513*
BARBI, G.
2441
BARBIER, F.
5496*
BARBIER, J.P.
0521, 3364, 9061
BARBIER, M.
0083*, 4684, 5121
BARBIER, P.
5174*
BARBIERI, D.
1953
BARBORIAK, J.J.
7852*
BARBOSA, F.S.
2243
BARBOSO, G.
3552, 9007
BARCHI, R.L.
2290*
BARCZYNSKI, M.
1364
BARDALES CAHUA, M.A.
0462
BARDENHEIER, J.A., III.
0945*, 8236
BARDIER, M.
2617
BARDIK, YU.V.
0797*
BARDOS, T.J.
7137*

BARENBLAT, G.Z.
2888
BARGE, J.
5187, 8251
BARGMANN, R.E.
3189
BARIL, A.
7587
BARIL, E.
1728
BARIL, E.F.
0764*, 5429*, 7114*
BARILLA, M.
0195*
BARINSKY, I.F.
0015*, 3631
BARISONE, D.
0093*
BARKER, D.C.
0916
BARKER, L.F.
2106*
BARKHAN, P.
4757*
BARLATTANI, M.
5984*
BARLETTA, M.A.
5501
BARLOW, J.B.
3295
BAR-MAOR, J.A.
1257
BARMIN, V.S.
7242
BARNA, L.
2576
BARNABEI, O.
4842*
BARNABY, C.F.
0760*
BARNARD, E.A.
2306, 2307, 7037*,
7811
BARNARDO, D.E.
3651*, 6126
BARNER, H.B.
8236
BARNES, D.W.
6472
BARNES, J.M.
6844
BARNES, R.H.
7066*, 7991*
BARNES, W.H.
2578
BARNETT, E.V.
0057*
BARNETT, J.E.G.
7834*
BARNHART, M.I.
6455
BARO, M.
0238
BARON, J.H.
5655*, 8033
BARON, P.
1757, 8668
BARONE, A.A.
1400

BARR, R.
5432*
BARR, W.H.
2355, 2473*
BARREDO, C.
4197, 9092
BARRERAS, R.F.
5768
BARRET, C.
6911*
BARRETT, A.J.
4717
BARRETT, O'N., JR.
7756
BARROWMAN, J.
0917
BARROWMAN, J.A.
1687*, 7027*, 8605
BARRY, E.J.
2397*, 8671
BARRY, K.G.
7718
BARRY, T.A.
4661*, 4664
BARSACCHI, R.
4719
BARSAMIAN, L.
1887
BARSCHNEIDER, M.
4178, 8863
BARSEGYAN, R.G.
7748
BARSOTTI, J.
1956
BART, K.J.
3726, 4568*, 7697
BARTA, K.
5132
BARTEK, I.
2946*
BARTELS, J.
7192*
BARTHE, J.
5608
BARTHELEMY-FRENEAUX, C.
4854
BARTHELMAI, W.
2770*
BARTHOLOMEW, C.
5158
BARTLETT, M.K.
2715
BARTLETT, R.H.
0441, 1276
BARTLEY, W.
1713*
BARTMAN, J.
2769*
BARTOK, I.
4468
BARTOLOMUCCI, E.
4558
BARTOLONI, S.O.F.
0147
BARTOLOZZI, G.
3574
BARTON, A.D.
3826

BARTOOV, B.
7147*
BARTOS, V.
4330*
BARTSOKAS, S.C.
6388, 6389
BARTSOKAS, S.K.
5313
BARUZZI, G.
0470
BARYSHNIKOVA, A.D.
7670
BARZILAI, A.
2811
BAS, M.
2534
BASCHET, C.
5079
BASERGA, R.
3162*, 6816
BASHAND, G.H.
6134
BASHDUROV, E.P.
1425
BASKERVILLE, L.
7763, 9077
BASKIN, S.A.
8055*
BASKOVIC, D.
0654
BASQUE, G.J.
5743
BASS, D.D.
7194*
BASS, P.
3409, 4793*, 4801*,
6671*
BASSETTI, D.
9127
BASSILY, S.
3702*, 8487*
BASSO, L.V.
3172*
BASSO, N.
3149, 7679*, 8433
BASSO, R.
1063
BASTAGLI, A.
0346, 1863, 7387*
BASTIAN, R.
5278*
BASTIDE, J.
5225
BASTIDE, P.
5225
BASTONI, F.
2441
BASTOS, E.DA S.
1840, 7099
BASU, A.K.
2188*
BASU, S.
4005
BATCHELDER, E.J.
4881
BATCHVAROV, B.D.
3508*
BATEMAN, J.C.
6708
BATES, H.R., JR.
5606
BATES, R.W.
1691
BATES, T.R.
3225, 5486*
BATINKOV, E.L.
7397
BATINOV, I.N.
8042
BATKO, B.
1543, 4080
BATTERSBY, C.
2794, 7251
BATTESTI, N.
0385
BATTESTI, R.
4687
BATTEY, Y.M.
5393
BATTISTINI, C.
4905
BATTISTINI, V.
5563*
BATTY, A.F.
6259
BATZENSCHLAGER, A.
1449
BAU, D.
2401*
BAU, K.
6267
BAUBLIS, J.
7566
BAUDHUIN, P.
5446
BAUDISCH, E.
5015
BAUDRY, G.
1238, 5148
BAUDRY, M.
3849
BAUE, A.E.
6618
BAUER, B.G.
3389*, 5763*
BAUER, F.M.
1094
BAUER, M.
4099
BAUER, P.
2039*, 2855
BAUER, R.
0056
BAUER, U.
2954, 8847
BAUGH, C.M.
8540
BAUGH, J.H.
5793
BAUGHMAN, B.B.
1273
BAUGNET-MAHIEU, L.
6443*
BAUJAT, J.P.
9169
BAULIEUX, J.
6012, 9071, 9072
BAUM, P.
0510
BAUM, S.
0966, 7752, 8883
BAUMAN, J.
0906*
BAUMANN, M.
8366
BAUMANN, W.J.
3960
BAUMBER, J.S.
1701*
BAUME, P.E.
1850
BAUMGARTEN, H.G.
6299*
BAUMGARTL, E.
4531
BAUMGARTNER, R.
4938, 8959
BAUQUET, J.
8473
BAUR, O.
1928, 2205
BAUSTAD, B.
5827*
BAUT, J.H.
1816
BAUTISTA-O'FARRILL, J
8515*
BAVA, A.
0510
BAVAZZANO, A.
2994
BAXTER, J.D.
5170*
BAXTER-GRILLO, D.L.
3032*, 3792*
BAYBEKOVA, E.M.
7371
BAYELI, P.F.
3918
BAYEV, V.K.
7372
BAYINDIR, S.
0976, 1818, 8746
9076
BAYLESS, T.M.
3235
BAYLET, R.J.
1169
BAYON, N.
7008
BAZAROVA, T.D.
7732
BAZILLIO, R.
9274, 9275
BAZZICALUPO, G.
3983
BAZZOLI, G.
4613
BEAHRS, O.H.
2679, 7474
BEAL, C.B.
3311
BEARGIE, R.A.
6205
BEASLEY, J.
9140

EATHARD, G.
5243
EATO, M.
3814*, 4710*
EATTIE, A.D.
5563*
EATTIE, D.S.
7152*
EATTIE, E.J.
0432
EATTIE, E.J., JR.
3329, 5985*, 8303
EAU, A.
6677, 8954
EAUCHANT, J.
2183
EAUDOIN, J.G.
1345*, 3196
EAUGENDRE, F.
5261
EAUJEAN, M.
9013
EAULIEU, J.C.
4171, 6594, 7735,
8015
AUPOIL, B.
7030*
AUREGARD, H.
5291
AVEN, M.A.
7993*
AZLEY, J.M.
8708*
CAUD, J.P.
9245
CCHI, G.
0145, 0173, 0359*,
0360*
CHAR, M.
8380
CK, A.R.
4221, 5945
CK, C.
6562, 8015, 8751
CK, C.S.
3127
CK, F.
0005*, 1593
CK, G.
6481, 6482, 8849
CK, I.T.
8244
CK, J.P.
6482
CK, K.
0454, 2781, 6053,
6429*
CK, L.T.
5790
CK, P.
1112*, 3265*
CK, W.
2612
CKER, A.E.
5795
CKER, C.
5041
CKER, D.
3440*, 6945*
BECKER, F.F.
3162*
BECKER, H.
6703
BECKER, H.D.
4095
BECKER, H.W.
5041
BECKER, J.
8748
BECKER, J.E.
7114*
BECKER, J.M.
5945
BECKER, K.
4510, 5074*, 8368
BECKER, M.D.
0535*, 2127
BECKER, N.H.
6611*
BECKER, V.
9025, 9036
BECKERS, J.
1412, 7664
BECKETT, A.H.
3113
BECKING, G.C.
5583*
BECKWITH, B.
8267*
BECKWITH, J.B.
8187
BECQUEVORT, P.A.
2536
BECQWORT, J.
9290
BECROFT, D.M.O.
2018
BEDA, B.
4441
BEDNARSKI, Z.
4153, 4546
BEDORET, J.M.
8471
BEDUHN, D.
4949, 7231, 8850
BEECHER, G.R.
7120*
BEE[illegible]N, A.
[illegible], 7587
BEFELER, D.
2007, 6796
BEGER, H.G.
2172
BEGG, C.F.
2529
BEGLIOMINI, A.
6183
BEGUM, A.
5394
BEM[illegible] C.
6242, 7325*
BEHER, M.E.
8610*
BEHER, W.T.
8610*
BEHRENS, N.H.
6307*
BEHRINGER, B.R.
7873
BEHRINGER, G.E.
4915
BEHRMAN, G.R.
0810*
BEHRMAN, R.E.
6220
BEI, P.I.
1119
BEIER, I.
0182*
BEIER, L.
0182*
BEIGHTON, P.H.
3699*
BEITIA, S.I.
0326
BEITO, J.S.
0268*
BEIUL, E.A.
3675
BEJA, M.L.C.DEM.
1321
BEKERSKY, I.
7133*
BEKHTEREVA, Z.A.
2461
BEKTURDIYEV, K.
7686
BEL, A.
2378, 7323*, 8457
BELBER, H.
4926
BELBER, J.P.
8026
BELCHIJA, A.
8455
BELEN'KAYA, T.Y.
7228
BELESLIN, D.B.
0038*, 1653
BELFIORE, M.
4615
BELGHITI, A.A.
5817
BELIKOVA, V.P.
3631
BELINSKAIA, A.M.
7043
BELL, C.C., JR.
7655*, 8381
BELL, D.J.
3097*
BELL, G.
1333
BELL, J.W.
7296*
BELL, M.
2930
BELL, P.A.
1720*
BELL, T.
9259*
BELL, T.A.
5541, 7100
BELL, T.K.
3443*

BELLAVIA, A.
0165, 0168, 0174
BELLIER, M.
9220
BELLIN, A.
0959
BELLOMY, B.B.
7605
BELOSLUDTSEV, I.A.
2828
BELOUSOV, A.S.
7263
BELOUSOVA, N.D.
7518
BELOV, I.N.
7224
BELOZEROV, E.S.
0900, 6067
BELOZERTSEV, A.M.
2746
BEL'SKIY, A.V.
7542
BELTRAN DE HEREDIA, J.
5400
BELTZ, L.
2465, 6838
BELYAEV, M.P.
1160
BELYAEVA, V.S.
6108
BELYAKOV, O.I.
7365
BELZER, F.O.
7552
BEMAN, F.M.
4996, 5742
BENABADJI, R.
6822
BENACCHIO, L.
8590
BENAGES MARTINEZ, A.
4089
BEN-AMI, P.
6794
BENAZIC, B.
6495
BENCOSME, S.A.
8244
BENDER, A.D.
1799
BENDER, F.
8063
BENDITO, R.
2726
BENEDETTI, A.
4313
BENEDETTI, R.
4666
BENEDICT, K.T., JR.
0943*
BENENDO-KAPUSCINSKA, B.
0304
BENEVENTANO, T.C.
2507*, 5694, 6149,
8828*
BENFENATI, F.
0922, 4168
BENFIELD, J.R.
5762
BENGMARK, S.
1744, 3965, 5981*
BENGOA, J.M.
2233
BENHAMOU, J.P.
0845*, 1409, 2186,
3174, 3957, 6780*
BENINI, L.
5104
BENISCH, B.
6819
BENISCH, B.M.
4251*
BENKO, G.
8034
BEN-MENACHEM, J.
6391
BENNER, E.J.
7483
BENNET, J.
4588, 6808, 7213*,
8907
BENNETT, G.
4704*, 7794*
BENNETT, J.R.
5761
BENNETT, R.
4792*
BENNETT, T.
7819
BENNETT, T.P.
5465, 6323
BENNETT, W.R.
6972
BENO, I.
0282, 5073*
BENO, L.
2597
BENOIST, J.P.
4985
BENOIT, J.F.
8255
BENOIT, P.R.
5771
BENOZIO, M.
4835*, 4851, 4852,
4855
BENSAHEL, H.
5058
BENSHIMOL, A.
1287
BENSO, L.
0524
BENSOUSSAN, E.
4035
BENTLIF, P.
1980
BENTLIF, P.S.
1278
BENTZEL, C.J.
6351*
BENYAHIA, N.
3408
BENYSEK, L.
5130, 5132
BENZAKEIN, F.
4783
BENZI, G.
5570*
BERANBAUM, E.R.
1807*, 3725
BERANT, M.
6619
BERARD, P.
6012, 9071, 9072
BERARD-BADIER, M.
6051
BERARDI, T.
6921
BERAUD, C.
2136, 6562, 8806
BERCHTOLD, P.
4260
BERCHTOLD, R.
6575
BERCI, G.
6032, 6557
BERCOVICI, M.
4199
BERCOVICI, J.P.
6490
BERCU, G.
1990, 1991
BERDINSHIKH, B.A.
1041
BERDON, W.E.
3417*
BERENI, J.
1439, 5260, 8356
BERENT, C.
1620
BERESNEV, A.V.
7977
BERESNEVA, A.B.
1422
BERESNEVA, E.N.
5704
BEREZNEY, R.
4695*, 4731
BEREZOV, YU.E.
1016, 5844
BERG, G.
8691
BERG, J.W.
5921
BERG, M.
3404, 5521
BERG, N.O.
3446*, 8929*
BERG, P.
6991, 7312
BERG, P.A.
2091, 2817
BERG, T.
7155*, 7818
BERGAMI, F.
4394, 4561
BERGAMINI, E.
3872
BERGDAHL, L.
6621
BERGELSON, L.D.
0092*, 8287
BERGEMANN, W.
4067, 8861
BERGER, H., JR.
2299

LIBRARY U. OF I. URBANA-CHAMPAIGN

BERGER, H.J.
5140
BERGER, T.
4138
BERGERHOF, H.D.
1366
BERGERSON, F.J.
3700*
BERGIN, J.J.
6213
BERGMAN, F.
1770, 7894*
BERGMANN, H.
6963, 9125
BERGOZ, R.
8930
BERGSTEIN, N.
6771*
BERGSTEIN, N.A.M.
6842
BERIZZI, G.F.
8114
BERK, J.E.
2796
BERK, P.D.
7063*, 8314
BERK, R.N.
4111
BERKEL, I.
2688*, 2867, 4216*
BERKO, G.
6839
BERKOVICH, S.
4474*
BERKOVITS, L.
9186
BERKOWITZ, H.D.
2932
BERKOWITZ, J.M.
3708*
BERLIN, J.D.
3619
BERLIN, N.I.
7063*
BERLINER, S.D.
7415, 8152
BERLINSKI, M.
9014, 9177
BERMAN, A.T.
5901
BERMAN, I.R.
8428
BERMAN, J.K.
1844
BERMAN, M.
2668
BERMER, A.
5355
BERNACKI, E.
0516
BERNACKI, R.J.
8662
BERNADES, P.
2618, 3919, 4374
BERNARD, J.
0410*, 2681, 5335
BERNARD, M.
2136
BERNARD, P.F.
5079
BERNARD, PH.
4618
BERNARD, R.M.
0352
BERNARDI, D.
7190
BERNARDI, P.
2820
BERNARDINI, R.
0996, 8403
BERNDT, H.
2013, 3284, 3732,
5088, 5927
BERNDT, J.
2415*, 4861, 7959
BERNDT, V.
2632*
BERNDT, W.
5642, 6417, 7512,
8557*
BERNE, T.V.
8142*
BERNELLI-ZAZZERA, A.
7535*
BERNFIELD, M.R.
0879
BERNHARD, G.C.
6395*
BERNHARD, S.A.
1753
BERNHARDT, K.
1897
BERNHARDT, L.C.
1481
BERNIER, G.M.
8688*
BERNIER, J.
5291
BERNIER, J.J.
2235, 2352, 3696*,
7840, 8249
BERNSTEIN, I.A.
3069
BERNSTEIN, J.E.
3964
BERNSTEIN, L.H.
7193*, 8938
BERNSTEIN, R.
6946, 8444
BERNSTEIN, R.G.
3263*
BERQUET, J.C.
3540
BERRES, H.H.
4466
BERRETT, C.R.
8729
BERRETT, S.
0404*
BERRETTI, C.
0996, 8403
BERRY, L.J.
4714
BERSHCHANSKY, M.L.
4479
BERSOHN, I.
0544, 7530*
BERSON, S.A.
1808*, 5543, 5700
BERSTAD, A.
0793*, 7327*
BERTACCINI, G.
2374*, 3124*, 7877*
BERTASIUS, J.
8610*
BERTAZZONI, E.
2215
BERTELSEN, S.
5748
BERTERO, R.
3282, 4343
BERTHAUX, N.
3611, 5174*
BERTHELOT, P.
1409, 5495*
BERTHILLIER, G.
3845, 5599
BERTHOLD, H.
5257
BERTHON, H.P.
4351
BERTI, F.
5627*
BERTI, T.
2215
BERTIN, P.
5093
BERTI-RIBOLI, E.
0359*, 0360*
BERTLINI, A.
8812
BERTOCCHI, R.
4333
BERTOLLINI, R.
6344
BERTOLOTTI, A.
6578
BERTOLOTTI, P.
0199
BERTONI, F.
8854, 9056, 9197
BERTOYE, A.
5213
BERTRAND, E.
4441
BERTRAND, J.
8957
BERTRAND, L.
2903, 5295, 6825
BERTRAND, P.
5123
BERTRAND, R.
4418
BESANCON, F.
2538, 6911*, 9192
BESANCON, G.
5125
BESANCON, P.
8571
BESKID, M.
0773
BESSI, E.
4501
BESSLER, W.
4948

BESSON, J.
1731
BESSONE, A.
8922
BESSONOVA, G.A.
7410
BESSOT, M.
0317, 2936, 4294,
4416, 4650, 8473
BESUCH, M.
8724
BETANELI, A.M.
2967
BETHEIL, J.J.
6446*
BETTARELLO, A.
0688
BETTLEHEIM, K.A.
2187*
BEVERIDGE, J.
5858
BEVILACQUA, F.
4035
BEVILACQUA, G.
0335, 1374, 1375,
1486, 4156, 4241,
4501
BEVILACQUA, R.G.
1840, 7099
BEYLOT, J.
3653, 5181, 5818,
6252
BEYLOT, J.C.
8073
BEYUL, E.A.
0423
BEZIAT, J.M.
6547
BEZKOROVAYNAYA, N.M.
7170, 7187
BEZON, A.
5260, 8356, 9263
BHAGAVAN, B.S.
5316
BHAGWAT, A.G.
1405
BHAI, I.
0129, 8664
BHALLA, I.
1551
BHALLA, K.P.
8744
BHANDARI, Y.P.
1819
BHARGAVA, P.M.
0117
BHARGAVA, U.
5626
BHASIN, R.P.
6719
BHAT, P.
1528*
BHATAL, P.S.
2048
BHATIA, S.K.
3443*
BHATNAGAR, B.N.S.
2706

BHATNAGAR, S.P.
7917*
BHATT, J.
6015
BHATT, P.A.
3333
BHATTACHARYA, B.
1499, 3703*
BHATTACHARYAR, R.
2610
BHATTI, A.
5836
BHERING, R.B.
4542
BHIVANKAR, N.T.
6265
BHUJWALA, R.A.
1551
BIAGGIONI-BEJARANO, O.
1062
BIALOWAS-WYSOCKA, K.
4543
BIANCALANA, L.
1344
BIANCHI, A.
3707*
BIANCHI, F.B.
0601, 0620, 0633,
0652, 3084, 9080
BIANCHI, G.
4321
BIANCHI, L.
3859, 9057
BIANCHI PORRO, G.
5282*
BIANCHINI, C.
2260
BIANCIFIORI, C.
4361*
BIASIOLI, S.
7877*
BIBER, B.
4868
BICKEL, M.H.
7944
BICKERS, J.
7014
BICKERS, W.M.
4971
BICKERSTAFFE, R.
7139*, 7160*
BICKS, R.O.
3465*
BIEBERDORF, F.A.
3094*
BIEBUYCK, J.F.
5223*, 8344
BIEDER, L.
1625*
BIEDZ BLELAWSKI, D.
0149
BIELAWSKI, W.
0150
BIELKA, H.
2310
BIELSKA, H.
7809
BIEMPICA, L.
3115

BIENAYME, J.
1231, 2044
BIENENGRABER, A.
7790*
BIENENSTOCK, J.
4573*
BIENICK, C.
8382
BIERMAN, C.W.
2949*
BIERWISCH, J.
6429*
BIERZWINSKY, G.
8514*
BIESECKER, J.L.
0698
BIESEWIG, D.
3814*
BIGARD, M.
2534
BIGARD, M.A.
5284
BIGOT, R.
4906
BILEVICH, V.O.
0899
BILIOTTI, G.
1106, 1286, 1621,
2019, 2095
BILL, A.M.
8187
BILL, A.M., JR.
7469
BILLIERES, M.
4213, 4993, 8893
BILLING, B.M.
7779*
BILLUPS, W.A.
0933*, 1676
BINDER, C.
2012
BINDER, V.
2012
BINDIN, O.
2666
BINGHAM, H.G.
3602
BINGHAM, J.R.
5656*
BINI, F.
4905
BINKELMANN, L.
9098
BINSWANGER, U.
5892
BINZ, H.
1785*
BIOT, M.
7217*
BIOTOIS, H.
6722
BIRCHER, J.
9164
BIRD, J.W.C.
7818
BIRDSONG, MCL.
1521
BIRENBAUM, M.
4231

BIRK, R.V.
7547
BIRK, Y.
6410*
BIRKETT, D.
7437*
BIRNBAUM, D.
6391
BIRNBAUM, H.
0834*
BIRNBAUM, W.
5905
BIRO, I.
4190
BIRTCH, A.G.
2069
BIRZLE, H.
6053, 6577
BISCHOFF, E.
2425
BISHOP, Y.
3059
BISHT, D.B.
6896
BISMUTH, C.
1409, 5232
BISMUTH, H.
0511*, 2156
BISMUTH, V.
0505, 8949
BISSERU, B.
3012
BITAR, J.
0548, 6965
BITENSKY, M.W.
1696*
BITHELL, T.C.
6909
BITKER, M.
1183
BITTNER, K.
2386
BJORK, L.
6527
BJORKHEM, I.
1769
BLACK, E.G.
7122*
BLACK, I.R.
5591*, 7121*
BLACK, M.
7779*
BLACK, R.G.
6805
BLACK, W.C.
6915
BLACKBOURN, M.S.
7720
BLACKBURN, C.R.B.
4502
BLACKBURN, G.K.
1681
BLACKMAN, A.H.
8009*
BLACKSHEAR, W.M., JR.
2732
BLACKWELL, J.B.
3566
BLAEDEL, M.
0993
BLAHA, V.
1448
BLAIR, D.G.R.
2302
BLAIR, D.M.
0225, 0719, 0721,
8498
BLAISDELL, F.W.
5238, 8232
BLAKE, D.E.
8612*
BLAKELY, J.D.
6438*
BLAKEMORE, W.S.
8883
BLAKER, F.
8217
BLAMEY, W.E.
3347
BLANC, D.
3364, 8249
BLANC, J.N.
6547
BLANC, L.
1067
BLANC, W.A.
2769*
BLANCHON, P.
2847
BLANCKAERT, J.
5111
BLANCO, H.G.
4274
BLANCO, J.T.
1362
BLANCO, M.
1696*
BLANDON, R.
1856
BLANKART, R.
9164
BLANQUET, P.
6562, 8015, 8751
BLASCHECK, J.A.
3809*
BLASS, P.
3370
BLAT, C.
3939*
BLATT, C.
6946, 8444
BLATTLER, W.
2516, 6570
BLATTNER, R.J.
6981
BLATZAS, G.
0115, 9255
BLAUENSTEIN, U.W.
8053
BLEIBERG, H.
6731*
BLENDIS, L.M.
3649*, 4018*, 8301
BLENKINSOPP, W.K.
3812*
BLERY, M.
6525, 8949
BLICHERT-TOFT, M.
7313
BLIDARU, P.
9033
BLOBEL, G.
3060, 3063
BLOCH, E.H.
6320
BLOCH, R.
7827*
BLOCK, G.E.
2677
BLOCK, J.
2418*
BLOCK, M.B.
2030
BLOMHOFF, J.P.
5301*
BLONDHEIM, S.H.
6358*
BLONDIN, J.
3628
BLOOM, J.B.
8329
BLOOM, M.H.
1900*
BLOOM, P.B.
7078*
BLOOMER, J.R.
7063*, 8314
BLUESTONE, P.
3338*
BLUM, A.L.
3650*, 3908*
BLUM, H.
5341
BLUM, J.C.
5188
BLUMBERG, B.S.
0547, 1429, 2879,
3632, 5268, 7607,
7622
BLUMBERG, W.E.
7801
BLUMEN, L.J.
2771
BLUNDELL-HASSELL, S.K.
6273
BLYCKER, J.
5769
BLYUGER, A.F.
1370
BO, A.V.
3683
BOBAK, L.
0281
BOBBIO, P.
3552, 9007
BOBECKA, M.
4422
BOBROWSKI, H.
1402
BOCHAROVA, V.M.
7715
BOCHENEK, W.
2690*, 3867*
BOCK, F.G.
7928

BOCK, K.W.
8661
BOCK, O.A.A.
6670
BOCKEL, R.
4950, 5298
BOCQUET, I.
4257
BOCUS, G.
0512
BODANSKY, O.
2274*
BODART, N.
8954
BODART, P.
7269
BODDINGTON, H.M.
1024*
BODDY, K.
0759*, 6357*
BODE, C.
1606, 5278*, 6062*,
6936*, 8602, 8633*,
9113
BODE, H.H.
5116
BODE, O.
5487*
BODIEN, K.
2382
BODIN, F.
4277, 6885
BODMER, A.
4069
BODZINSKA, I.
4488
BOECKL, O.
4403
BOEGLI, R.G.
0118
BOEHM, T.M.
2273*
BOELCKE, G.
4451, 6467, 9108
BOEREMA, I.
2570, 3334
BOEREMA, W.J.
1847, 4554
BOESE, W.
8017
BOEV, K.
0048, 0050
BOFINGER, H.
4963
BOGAIR, N.
2113
BOGATYREVA, A.V.
0082
BOGDANOVIC, L.J.
0574
BOGDANOVICH, N.K.
3674
BOGENHARD, H.
8292
BOGET, J.C.
5181
BOGGIANO, C.A.
9105
BOGNEL, C.
7840
BOGNEL, J.C.
2235, 7840
BOGOLAPOVA, N.I.
7730
BOGULAVSKAYA, E.S.
7047
BOGUSLAVSKY, L.S.
7494
BOHLCK, I.
6159
BOHLE, E.
4509, 4532, 8307
BOHLEK, I.
9247
BOHLMANN, H.G.
9205
BOHM, R.
8536
BOHMER, R.
4503
BOHMER, T.
3982
BOHMIG, H.J.
5781
BOHNE, F.
7198
BOHRER, S.P.
6634
BOHUON, C.
2309
BOIJSEN, E.
0198
BOIKOV, Y.P.
7401
BOILEAU, F.
8473
BOISMARE, F.
1742
BOISSON, J.
2539, 7395
BOITNOTT, J.K.
1440*, 7675, 8523
BOIVIN, P.
5999, 8650
BOIX-OCHOA, J.
0573, 8978
BOJANOWICZ, K.
1128
BOJAR, H.E.
3049
BOJINESCU, I.
2206
BOKELMANN, D.
9035
BOLANDE, R.P.
4363*
BOLASNY, B.
1256
BOLES, E.T., JR.
2680, 7354
BOLES, J.
3294
BOLEY, S.J.
6611*
BOLIN, T.D.
7448, 8175
BOLINE, J.E.
5743
BOLLI, P.
4260
BOLOBONKIN, V.G.
7695
BOLOGNA, A.
0216, 1488
BOLOGNA, E.
6370, 6699
BOLONI, E.
2423
BOLOOKI, H.
8248
BOLOT, J.F.
5213
BOLOTIN, S.M.
2764
BOLT, R.J.
1087
BOMBECK, C.T.
2568, 2837, 3613,
4116, 5733*
BOMEL, J.
5401
BONACINI, G.C.
4151
BONAKDARPOUR, A.
8086*
BONANDRINI, L.
3537, 3682, 8233
BONAPARTE, H.
2123, 2296, 4476*,
4491
BONARD, E.C.
6986
BONARD, M.
6742
BONAZZI, L.
2107*
BONCHEK, L.I.
6949
BONDAR, Z.A.
1312, 7232, 7640
BONDAREV, L.S.
5723, 7259
BONDONNY, J.M.
8950
BONFIGLI, E.R.
3367
BONFIGLIO, S.
0526
BONFILS, S.
2389, 2631*, 3919,
4076, 4159, 4374,
6402
BONFORTE, R.J.
4266*
BONGIORNO, M.
5990*
BONHEIM, N.
4109
BONNAFOUS, R.
0170, 4886
BONNEMAZOU, A.
6525
BONNET, G.F.
1172

BONNET, J.L.
9032
BONNEVILLE, J.F.
8735
BONNOD, J.
5640
BONO, V.H., JR.
7945
BONOMO, G.
4148
BONOMOLO, A.
2174
BONTE, J.
0926
BONTING, S.L.
0809*
BONURA, F.
0552, 1355*
BONZANINO, A.
3577
BOOKSTEIN, J.J.
3285
BOOL, J.
2210
BOON, J.
6077
BOON, J.M.
2866
BOOTH, C.C.
1961*, 3437*, 3448*
BOOZER, C.N.
8483
BOQUIST, L.
3034*, 6621
BOR, S.
0583
BORAN, L.
4302
BORDALO, O.
0944*, 8768
BORDE, J.
5049, 5327, 8793,
8810
BORDEN, H.H.
2605
BORDES, M.
4493
BORDI, C.
9007
BORDIER, P.
5159
BORDONI, L.
3565
BOREL, G.A.
8562, 9160
BORELLINI, D.
4149
BORER, F.
1170
BORG, I.
3387*
BORGER, G.
9199
BORGERS, M.
1617, 4703*
BORGESKOV, S.
6642
BORGHI, M.B.C.
2324
BORGSTROM, B.
0917, 4815
BORIN, YA.V.
5851
BORIS, A.I.
0253
BORISOVA, R.P.
7080
BORKAR, A.V.
2784*, 6262
BORNEMISZA, G.
4547
BORNENS, M.
0011*
BORNER, E.
6078
BORNER, J.W.
7203
BORNER, P.
1173
BORNHAUPT, C.L.
3669
BORNSIDE, G.H.
0424*, 1100*, 8477
BORNSTEIN, B.
8380
BOROS, G.
0445
BOROSKY, P.
4276
BORRI, P.
8233
BORRIE, J.
6587
BORSOTTI, P.C.
1377
BORTOFF, A.
2358*
BORTOGARAY, M.C.
0510
BOS, C.J.
7802
BOSCAINO, N.
0667
BOSCH, E.
6035
BOSCHET, P.
4590, 8996
BOSCHI, S.
4682
BOSELLI, G.
9083
BOSHNIAKOVICH, V.
0337
BOSMANN, H.B.
5419*, 7136*, 8662
BOSNIAK, M.A.
0928
BOSSAERT, H.
6189
BOSSE, K.
4469
BOSSECKERT, H.
4064
BOSSINI, A.
6370, 6699
BOTELLA, R.
8996
BOTERO, D.
3773
BOTEV, B.
2821
BOTEZ, M.I.
2965
BOTHA, M.A.
5385
BOTHAM, C.M.
3861
BOTHWELL, T.H.
6945*
BOTTEGHELLI, R.
4317
BOTTGER, G.
5754
BOTTINELLI, G.
4151
BOUALI, B.
4958
BOUCARD, M.
8675
BOUCHEROT, J.
8650
BOUCHIFR, I.A.D.
0409*, 1457*, 3153*,
5436*, 6764*
BOUCHILLON, C.D.
6704
BOUDERLIQUE, J.R.
5079
BOUDRY, J.F.
8697
BOUGHA, P.
6747
BOUGHTON, E.
3013
BOUHNIK, J.
3856
BOUHOU, E.
5126
BOUIS, P.J., JR.
8477
BOULAFENDIS, D.
2756
BOULARD, C.
3309
BOULAY, J.
8996
BOULLE, J.
1011
BOULU, R.
4045
BOUMGHAR, M.
6741, 6745
BOUR, H.
3450, 4870, 8247
BOURDA, J.
3157
BOURDE, J.
2032
BOUREAU, M.
5013
BOUREL, M.
4635, 8519
BOURGEAT, A.
5038
BOURKE, J.B.
0078

BOURREILLE, J.
8876, 9089
BOURREL, P.
2088
BOURSE, R.
4812
BOUSQUET, W.F.
1773, 8612*
BOUSTANY, F.N.
0336
BOUTELIER, P.
9014, 9222
BOUTON, J.
6674
BOUVET, D.
4763*
BOVEE, K.
0912*
BOVERIS, A.A.
5241
BOVINA, C.
2426, 4827*
BOWAN, I.D.
8542
BOWES, K.L.
4866
BOWRING, A.C.
7414*
BOWRY, S.
6988, 7593
BOYCE, H.W., JR.
2559, 6016, 6063
BOYD, E.M.
6995
BOYD, G.S.
3223, 7141*, 7153*
BOYD, N.D.
3843
BOYER, J.B.
5225
BOYER, J.L.
2188*, 2411*
BOYES, D.A.
9200*
BOYETT, J.D.
2892*, 8369*
BOYEV, K.K.
7084
BOZAL, J.
1610
BOZEK, P.
1364
BRAASCH, J.W.
4551, 4899, 5179
BRABAND, H.
5691
BRACCHI, G.F.
4917
BRACHMAN, P.S.
6992
BRACHOTT, D.
6865
BRACHTEL, D.
5255*
BRACONNOT, P.
4407, 4874, 7539*
BRADFORD, R.H.
0836*, 0837*
BRADFORD, W.D.
3797*, 6018
BRADHAM, R.R.
3341*
BRADLEY, R.L.
6918
BRADLEY, S.E.
6843
BRADSHAW, E.
2944*
BRADSTREET, C.M.P.
3788
BRADY, T.G.
2280*
BRAGGION, G.
2593
BRAGHERI, R.
0668, 8114
BRAGUINSKY, J.
7450, 8169
BRAHME, F.
0369, 5068
BRAITSEVA, M.D.
7472
BRAITSEVA, N.N.
5706, 7289
BRAIZEWA, N.N.
8736
BRALOW, S.P.
8086*
BRANDAO, A.B.DEM.
4439
BRANDBOURG, L.L.
0183*
BRANDINA, A.M.
7492
BRANDIS, D.J.
0736*
BRANDLE, W.
3814*
BRANDT, K.H.
0116
BRANDT, R.H.
0257
BRANHAM, R.V.
1724*
BRANNON, R.B.
8447
BRANSFORD, R.M.
2029
BRANT, B.
2565
BRANTIGAN, O.C.
1004
BRAS, G.
5168*
BRASLAVSKY, S.
1436
BRATINA, F.
3988
BRATLID, D.
6770*
BRATU, M.
4217
BRATUS, V.D.
1124
BRATZLAVSKY, I.F.
2318
BRAUER, H.
3959
BRAUN, A.
2036*
BRAUN, G.A.
3048
BRAUN, H.
2591, 6005
BRAUN, R.A.
5744
BRAUNER, G.
2941
BRAUNS, H.T.
8724
BRAVO, J.L.
1954
BRAVO, M.
3958
BRAYTON, J.
2001
BRAZENAS, N.
8271*
BRDICZKA, D.
0883
BREAM, C.A.
5933
BRECCIA, P.
0165, 0168, 0174,
2749
BRECH, W.
2442
BRECHER, G.A.
3886*, 6498*, 6500*
BRECHT, I.
2415*
BREDIKIS, YU.I.
2826
BREHME, H.
1396
BREILLATT, J.
0742*
BREINING, H.
4398
BREMER, H.J.
8460
BREMER, J.
5421*, 7123*
BREMMER, K.C.
4662*
BRENNER, C.G.
3883*, 5462
BRENDEL, W.
5615*
BRENES, J.R.
3855
BRENGOLA, G.M.
0378, 0466, 0598
BRENNAN, P.C.
3807*, 4700*
BRENNER, G.
7961
BRENNER, S.M.
1983
BRENNOM, W.
5080
BRENOT, J.L.
4352
BRESADOLA, F.
0145, 0173

LIBRARY U. OF I. URBANA-CHAMPAIGN

BRESNICK, E.
7117*, 7943, 8658
BRESSON, Y.
3782
BRET, P.
2798
BRETTE, R.
6884
BRETTNER, A.
1958
BRETTSCHNEIDER, L.
1225*, 2068
BREUER, H.
6767*, 7783*, 7820,
8532
BREUER, J.
6767*
BREUER, R.I.
7499*
BRICAIRE, H.
9075
BRICCO, G.F.
4027
BRIDGERS, W.F.
1745
BRIERE, N.
6302*, 8282
BRIET, S.
1381
BRIGGS, M.
3624*
BRIGHAM, K.L.
1212*, 2192*, 2193*,
8928*, 9201*
BRIGHAM, M.P.
1704*
BRIGHENTI, L.
8666
BRIGUGLIO, A.
4208
BRILL, D.R.
1256
BRINDLE, M.J.
2503*
BRISKIN, B.S.
5710
BRISTOW, M.
1796
BRITO, J.S.
0268*
BRITO, T.
1400
BRITT, L.G.
1201, 5522, 5541,
7100
BRITTIN, G.M.
4755*
BRITTINGER, G.
9050
BRITTINGHAM, T.E.
2098
BRITTON, H.G.
6456
BRITTON, R.C.
1443*, 6128, 6785
BRIZARD, C.P.
7587, 7745
BRKIC, B.
8641
BRKIC, D.
2792
BROADNOVA, M.
2828
BROBMANN, G.F.
6498*, 6500*
BROCKENBROUGH, E.C.
5379
BROCKERHOFF, H.
8509*
BROCKNER, J.
2984
BRODERICK, P.A.
8115
BRODESSER, M.
3975
BRODIE, D.A.
3389*, 5763*
BRODSKY, I.
5207
BROGAN, T.D.
1261
BROGLIA, S.
1846, 1867, 1911,
1985, 2916, 3368
BROICHER, H.
4068
BROITMAN, S.A.
4250*
BROKKE, M.E.
2450
BROM, B.
2513*, 2540
BRON, K.M.
4904
BRONFMAN, M.
0676
BRONSTEIN, J.
8356
BROOKE, B.N.
0397*, 0497*, 4308*,
7430*
BROOKS, A.L.
2295
BROOKS, A.M.
1860*, 2374*, 3137*,
3907*, 7092*, 7191*,
7195*
BROOKS, F.P.
6394*, 6412*
BROOKS, M.H.
7718
BROOKS, P.T.
8865
BROOKS, S.E.H.
5168*, 5249
BROOME, J.D.
3162*
BROSNAN, J.T.
3942*
BROSSARD, M.
2313
BROTTES, H.
4643
BROUANT, J.F.
0317
BROUGHTON, C.W.
6283*
BROUSTET, A.
5181, 5818
BROWN, A.C.
3862*, 4803
BROWN, C.H.
2504*
BROWN, D.P.
6649
BROWN, M.
3548*, 4521
BROWN, H.D.
3181, 3595*
BROWN, H.J.
6926
BROWN, H.W.
1556
BROWN, J.
5361, 5362, 5363
BROWN, J.C.
7095*
BROWN, J.H.
0263
BROWN, N.K.
7562
BROWN, O.
1728
BROWN, O.E.
5429*
BROWN, P.
0399, 2025
BROWN, P.W., JR.
2607, 5968
BROWN, R.E.
2020, 3080, 8069
BROWN, R.F.
4831*
BROWN, T.
2401*
BROWN, T.C.
4584
BROWN, W.R.
4249*
BROWNING, A.B.
6440*
BROWNLEE, J.E.
6172
BROX, D.
0818*
BROYN, T.
1978
BROZ, L.
2753
BRUCE, J.
8987*, 8988*
BRUCE WHITE, G.B.
0609*
BRUCHER, J.M.
0014*
BRUCKE, P.
5674, 8431, 8705*
BRUCKNER, W.
4142, 5542
BRUCKNER, W.L.
2271*, 2366*
BRUERA, F.
9006
BRUGGER, E.
2591

BRUHL, W.
4467, 9149
BRUMPT, L.
3021, 9277
BRUMPT, V.
9274, 9275
BRUN, C.
6999, 7545
BRUNIALTI, V.F.
4674
BRUNICELLI, B.
0940*, 5765.
BRUNNEN, P.L.
1132
BRUNNER, E.
5342
BRUNNER, G.
1588, 4472
BRUNNER, H.
6951, 8394, 8827*
BRUNNER, L.
4518
BRUNO, F.
9141
BRUNO, G.
4343
BRUNO, G.C.
0347
BRUNO, M.S.
4134*, 6218
BRUNO, S.
8710*
BRUNOIS, J.P.
7325*
BRUNSER, O.
5890
BRUNT, P.W.
3514, 5958, 8238
BRUPIQUER, P.
0218
BRUSCAGLI, G.
0147
BRUSCHKE, G.
2347
BRUSILOVSKY, M.N.
7473
BRUSSILOVSKI, M.I.
7492
BRUUSGAARD, A.
3418*
BRYAN, G.T.
7330, 8829*
BRYANT, J.F.
2029
BRYANT, L.R.
6205
BRYC, R.
2860
BRYC, S.
4545
BRYGOO, E.R.
4678
BRYLD, C.
3515
BRYON, P.A.
9131
BRYS, R.
6187
BRYSON, M.F.
1202
BRZOSKO, W.J.
2947*, 5454
BUBLII, V.P.
6097
BUBLITZ, C.
0865
BUCCELLATO, C.
4238
BUCCIARELLI, G.
1621
BUCETA, J.C.
1685*
BUCHALI, K.
6042
BUCHAN, R.
2010
BUCHANAN, K.D.
1333
BUCHANAN, R.D.
2689*
BUCHANAN, W.M.
0636*
BUCHANAN, W.W.
5206
BUCHEL, K.H.
2410*
BUCHEL, L.
4743, 4744
BUCHEL, N.E.
7732
BUCHELER, E.
5676
BUCHER, H.
0868, 1467, 9164
BUCHER, N.L.R.
2455, 3940*, 8620*
BUCHER, T.
1588
BUCHER, U.
0868
BUCHIN, R.
8926
BUCHMAN, E.
1149
BUCHNER, A.
5556
BUCHS, S.
8529
BUCHTA, I.
6875*
BUCHTELA, K.
8566
BUCHWALD, H.
2344*, 3096*
BUCK, A.A.
7719
BUCK, P.
1977
BUCKO, A.
0282, 2363, 2597,
4813, 5073*
BUCSA, V.
4199
BUDD, G.C.
7037*
BUDER, H.W.
6042
BUDILIN, I.S.
7316
BUESCU, A.
1361
BUFFARD, G.
4013
BUFFAT, J.D.
5025, 6663
BUFFATTI, G.A.
7443
BUFFE, D.
3801*
BUGERA, D.A.
0627
BUGG, E.I.
3734
BUHAC, I.
8381
BUISSON, J.
5042
BUJOLD, R.
5103
BUKIN, A.S.
6094
BULANOV, A.M.
7332
BULCHANDANI, D.
2226
BULIGESCO, L.
0519
BULILLON, G.
2488
BULL, A.B.
5223*
BULLARD, J.W.
1566*
BULLENS, A.M.
7532*
BULLIVANT, S.
7797*
BULLOCK, G.R.
3579
BUMAGINA, T.K.
7641
BUMBIC, S.
8807
BUNCH, W.
6616
BUNNAG, B.
6694*
BUNNAG, D.
8496
BUNOVIC, T.
0574
BUNTE, H.
4097
BUNTIN, P.T.
6245
BUQUET, A.
5231
BURACZEWSKI, J.
1056
BURBERI, S.
8132*
BURCH, P.R.J.
2812
BURCHINSKY, G.I.
5713

LIBRARY U. OF I. URBANA-CHAMPAIGN

BURDEA, M.
3852
BURDETTE, W.J.
4436
BURDINO, E.
4471
BUREAU, O.
9130
BURGESS, E.A.
6691
BURGESS, J.N.
0043*
BURGMANN, W.
9102
BURGOS, M.H.
3045
BURHOL, P.G.
6406
BURIJAN, J.
0337, 0628, 3511
BURKE, K.
6518*
BURKE, V.
0418
BURKEL, N.
8983
BURKHARDT, K.
1034
BURKHARDT, M.A.
6981
BURKI, H.
1191, 6679
BURKO, H.
1081
BURLESON, S.S.
7117*
BURLUI, D.
6636
BURMEISTER, K.
3212
BURMESTER, H.B.C.
1524
BURNETT, W.
2794
BURNEY, S.W.
7324*
BURNS, D.G.
1605
BURNS, G.P.
0164*, 5655*, 6510
BURNS, K.R.
0266
BURNS, L.C.
8627*
BURNS, W.A.
1939, 8067
BURNSTOCK, G.
6328
BURROWS, W.
4601
BURSON, L.C.
7415, 8152
BURSTEIN, M.
1502, 3679
BURTIKOVA, T.A.
7716
BURTIN, P.
1254, 3557, 3801*
BURTON, A.F.
2429
BURTON, P.R.
1684*
BURTSEV, A.N.
7340
BUSCEMI, C.
5104
BUSCEMI, M.
2489
BUSCH, M.
6765*, 6781*, 6817
BUSETTO, G.
0512
BUSH, A.K.
0278
BUSHNELL, D.E.
7902*
BUSSE, K.
0566
BUSSEY, H.J.R.
7487
BUSSMANN, J.F.
5339, 6639, 8945
BUSSMANN, J.P.
1037
BUSSOLATI, G.
3037*
BUSTOS, G.O.
7577*
BUSTOS FERNANDEZ, L.
7450, 8169
BUSUIOC, A.
8676
BUTLER, D.E.
3409
BUTLER, M.M.T.
7909*
BUTLER, W.H.
1565*, 6844
BUTTERICK, J.D.
6868
BUTTERWORTH, P.H.W.
5442*
BUTTI, A.
0165, 0168, 0174
BUTTNER, W.
8839
BUTTS, D.
6014
BUTTURINI, U.
9007
BUTUREANU, VL.
0348
BUTZ, R.H.
2565
BUVANOV, V.M.
5727
BUYL-STROUVEN, M.L.
1365
BUYS, J.
4698*
BUZAYEV, V.T.
7373
BUZOIANU, V.
5539
BYCHKOVA, T.I.
7402
BYFIELD, J.E.
2271*, 5988*
BYNUM, T.E.
8138
BYRD, B.F., JR.
5799
BYRNE, J.J.
1316, 5774
BYRNES, D.J.
0080, 0441
BYSTROM, J.
3256
BYUN, H.H.
5659*
CABANEL, G.
4351
CABANIE, H.
6332
CABASSO, V.J.
6862
CAROCLO, J.L.F.
4772
CABRE-FOIL, V.
4042
CACCURI, S.
4485
CACHARD, A.
4135
CACHIN, M.
4374, 6044
CADALBERT, M.
6723
CADDELL, J.L.
2222
CADDIA, C.
2239
CADI, E.M.
0462
CAFFARELLO, J.
0678
CAGINI, P.
8961
CAHALANE, S.F.
0416
CAHEN, J.
0457
CAHILL, G.F., JR.
1719*
CAHN, V.N.
1934
CAILLARD, B.
4352
CAIN, M.D.
0741*
CAIRELLA, M.
2823, 9163
CAIRNIE, A.B.
3031*
CAKE, M.H.
0731*
CALABRESE, C.
3911
CALABRESE, U.
3310
CALABREZE, S.
4050
CALAMAI, M.
4100, 4517, 5192

CALCAGNO, A.
8403
CALDARA, G.
4516
CALDARELLI, G.F.
4921, 9027
CALDAS, A.C.P.G.
7581*
CALDER, R.J.
4446*
CALDERA, R.
8939
CALDERON, C.
1815
CALDWELL, B.F.
6216
CALDWELL, J.H.
0767*, 1628*
CALIFANO, G.
0780
CALL, J.B.
8546
CALLAHAN, E.W., JR.
4825*
CALLAHAN, J.W.
9043*
CALLAHAN, P.X.
0876
CALLENDER, S.T.
3869
CALLETTI, G.
0603
CALLOW, A.D.
1441*, 1507*
CALNE, R.Y.
1583*, 2067
CALO, S.
8775
CALPISTA, F.
4053
CALUSER, I.T.
0272*
CALVERT, J.
8268*
CALVET, F.
1610
CALVET, J.
1830
CALVET, J.P.
8489
CALVEZ, F.
9274
CALVEZ, J.Y.
5181
CALVOER, R.
0007*
CAMA, H.R.
7210
CAMACHO, M.
1742
CAMATTE, R.
5182
CAMENITTA, M.
9183
CAMERON, A.J.
1028, 8573*
CAMERON, C.H.
3624*
CAMERON, J.L.
3724
CAMEY, M.
1183
CAMILLERI, J.P.
1934, 1951, 1999,
4232, 5880, 8159,
8200
CAMILLONI, R.
0530*, 3670
CAMINITI, F.
2579
CAMPADELLI-FIUME, G.
6821
CAMPANA, F.P.
0195*
CAMPANA, T.
5484*
CAMPANINI, H.
2147
CAMPANINI, R.Z.
2869*
CAMPBELL, A.
1871, 4989
CAMPBELL, E.W.
4030
CAMPBELL, G.
0805
CAMPBELL, H.
2372*
CAMPBELL, P.N.
7950
CAMPBELL, R.
4129*, 4976*
CAMPBELL, W.C.
4661*, 4664
CAMPEANU, L.
1574*
CAMPEANU, M.
0393, 2873
CAMPEANU, S.
1574*, 2296
CAMPEAU, R.J.
3628
CAMPODONICO, A.
2387
CAMPO-PAYSAA, A.
0436, 1012
CAMPOS, C.G.
1898
CAMPOS, J.V.M.
1953
CAMPUZANO, M.
1930
CANAYER, H.
4493
CANDIDI-TOMMASI, A.
0530*, 0594
CANDIOTI, A.N.
0465, 4270
CANEGHEM, A.V.
2041
CANELAS, H.M.
2040
CANELLAKIS, E.S.
4693*, 4699*
CANELLAKIS, Z.N.
4693*, 4699*
CANEPA, M.
8937
CANEVARO VALDEZ, M.
7385*
CANIAC, J.
3521
CANIATO, A.
8665
CANIGIANI, G.
8909, 8948
CANINO, V.
4608
CANKOV, N.
1120
CANNAVA, N.
0526
CANNON, C.E.
9289
CANNON, J.A.
8404
CANNON, P.
0398*
CANTARELLI, I.
2174, 3396
CANTARUTTI, F.
4389
CANTELLI FORTI, G.
4010
CANTO, M.
6835*
CANTOR, M.O.
6221
CANTOR, R.E.
2511*
CANTRELL, J.R.
7296*
CAPANI, F.
0502
CAPDEVILLE, R.
8907
CAPEK, V.
8219
CAPELLE, P.
3657
CAPELLE, R.
2059
CAPELLI, A.
8854, 9056
CAPELLI, V.
6361
CAPITAINE, Y.
9020, 9167, 9214
CAPITANO, M.A.
1992
CAPKOVA, A.
5605
CAPLE, I.W.
3950*
CAPOEN, J.P.
8456
CAPPELAERE, P.
3563
CAPPELLI, G.
6626
CAPRINI, A.
3747
CAPRON, A.
4907, 9290

CAPRON, J.P.
1837, 4413, 8158
CAPURSO, A.
2053, 4636
CAPURSO, L.
2317, 2477
CARAMIA, G.
0523
CARANASOS, G.J.
1212*
CARANDANG, N.V.
3328
CARAVATI, C.M.
2773, 2924
CARAYON, A.
0471, 9266
CARAYON, P.
9277
CARBARY, B.J.
6690
CARBONI, M.
1385
CARBONNELLE, B.
9245
CARCASSONNE, M.
1836
CARCY, J.B.
7270
CARD, W.I.
0496*, 8987*, 8988*
CARDELLINO, G.
4631
CARDEN, A.B.G.
5091
CARDESA, J.J.
2238
CARDINES, R.
9259*
CARDOZA, M.R.
5947*
CAREL, A.
3786
CAREY, E.M.
8609*
CAREY, J.P.
7684*, 8445
CAREY, J.S.
8083
CAREY, L.C.
3529*
CARIANI, A.
2820
CARIRY, N.A.
1542
CARLES, J.F.
4590, 8996
CARLISKY, N.J.
2341*
CARLSON, G.M.
4793*
CARLSON, G.W.
4801
CARLSON, H.C.
7244
CARLSSON, E.I.
3844
CARNOT, F.
3364
CARO, A.M.
4581
CAROLAN, J.J.
2158
CAROLI, F.
0103*
CAROLI, J.
0599, 1502, 2061,
2815, 2991, 3179,
3556, 3558, 3597,
3652, 3679, 4072,
4233, 4257, 5174*,
5216, 5252*, 5256*,
5258, 5267, 5995*,
6055*, 8615*, 8924,
9010
CARON, J.J.
8413
CAROTENUTO, F.
2662
CARPENTER, C.C.J.
3416*, 4632
CARPENTER, J.A.
7751
CARPER, J.
3655
CARR, K.E.
1570*, 7034*
CARR, M.L.
8623*
CARRARO, G.C.
0681
CARRASQUILLA, C.
8144, 8194
CARRE, I.J.
3330
CARRELLA, M.
4482, 4484
CARRERAS, A.
7450, 8169
CARRETERO, O.A.
4504*
CARRI, E.L.
0684
CARRICO, R.J.
2800*
CARRIE, A.L.
9279
CARRIE, J.
9278, 9279
CARROLL, A.
4718
CARROLL, H.J.
7573
CARROZZI, S.
0771
CARSTENS, L.A.
6058*, 8322*
CARTER, D.C.
2667, 8239
CARTER, E.A.
5580*, 7578*, 9095
CARTER, J.P.
6276
CARTER, K., JR.
5658*
CARTER, N.W.
3100*
CARTER, R.L.
6515
CARTER, S.C.
3324
CARTERET, P.
2256
CARTRON, J.
4072
CARUSO, R.D.
4111
CARVAIS, J.
5347
CARVALHO, N.
0353, 5032
CARVALHO, P.R.
2594
CASACCIA, M.
4300
CASAGLIA, L.
4208
CASAL, R.
4034
CASALE, N.
2662
CASALI, A.M.
0681, 0633, 9080
CASALI, L.G.
3747
CASANELLO, D.E.
7795*
CASANOVA, P.
6051
CASANOVA, S.
8771
CASASA, J.M.
8978
CASAZZA, K.K.
8610*
CASCIO, G.
9141
CASCON, A.D.
0340
CASCONE, A.
1376
CASE, R.A.M.
1522
CASE, R.M.
1689
CASELLA, M.
2466
CASELLA, M.C.
2217
CASES, A.T.
1109
CASH, J.D.
0638*
CASH, R.A.
6973
CASIDA, J.E.
8647
CASPARY, W.F.
3877
CASPER, R.
0842*
CASSADY, G.
3415*
CASSANO, C.C.
2317

CASSIN, E.
0510
CASTAGNETTI, G.L.
7218*
CASTANEDA, H.
6835*
CASTEL, A.
1934
CASTEL, Y.
9213
CASTELFRANCHI, P.L.
8870
CASTELL, D.O.
0191*, 3890*
CASTELLANI, A.
9044
CASTELLANI, L.
1956
CASTELLANOS, C.
0493
CASTELLET, J.
0556
CASTELLI, S.
0623
CASTELLO, D.
8359
CASTEN, D.F.
3377
CASTER, W.O.
0895, 3189, 3192
CASTIGIONI, G.C.
0165
CASTILLO, L.S.
1843
CASTILLO, R.R.
1146
CASTLEMAN, B.
1866
CASTLETON, K.B.
0986
CASTRO, H.J.
2102
CASTRUP, H.J.
6248, 7853*
CASUCCI, N.
4053
CATANESE, B.
7863*
CATHALA, B.
7682*
CATRAVAS, G.N.
0890
CATRY, J.
6189
CATSARAS, M.
9229
CATTAN, D.
3696*
CATTANOE GODIO, R.
8790
CATTERALL, W.A.
1579*
CATZ, C.S.
7110*
CAUDET, A.F.
1541
CAUSSE, J.L.
7270
CAVAGNARO, C.A.
4278
CAVALIERI, P.
0145, 0173
CAVALLI, G.
0601, 0620, 0633,
0652
CAVANAGH, D.
2648
CAVANAGH, J.B.
6933*
CAVANAGH, J.E.
4997
CAVANAUGH, J.H.
3056
CAVAZZUTI, G.B.
0523
CAVE, R.H.
3426
CAVELLI, G.
9080
CAVES, P.K.
6705
CAVIER, R.
5408
CAVINA, E.
4921
CAYEN, M.N.
7887*
CEBULLA, R.P.
5766
CECCARELLI, B.
3835
CECI, A.
2875
CEDARD, L.
8383
CELLE, G.
0421, 3823, 8937,
8994
CELLINI, N.
6755, 8757
CELMA, A.T.
1109
CEMLING, L.
8581*
CENEVIDA, R.
8870
CENTA, A.
6160
CEPURNEEK, C.P.
7785*
CERAVOLO, A.L.
0537*
CERDA, J.J.
3260*, 3425, 6231
CERESA, A.D.
1165
CERF, M.
1887, 5346, 8933
CERIANI, B.P.
0465, 4270
CERINI, C.E.
3275
CERISE, E.J.
6206
CERNACEK, P.
0888
CERNOCH, M.
2440
CERNY, E.A.
3842
CERNY, J.
4078, 4079
CERONE, G.
2749
CERUTTI, L.
2884
CERVENYAKOV, L.
1018
CERVONI, W.A.
1545
CETRULLO, C.
8801, 8813
CEULEMANS, G.
5870, 5944, 8951,
8955
CHABAL, J.
5022, 6623
CHABANON, R.
5094
CHACON, J.P.
1147, 3405
CHADENSON, O.
4353
CHAIR, S.A.
2905
CHAIMOFF, C.
5329
CHAKRAVARTI, R.N.
5943
CHAKRAVORTY, N.C.
3703*
CHALCROFT, J.P.
7797*
CHALENCON, J.F.
6594
CHALMER, T.C.
7636
CHALMERS, F.T.
6484
CHALMERS, T.C.
0191*, 1419*, 1441*
CHALNOT, P.
4103, 4513
CHAMBERLAIN, B.E.
6876*
CHAMLIAN, A.
6051, 6346
CHAMORRO, A.
0152
CHAN, A.P.
9193
CHAN, C.H.
6988, 7593
CHANARIN, I.
0921
CHANCE, B.
1774, 2430
CHANDLER, J.G.
3964
CHANDLER, N.W.
1970*
CHANDOR, S.
4991
CHANDRA, R.
7696

CHANDRA, R.K.
2154, 3648*
CHANDRAHASA, T.R.
1560
CHANDRASA, T.R.
2074
CHANDRASEKAR, V.P.
2227
CHANDRASEKARAN, A.K.
3196
CHANDRASEKHAR, K.P.
1275
CHANDRASEKHARA, N.
6295*
CHANG, A.Y.
7919*, 8279
CHANG, B.
1626*
CHANG, C.H.
2569
CHANG, J.P.
8684
CHANG, L.O.
2322
CHANG, L.W.
7611
CHANOCK, R.M.
2104*, 2868*
CHAN YIP, B.S.S.
8717
CHAO, H.L.
4689*
CHAO, K.L.
4689*
CHAPEVILLE, F.
6483
CHAPMAN, B.L.
6661
CHAPMAN, D.I.
6259
CHAPMAN, J.R.
6025, 6460
CHAPMAN, N.D.
5744
CHAPMAN, T.M.
1572*
CHAPPELL, J.B.
4843*
CHAPPELL, L.H.
5404
CHAPSAL, O.
1896
CHAPUIS, G.
1145, 5740
CHAPUIS, Y.
6007, 6069, 8733,
9087
CHAPUY, A.
5038
CHAPUY, H.
5296
CHAPUY, M.C.
0410*, 8563
CHAPUY, N.C.
2803*
CHAPUY, P.
0410*
CHARBONNIER, A.
3875, 6069, 6371
CHARDON, P.
6242, 7325*
CHARI, A.K.
3410
CHARIOT, J.
1827
CHARKEY, I.W.
7909*
CHARLAS, J.
3523
CHARLES, J.
0380, 8737
CHARLES, J.F.
4585
CHARLES, M.A.
8266*
CHARLESWORTH, D.
5652*, 7422, 8145
CHARLEUX, H.
8255
CHARNOT, Y.
3878
CHARPENTIER, C.
5995*
CHARVET, P.
4243
CHASE, N.E.
6342
CHASSAGNON, C.
4974
CHASSIGNOL, S.
6166
CHASTEL, C.
1439, 4642, 4643,
5260, 8356
CHATANGER, F.
0158
CHATELAIN, C.
1183
CHATELIN, C.L.
0245, 0381
CHATERJEE, A.M.
1523
CHATFIELD, D.H.
3210
CHATIN, B.
2803*
CHATIYANONDA, K.
6172
CHATTERJEE, B.D.
2001, 2192*, 2193*,
4587, 6181, 7737
CHATTERJEE, C.R.
4220
CHATTERJEE, G.P.
7636
CHATTERJEE, S.K.
2610
CHATTOPADHYAY, S.
3181
CHATTOPADHYAY, S.K.
3595*
CHAUSSY, C.
5615*
CHAUVEINC, L.
4909, 5048
CHAUVET, J.
7814
CHAVENT, B.
5401
CHAVEZ, C.M.
1141, 3662*
CHAVEZ-PERON, F.
3198
CHAVY, A.
9011
CHAWLA, R.C.
1645*, 1648*, 5540
CHAYVIALLE, J.A.
4191
CHAZALETTE, J.P.
3524
CHEBYKINA, N.V.
8277
CHEEK, D.B.
4829*, 6227
CHEEK, R.C.
1201
CHEEVER, A.W.
2251*, 3776
CHELI, R.
2622, 7321*
CHELIBONOVA-LORER, KH.
8340
CHEMODANOVA, D.I.
3141
CHEN, C.C.
6208, 6321
CHEN, J.S.
7159*
CHEN, K.Y.
2806*
CHEN, P.C.Y.
6255
CHEN, S.
5280*, 5281*
CHEN, W.T.
4871*
CHEN, W.Y.
6964
CHENG, B.
8166*
CHENG, F.C.Y.
5655*
CHENG, H.
1567*
CHENG, J.T.
6964
CHEPULENOK, V.B.
5710
CHERA, G.
3186, 3187
CHERBUY, J.
1145
CHERENOK, Z.F.
3675
CHERIGIE, E.
4906
CHERINKOVA, Z.V.
7256
CHERKAOUI, O.
3408
CHERNELCH, M.
0763*
CHERNELCH, M.J.
6114*

CHERNISH, S.M.
8479
CHERNOMORDIK, A.B.
7583
CHERNOMORETS, N.N.
7671
CHERNOZEMSKI, I.N.
8637*
CHERNY, V.A.
8125
CHERNYAVSKAYA, L.A.
5727
CHERNYAVSKIY, A.A.
7299
CHERRIER, P.
4259
CHERRY, G.
5658*
CHERUBIN, C.E.
5253*, 5695
CHESTERMAN, F.C.
1594
CHESTERTON, C.J.
5442*
CHEVALIER, P.
2087
CHEVAN, J.
6360
CHEVREL, B.
0599, 2061, 5256*,
5373, 6655, 9070,
9074
CHEVREL, J.P.
3179, 5216, 6655
CHEW, B.K.
8311
CHEY, W.Y.
6379*, 8090*
CHHETRI, M.K.
3703*
CHHUTTANI, P.N.
5867, 7759, 8501
CHIAM, H.K.
4564
CHIANDUSSI, L.
2146
CHIANG, T.C.
2806*
CHIAO, S.F.
7320*
CHIARAMONTE, M.
7599*
CHIARUGI, V.P.
1623, 1711*
CHICOT, D.
4072
CHIDICHIMO, G.
4390
CHIESA, A.
2146, 2753
CHIESARA, E.
3813*
CHIGA, M.
3620
CHIHARA, T.
4988
CHIKAMATSU, S.
2380
CHIN, L.
5639
CHING, S.
6123
CHIODI, H.
2045
CHIOU, C.Y.
2360
CHIPMAN, D.W.
3707*
CHIRIGOS, M.A.
4847
CHISLOVSKY, K.I.
5472
CHISOLM, D.
1679
CHISOLM, D.J.
0080, 0084*, 3155*
CHISSOV, V.I.
7229
CHISTOVA, M.A.
0042*, 5808
CHISTOVA, N.M.
2524
CHLUD, K.
1298
CHMEL, J.
0973
CHMELIK, V.
8931
CHMIELEWICZ, Z.F.
7137*
CHMURA, G.
4183*
CHOI, B.S.
0221
CHOI, C.S.
0223
CHOI, H.J.
0221, 0643
CHOI, J.H.
0221
CHOI, Y.C.
6781*
CHOMETTE, G.
1379
CHORDI, A.
0751*
CHORVATHOVA, V.
2597, 5073*
CHOU, C.
4871*
CHOUBRAC, P.
9228
CHOUDHRY, J.N.
4847
CHOUDHURY, A.
6738
CHOW, K.W.
5082
CHOWDHURY, A.K.M.A.
4570*
CHOWERS, I.
5926
CHRETIEN, J.
6731*
CHRISPIN, A.R.
0984, 2760
CHRIST, W.
7204
CHRISTELER, A.
0569
CHRISTENSEN, C.
1408
CHRISTENSEN, J.
3123*, 3414
CHRISTENSEN, R.M.
8969
CHRISTIAN, J.E.
3102*
CHRISTIAN, P.M.
0349
CHRISTIANSEN, J.
6642, 6956, 7094*,
9215
CHRISTIANSEN, K.H.
1263
CHRISTIANSEN, P.A.
6348*
CHRISTIE, G.S.
5568*
CHRISTIE, J.
0465, 4270
CHRISTIEN, G.
0333
CHRISTODOULIDES, L.
2406*
CHRISTOFFERSEN, P.
3601, 6776*, 6929*,
7652*, 8298, 9042*
CHRISTOFLE, J.
4232
CHRISTOFOROV, B.
4045, 5735, 8679
CHRISTOPHER, N.L.
0228, 8027
CHRISTOPHER, P.J.
3010
CHROMINSKA, H.
1426
CHU, L.C.
0887
CHUA, K.L.
3261*, 7448
CHUAN, T.N.
6031
CHUBINIDZE, D.P.
7714
CHUCHUMASHEV, S.G.
7053
CHUCK, G.
7572
CHUKAVINA, A.I.
7574
CHUMAKOVA, N.I.
5728
CHUN, J.Y.
2923
CHUNG, C.K.
0221
CHUNG, E.B.
3296
CHUNG, J.Y.
0223
CHUNG, K.W.
0307

CHUNG, M.H.
0474
CHUNG, R.S.K.
7862*, 7883*
CHUNG, S.I.
2380
CHUNG, S.Y.
0474
CHUTE, A.M.
6260
CHVOJKA, J.
8765
CHWIROT, E.
3780
CHYTIL, F.
3218
CIAMPOLINI, M.
3555, 3574
CIANCARELLI, A.
0669, 2598
CIAPPI, G.
2146
CIARKOWSKI, J.
5691
CIARLA, O.
9065, 9116, 9118,
9119
CICCIMARRA, F.
3993
CICCOLINI, A.
3374, 4237, 6567,
6698
CICCONE, G.
9174
CICERI, C.
0831*
CIECIURA, L.
8851
CIECKIEWICZ, J.
1055
CIHAK, A.
2412*, 3800*
CIHULA, J.
0576
CINCA, N.
3544*
CINQUE, G.
0243, 8773
CIOBA, A.
4041
CIOBANU, V.
2085
CIOLI, V.
8132*
CIPITRIA, J.C.
3147
CIRAVEGNA, G.
8985
CIRIC, S.S.
7510
CIRILLO, N.
4169
CIRILLO, R.
0692
CITTANOVA, N.
4738
CIURANA, A.J.
6825
CIVANTOS, F.
7516
CIVARDI, F.
3082, 6491, 7934,
8786
CIVETTA, J.M.
6235
CIXOUS, P.
9091
CLABAUT, Y.
3337, 3467, 3468,
3751, 4649
CLAGETT, O.T.
1008, 7360
CLANCY, J.J.
5741, 6606
CLARE, D.E.
9140
CLARET, M.
7838
CLARISSE, J.
5348
CLARK, B.L.
2968
CLARK, C.D.
4341
CLARK, C.G.
1613, 1988
CLARK, H.E.
5558*
CLARK, J.V.
2073
CLARK, K.
0783*
CLARK, M.
4386
CLARK, P.J.
2648
CLARK, R.G.
1211
CLARK, R.M.
8156*
CLARK, S.B.
0032*
CLARK, W.R., JR.
3584
CLARKE, A.
4910, 8879*
CLARKE, A.D.
6613*
CLARKE, A.M.
1629*, 1630*, 1647*
CLARKE, R.
3093
CLARKE, R.M.
7067*
CLARKE, V.DE V.
0225, 0719, 8498
CLARKSON, K.G.
6971
CLASSEN, H.G.
1727
CLASSEN, M.
1673*, 5127, 5998,
6530, 6561, 8109,
8581*, 8990
CLATWORTHY, H.W., JR.
2680, 5864, 7506,
8448
CLAUBERG, G.
9111, 9112
CLAUSEN, J.
0413
CLAUX, J.
1830
CLEARFIELD, H.
8334
CLEATOR, I.G.M.
6156*, 8054
CLEMENCON, G.
6974, 8891
CLEMENT, D.
8956
CLEMENTI, F.
3835
CLEMENTS, J.L.
2668
CLEMETT, A.R.
1515
CLENDINNEN, B.G.
0483, 7093*
CLERC, M.
2857*
CLERMONT, G.H.
7651*
CLEROU, R.P.
9261*
CLERY, A.P.
3471, 5923, 7478
CLEVELAND, J.C.
1968*
CLEVELAND, R.J.
3586
CLIFF, J.M.
4186*
CLIFTON, J.A.
1259, 9129
CLINE, W.L.
2868*
CLINGER, W.A.
6671*
CLINTON, J.J.
0614
CLOCHE, R.
2156
CLORE, J.N., JR.
0965, 5697
CLOT, J.P.
0506, 1379, 2046,
2235, 5146, 5151,
5154, 9086, 9177
CLOT, P.
5142
COALSON, J.J.
7588
COAN, B.
2783
COATS, E.
5468
COATSON, R.E.
0002*
COBB, J.L.S.
7819
COBB, J.S.
1605
COBBS, C.G.
1341

COBRUN, R.J.
5303
COCCO, A.E.
0228, 1004, 1095,
4185*, 6690, 8027,
8058, 8476
COCHRAN, A.J.
3623
COCKCROFT, D.M.
4446*
COCKEL, R.
3391*, 4029
COCKS, J.
8315
COCKS, J.R.
8478
CODE, C.F.
0802*, 1672*, 3238,
3704*, 3884*, 3889*,
4789*, 5519*
CODEGONE, M.L.
0146
COE, F.L.
3077
COE, J.D.
3298, 8402
COELHO, R.G.P.
5733*
COEN, R.
4598
COERS, C.
3456
COFFY, N.
6012
COGBILL, C.L.
5966
COHEN, A.
5976
COHEN, A.B.
6249
COHEN, A.M.
5466, 7907*
COHEN, D.
5734*
COHEN, G.J.
7738
COHEN, J.L.
7167
COHEN, M.I.
0194*, 2891*, 4711*,
6611*
COHEN, M.M.
6509
COHEN, P.P.
1764
COHEN, R.B.
2715
COHEN, R.D.
1611
COHEN, S.
2544*, 2927
COHEN, S.M.
7330, 8829*
COHEN, W.N.
8941*
COHEN, Y.
0798*, 6031
COHN, C.
2403*
COHN, E.M.
2511*
COHN, I., JR.
0424*, 1100, 3483,
6246, 8477, 8837
COHN, J.N.
2145
COHN, L.H.
2137, 8232
COHN, P.
8977
COHN, R.
4199
COLAFRANCESCHI, M.
0147
COLAO, G.
6873
COLBERT, W.T.
1831
COLBY, E.D.
7005*
COLCHER, H.
6560
COLCOCK, B.P.
2755, 8975
COLDEFY, J.M.
2681
COLDWELL, B.B.
6061*
COLE, D.R.
6796
COLE, F.H.
8074
COLE, G.J.
1879
COLE, J.F.
3202
COLE, J.D.Y.
5681
COLE, W.R.
2143
COLELLA, C.
3926, 3927, 3928
COLEMAN, R.
5430*
COLENBRANDER, H.J.
4000
COLES, J.C.G.
9184
COLI, R.D.
5934
COLIN, A.
9062
COLIN, D.
4164
COLIN, R.
0473, 4243, 6861
COLIN-JONES, D.G.
1675*, 2377, 3136*
COLL, J.
1830
COLLAN, R.
3212
COLLAN, Y.
6501*
COLLEN, D.
6189
COLLI, W.
0843*
COLLIE, R.J.
8193
COLLIER, R.H.
2808*
COLLIN, P.P.
9233
COLLINI, G.
5845
COLLINS, D.C.
2447
COLLIS, J.L.
4115, 6584
COLOBERT, L.
3845
COLODNY, A.H.
3560
COLOMBI, A.
5660*
COLOMBO, C.
7255
COLOMBO, P.
3537, 3682, 8233
COLON, A.Z.
0715
COLTORTI, M.
4456, 4482
COLVER, H.D.
9107
COLVIN, M.
7945
COLZANI, F.
3564
COMBE, P.
0476
COMBEMALE, B.
0232, 0289, 1917
8062, 8257
COMBES, B.
0821*, 4754*
COMBESCOT, C.
5574*
COMET, M.
0196*
COMMONER, B.
1759
COMOLI, G.
6870
COMPERE, R.
3972
COMPORTI, M.
4471
COMTE, B.
9291
CONAWAY, C.
3181
CONCEICAO AVELINO, I.
0722
CONDON, J.R.
5612*
CONDON, R.E.
2837, 3613
CONDURSO, R.
8912
CONGIU, P.
4391
CONN, J.H.
1141, 3662*
CONN, H.O.
1384, 6121, 6582,
6941*, 9153*

CONNELL, A.M.
3897, 5681
CONNEY, A.H.
6449*
CONNING, D.M.
3861
CONNOCK, M.J.
3796*
CONNOLLY, C.C.
1407
CONNOLLY, J.E.
7684*, 8445
CONNOLLY, J.M.
8202
CONNOR, D.H.
4660*
CONRAD, M.E.
7832*, 8688*
CONRADI, T.
5752
CONROY, J.D.
0301
CONSORTI, P.
3831
CONSTANTIN, E.
0077
CONSTANTIN, M.J.
5625
CONSTANTINESCU, C.
4453, 6636
CONSTANTINESCU, M.
9183
CONSTANTINESCU, S.P.
4705*
CONSTANTINO, D.
8346*
CONTANTINO, D.
1418, 2501*
CONTE, M.
3139, 3140
CONTI, A.
0165, 0168, 0174
CONTI, F.
3813*
CONTRERAS GUERRO, E.
5395
CONTRI, T.
1054
CONTRO, L.
2876
COODLEY, E.L.
8031
COOK, D.M.
3454
COOK, G.C.
0535*, 1199, 7850
COOK, H.B.
1088
COOK, J.D.
7842
COOK, J.L.
3429
COOKE, A.R.
3104*, 5494*, 5533*
COOKE, C.L.
2924
COOKE, E.M.
2232
COOKE, R.A.
5219, 7739
COOKE, W.T.
0407*, 4308*, 5877*,
5883*, 5885*, 6685*
COOMBES, M.
6156*
COON, M.J.
4716
COOPER, G.N.
0163*, 6943*, 6944*
COOPER, J.H.
7568, 8401
COOPER, P.
7358
COOPER, R.
3551*
COOPER, W.K.
4712*
COOPERMAN, L.R.
2656*
COPELAND, E.M.
2713
COPER, H.
7204
COPP, E.F.F.
6465
COPPI, R.
9163
COPPOC, G.L.
0135
COPROS, M.
0244
COPSEY, K.
7124*
CORABOEUF, E.
7838
CORATELLI, P.
4725
CORBETT, J.J.
8415
CORBETT, W.E.N.
5072*
CORBITT, J.D., JR.
7665
CORCINO, J.J.
6375
CORCORAN, P.L.
8314
CORDANO, A.
6227
CORDEL, J.C.
9131
CORDONE, G.
3442*
CORDONNIER, D.
0622
CORDOVES, O.R.
4107
CORINALDESI, A.
0215, 0322, 3310,
8789
CORINALDESI, R.
8771
CORLEY, K.C.
0363
CORMIER, J.M.
2000, 8452
CORNATZER, W.E.
7962
CORNBLATH, M.
4689*
CORNEANU, M.
5539
CORNELI, F.
3926, 3927, 3928
CORNELIUS, C.E.
1771, 4781, 5205
CORNET, A.
3364, 3366, 9277
CORNET, E.
0694
CORNIL, A.
0390, 2212, 5160
CORNILLOT-CLEMENT, A.
5999
CORNU, P.
9228
CORONAT, L.
6678
CORRADINO, R.A.
4775
CORREA, P.
3344
CORREARD, R.P.
6678, 9246
CORRIN, B.
2558
CORRY, R.J.
2715, 3198
CORSI, C.
5033, 7254
CORTE, E.D.
6821
CORTES, L.
1897
CORTESE, L.
7742
CORTESINI, C.
6626
CORTIZAS, J.L.
0577
COSCELLI, C.
9007
COSCIA, M.
4024
COSMA, V.
4082
COSSA, J.F.
8255
COSSART, Y.
0607*
COSSART, Y.E.
3625*
COSSON, R.
8413
COSTA, A.A.
7565
COSTA, M.
9139
COSTA, V.P.
0939*
COSTE, F.
5737
COSTE, T.
5185

COSTER, M.E.E.
2221, 2234
COTTE, J.
3524
COTTE, M.F.
6166
COTTINI, G.F.
4630
COTUL, S.
3302, 4497*, 8020
COUCHMAN, K.G.
1625*
COUDERT, J.
4687
COUDOUX, P.
6242, 7325*
COUINAUD, C.
6722, 8450
COULBOIS, J.
3309
COULIBALY, N.
4680
COULLAUD, D.
6367
COULOIGNER, J.
5042
COULOMB, M.
4681
COULTAS, R.J.
5603
COUPLAND, G.A.E.
1938
COURAUD, L.
2087
COURTE, M.T.
5574*
COURTNEY, R.A.
7292
COURVOISIER, B.
6688
COUTINHO, A.
0713
COUTURE, J.
5103
COUTURIER, D.
4786*, 6387, 8578
COUTURIER-TURPIN, M.M.
4786*
COWGER, M.L.
0841*
COWLEY, D.J.
1672*
COX, A.G.
1491, 1789, 1925*,
3187*, 3449*, 5655*,
7082
COX, B.
1346*
COYNE, V.E.
5268
COZZONE, P.
7030*
CRABBE, P.A.
0417, 8165*
CRABTREE, J.M.
5766
CRAFT, I.L.
4753

CRAIG, J.M.
9216
CRAIG, J.P.
3996
CRAIG, O.
7273
CRAIGHEAD, C.C.
0983
CRAIGIE, A.
1694*
CRAMAROSSA, L.
2115
CRAMPTON, R.F.
1626*
CRANE, C.W.
2134*
CRANE, F.L.
4695*, 4731
CRANE, M.
6453*
CRANE, R.K.
3877, 7831
CRANZ, G.
8488
CRAWFORD, A.P.
5955
CREAM, J.J.
7678*
CREAMER, B.
2194*, 5433*, 7058*
CREAN, G.P.
0734*
CREANGA, V.
3852
CREHALET, A.
4055
CREMA, A.
0040*, 5508*
CREMASCHI, D.
2398*
CREMIN, B.J.
3768*, 5119
CRENSHAW, W.
1681
CRESPI, C.
8856, 8889
CRESPIN, B.
9075
CRESPON, B.
2000, 3477, 5880
CRESS, D.C.
6455
CRET, L.
6012
CRET, R.
9071, 9072
CREUTZFELDT, W.
5971, 6467, 7964,
8245, 9015*
CREUTZIG, H.
4057
CRIDER, R.J.
1980
CRILE, G., JR.
5953
CRINBERG, A.A.
5842
CRISCI, E.
0377

CRISLER, C.
8898
CRISMER, R.
2574, 5402
CRISP, A.H.
7709
CRISS, W.E.
3810*
CRISTINA, P.
2629
CRISTINA, P.A.
4459
CRISTOFOLINI, M.P.
9046
CRITCHLEY, D.R.
7831
CROCE, C.
4322
CROCELLA, A.
8710*
CROCKARD, H.A.
6705
CROCKER, A.D.
1633*
CROFT, D.N.
0791*, 5433*
CROFT, J.D.
0639
CROHN, B.
8223
CROISIER, J.C.
8249
CROIZAT, P.
9131
CROMER, J.K.
0365
CRONHOLM, T.
3173*, 3240*, 5254
CROOM, R.D., III
8107
CROS, J.
4678
CROS, R.C.
8750
CROSBY, W.H.
3184
CROSS, G.
8347*
CROSS, S.A.M.
6308*
CROSS, V.F.
3427
CROSSLEY, G.
8704*
CROUNSE, R.G.
2444
CROUTHAMEL, W.C.
7071*
CROUZET, G.
0510
CROW, H.
2006
CROW, J.L.
7509
CROWLEY, L.V.
7829*
CROYDON, M.J.
6613*

CRUMB, C.K.
8110
CRUZ, A.L.
1918
CSABA, B.
7200
CSAKY, T.Z.
6351*
CSANYI, K.
2496
CSENDES, A.
0514
CSILLAG, J.
6303*
CSIPKES, T.
3881
CUALLI, G.F.
3147
CUARON, A.
7016
CUBERTAFOND, P.
6147
CUCCURULLO, L.
0016, 4456
CUCHE, M.
3598
CUCINOTTA, U.
6654
CUCU-CABADAIEF, L.
4629
CUELLO, C.
3344
CULLEN, A.B.
8375*
CULLEN, D.R.
7275
CULLEN, R.A.
8309
CUMMACK, D.H.
8241
CUMMINS, G.M., JR.
2982
CUNHA, A.B.
2196
CUNNINGHAM, R.D.
1745
CUNSOLO, A.
8878
CUNY, G.
4298
CUPPS, R.E.
1932
CURCHOD, B.
9021
CURLIN, G.T.
4632, 6249
CURRAN, P.F.
3105*, 3106*, 4771,
8549*
CURRELI, A.
2239, 9267
CURRERI, A.R.
3492
CURRIE, R.A.
6210, 6588
CURRIN, D.R.
2453
CURRIN, J.
1357
CURT, J.
0777*
CURT, J.R.
1637, 1644*
CURTIS, H.J.
3071
CURTIS, J.L.
1573*
CURTIS, L.E.
0660
CURTIUS, F.
8997
CURZON, G.
0859
CUSCHIERI, A.
2698
CUSHMAN, P., JR.
7705
CUSSLER, E.L.
7930
CUSTER, M.D., JR.
0965, 5697
CUTHBERTSON, A.M.
4279, 4289, 5118
CUTLER, L.
2339*
CUTLEY, P.
0540
CUTROPIA, J.
4194
CUZIN, J.
0450
CZAJKA, D.M.
6440*
CZARNECKI, B.
0379
CZECH, W.
8909
CZECHOWICZ, W.
0350
CZEMBIREK, H.
4949
CZIRBUSZ, G.
2946*
CZITOBER, H.
5215
DAAE, L.N.W.
5421*
DABNEY, J.M.
4871*
DABROWSKI, A.
2637
DABSKI, H.
2860
DACIEWICZ, Z.
0528
DACKA, E.
2638
DAC MELO, J.R.
4174
DA COSTA, J.
6961
DA CUNHA, M.A.R.
1205, 1288, 2015,
2625, 2851
D'ACUNZO, L.
4021
DADOUKIS, J.
4167
DAGHER, F.J.
0482, 6585
DAGLE, G.E.
5763*
DAGRADI, A.E.
6113*
DAHLIN, D.C.
2718, 2814
DAHLQVIST, A.
3024*, 3305, 3446*,
5886*, 8929*
DAIDO, R.
4979, 6592, 8113
DAIMON, S.
3587
DAINKO, E.A.
8974
DAIRMAN, W.
5601
DAJANI, R.M.
5235
DAKSHIMAMURTI, K.
8663
DALAINAS, V.
6662
DALAVURAK, V.P.
7390
DAL-CO, C.
4459
DALE, J.
4580
DALE, J.E.
7386*
DALE, M.M.
0905*, 7856
DALIANA, M.
3000
DALICHAU, H.
4125
DALINKA, M.K.
3423, 7722
DALLA PALMA, L.
4020
DALLE, M.
7325*
DALLENGACH, F.
2024
DALLNER, G.
7782*
DALL'ORSO, F.
8794
DALMARK, M.
4800
DALMATOV, D.M.
0657
DALMONTE, P.R.
4500, 6874, 8878,
9145
DALMONTE, R.
9056
D'ALONZO, U.
0395, 0443, 3525
DALSGAARD, M.
6076
DALTON, W.E.
7508
DALY, J.F.
7381

DALZIEL, K.
1604, 1775
DAMMACCO, F.
4148
D'AMOURS, C.
8815
DAN, S.
0553, 2843
DAN, V.
5349
DANCESCO, P.
6254
DANCIS, J.
4857
DANDESCU, R.
3381
DANDRIFOSSE, G.
4816, 6401, 6418
DANE, D.S.
3624*
DANESE, C.A.
6151
D'ANGELO, G.
9066
DANGOUMAU, J.
2136
DANI, H.M.
1732
DANIEL, P.
5062
DANIELE, F.
2053
DANIELE, G.M.
4054
DANIELE, M.T.
3126
DANIELI, G.
4500, 6874, 9145
DANIELSEN, A.
5698
DANIELSSON, H.
1769
DANILOV, A.YA.
3412
DANILYAK, V.YA.
7980
DANJO, H.
2078
DANNACKER, D.
8685*
DANNER, P.
7635
DANON, P.
6656
DANSE, E.
9090
D'ANTONIO, G.
9142
DANUS, O.
8426
DAOUD, K.
6201
DAOUST, R.
6316, 8282
DARBARI, D.M.
8713
DARBY, W.J.
6275

D'ARCANGELO, E.
9163
DARDANI, G.
6632
DARDANONI, L.
9138, 9141
DARDIK, H.
6149
DARGIE, J.D.
3002*
DARLE, N.
1580*, 8745
DARLING, D.B.
7292
DARMAWAN, S.
3646
DARNIS, F.
4408, 4435, 5187,
5191, 9049
DARNTON, S.J.
1687*, 7027*
DAROCZY, A.
8319*
D'ARRIGO, C.
1284
DART, C.H., JR.
5967
DART, G.
5071*, 5980*
DAS, B.C.
0162*
DAS, C.R.
3020
DAS, K.M.
1431
DAS, L.
2836
DAS, M.L.
7891*
DAS, N.P.
8185
DAS, P.C.
0638*, 1431
DAS GUPTA, B.N.
1391
DAS GUPTA, M.
8393, 9128
DAS GUPTA, T.K.
7683*
DA SILVA, A.L.
4174, 6700
DA SILVA, J.A.F.
1361
DA SILVA, J.M.J.
4035
DA SILVA, L.C.
0537*
DA SILVA, L.D.
2852
DA SILVA, M.A.C.T.
1542
DA SILVA, S.D.
2852
DA SILVEIRA, M.J.X.
5300*, 6155
DASS, A.N.
1624*
DATTAGUPTA, A.K.
8146

DAUDA, GY.
1706*
DAUGHADAY, W.H.
9153*
DAUM, R.
0426*, 8821, 897
D'AVANZO, M.
4612
DAVARIS, P.
6853
DAVARIS, P.S.
6609*
DAVCEV, P.
0596
DAVE, B.T.
3333
DAVENPORT, H.W.
8556*
DAVENPORT, T.J.
1498
DAVID, D.
4734
DAVID, H.
0184*, 2319, 7816
8844
DAVID, J.S.K.
8503*
DAVID, M.
6166
DAVIDSON, A.J.
8748
DAVIDSON, C.S.
1420, 7526*
DAVIDSON, J.F.
7623
DAVIDSON, J.R.M.
5770
DAVIDSON, M.
2975, 5996
DAVIDSON, W.D.
0071*
DAVIES, E.R.
2512*
DAVIES, J.A.
8835
DAVIES, M.W.
6365
DAVIES, P.
7109*
DAVIES, S.H.
7275
DAVIS, A.E.
1683*, 3154*, 5969,
7448, 8175
DAVIS, C.E.
2971
DAVIS, D.A.
7301, 7362
DAVIS, D.C.
3161*
DAVIS, D.R.
1583*
DAVIS, E.
1850, 8699
DAVIS, G.T.
0934*
DAVIS, J.E.
5918

LIBRARY U. OF I. URBANA-CHAMPAIGN

VIS, J.O.
1701*
VIS, J.R.
9271
VIS, J.V.
0985
VIS, J.W.
0911*
VIS, L.E.
8360
VIS, N.
8329
VIS, P.S.
5071*, 5980*, 7785*
VIS, R.B.
5361, 5362, 5363
VIS, R.D.
1392
VIS, S.D.
2949*
VIS, W.G.
2474*
VIS, W.L.
7833*
VIS, W.W.
7843
VYDENKO, V.A.
0997
VYDOV, I.I.
8124
VYDOVA, C.YA.
0092*
VYDOVA, N.P.
7287
WE, D.L.
5361, 5362, 5363
WSON, A.M.
3697*, 4242*, 5879*,
6026, 6184
WSON, I.
5946*
WSON, J.H.
8902
WSON, J.L.
7570, 8301
WSON, R.B.
3112
WSON, R.M.C.
2424, 4820*
WSON, W.
7913*
WSON-BUTTERWORTH, K.
5387
Y, C.E.
2864
Y, R.G., JR.
1189
YAN, A.D.
0550
YE, G.T., JR.
6230
AL, W.B.
0295
ALCANTARA, L.G.
4492
ALMEIDA, A.D.
7099
AN, A.C.B.
0982, 3271*

DEAN, B.
1713*
DEAN, D.
8106
DEAN, E.E.
7182
DE ANDRADE, M.
3781
DE ANDRADE, M.R.
8495
DE ANDRADE, R.
4085
DEATSCH, W.W.
1658
DEBARROS, Q.
6688
DE BATTISTI, G.
1401
DE BAUN, J.R.
6433*
DEBELUT, J.
8228
DE BERGEYCK, E.
5701
DE BERNARDI, B.
0364, 4258
DEBERTRAND, P.
0450, 9069
DEBEUGNY, P.
4162, 8979
DE BEUKELAAR, A.
4255
DEBIEC, T.
4874
DE BOER, W.
8315
DEBOER, W.G.R.M.
0950*
DEBOT, P.
8715
DE BRANDT, C.
0732*
DEBRAY, C.
1827, 1887, 2491,
3924, 4047, 4098,
4609, 4786*, 5584,
5663, 5665, 6387,
6416, 8578, 8933
DEBRECZENI, S.
8785
DE BREYER, I.J.J.
3969
DEBRITO, T.
0537*, 0688, 7581*
DEBROISE, A.
5349
DEBRU, J.L.
0622
DE BRUIJNE, H.
3681
DE BRUIN, E.J.P.
3664*
DEBRY, G.
4259, 5227
DEBUGNY, P.
0248, 0249
DE BUSK, F.L.
4602

DECARLI, L.M.
3929*, 5236, 5590*,
7125*, 7126*
DE CARVALHO, P.R.
4193
DE CASSAN, K.
9108
DE CASTRO, R.
1930, 1954
DE CECCO, L.
2579
DECHERD, J.
5243
DECKER, G.A.G.
3460*, 4286, 6989
DECKER, K.
2859*, 6845, 8376*
DECKER, W.J.
0960
DECKLER, D.G.
1299
DECONNICK, P.
5933
DEDDISH, M.R.
0432, 3504, 5112
DEDICHEN, J.
2118
DEDOMBAL, F.T.
1268, 1988
DEDOMINICIS, C.F.
0677
DEDUVE, C.
3824
DEELEY, T.J.
6967
DE ESESARTE GOMEZ, E.
2742
DEFANT, G.
4172
DE FELICE, M.
2115
DEFFRENNE, P.
8806
DEFIGARI, L.E.P.
1685*
DE FLORIO, L.
0215, 0322
DE FOS, H.
1171, 1235, 2081
DE FRANCHIS, R.
5604, 6850
DEFRIETAS, L.
3449*
DE GARCIA, V.C.M.
7465
DEGENSHEIN, G.
7667
DE GIACOMINI, P.
5261
DE GIER, F.A.G.H.
4301
DEGIORGI, L.S.
3315
DEGIULI, C.
3835
DEGKWITZ, E.
7933
DEGNAN, T.
2858*

DEGOLLADO, J.R.
4126
DEGOS, J.D.
2156
DE GOUVEIA, O.F.
1117, 1205, 1288,
2015, 2625, 2851
DE GRAEF, J.
5355
DE GROOT, C.J.
7529*
DE GROOTE, J.
5248, 6034, 7532*,
9157
DEGROSSI, O.
3658
DEGROSSI, O.J.
3111
DEHLINGER, P.J.
7899*
DEHNEN, W.
3183, 3971
DEHNHARDT, H.G.
6347
DE HONDT, H.A.
2419*
DEHYLE, P.
3362
DEICHER, H.
9101
DEICHMANN, W.B.
7124*
DEIMER, E.
4940
DEINEKA, I.Y.
7206, 8013
DEINHARDT, F.
3640, 7609
DEI POLI, M.
0216, 1488
DE JORGE, F.B.
2040
DE KEYZER, L.
1365
DEKHTYAR, A.L.
3535, 7257
DEKLEVA, J.
2579
DE KRUYFF, B.
2286*
DE KRUYFF, R.
8646
DE LACHICA MERE, M.
7310
DE LA CRETAZ, J.
0569
DE LA CROIX, R.
0438
DE LADONCHAMPS, M.
8919
DE LA FONTAINE, P.
8452
DE LAGAUSIE, P.
5150, 8894
DELAHUNTY, T.J.
8606*
DE LA IGLESIA, F.A.
3028*
DE LAJARTE, A.Y.
8792
DELALOYE, B.
4951
DE LAMIRANDE, G.
7946
DELAND, F.H.
1803*
DE LANDAZURI, E.O.
0751*
DE LANE, L.R.
5137*
DELANEY, D.W.
7738
DELANEY, J.
6616
DELANEY, V.B.
3579
DE LA PARRA, D.A.
3893*
DE LA PIERRE, M.
0347, 2623
DELARUE, J.
1951
DE LA TOUR, J.
1827, 2491, 3924,
5554, 6416
DE LA VAISSIERE, G.
0472
DELAVIERRE, P.
2849, 4084
DEL CORSE, A.
3556
DELCOURT, A.
3229
DE LEEUW, I.
5840
DELENA, S.A.
4521
DE LEON, V.
6432*
DELFANNE, M.L.
4739
DEL FAVERO, E.
8838
DELFORGE, M.
5402
DEL GIUDICE, M.M.
0016
DEL GUERCIO, L.R.M.
6903
DELHAY, J.
5111
DELLA CORTE, E.
4053, 3819*, 6466
DELL'ANNA, B.
4905
DELLA PORTA, P.
1665
DELLEPIANE, M.
4027
DELLER, D.J.
5071*, 5980*
DELL'OSSO, A.
1867, 1909, 3368,
5304
DELLUC, G.
4047
DELMONT, J.
6346
DEL MONTE, U.
2079
DEL MORAL, R.F.
4106
DEL NINNO, F.
5604, 6850, 8611
DELORMAS, P.
4680
DELORME, D.
5014
DE LOS RIOS, E.
3503
DELOYERS, L.
5355
DEL POLI, G.
1488
DELPORTE, J.P.
8567
DEL PRETE, S.
1418, 2501*, 8346
DEL SOLAR, V.
4498, 4646
DEL TACCA, M.
0040*
DE LUCA, D.
2260
DE LUCA, F.
2115
DE LUCA, F.G.
5934
DE LUCA, H.F.
3226*, 7990
DELUMEAU, G.
0319
DE LUTTEROTTI, A.
2831
DEL VECCHIO-BLANCO, C.
4456
DELVERT, B.
1829
DELZANT, M.O.
8984
DE MACEDO, A.G.
1413
DE MAGISTRIS, L.
2079
DEMAILLE, A.
3563
DEMAND, H.A.
1092
DE MARCHI, D.
4388
DE MARCHO, F.
4481
DEMARIA, A.
3765
DE MARTINO ROSAROLL, G
6370, 6699
DE MARZO, V.
8892
DE MATTEIS, F.
3041
DE MAULDE, F.
3521
DEMBSKI, J.C.
4922
DEMEDICI, A.
0467, 3537, 8233
DEMELLO, J.B.
2937
DE MENDONCA, H.T.P.
4192

EMENTIEV, I.V.
3631
EMETER, J.
2304
EMEULENAERE, L.
2515
EMIDAS, V.V.
8013
EMIDOVA, A.N.
0626
EMIGNEUX, H.
5336
EMLING, L.
0977, 1673*, 2201,
3130, 5998, 6561,
8109, 8990
EMMER, D.
6326
EMOLE, M.
2204, 2623
E MONTGOLFIER, R.
5106, 5296
E MORAGAS, J.M.
4326
EMUTH, W.E.
6618
E MUYLDER, C.
4074
ENBESTEN, L.
1259, 1300
E NECHAUD, B.
2060
E NEEF, J.C.
2210
ENEGRI, V.
8775
ENES, J.
2978
ENIS, P.
6861
ENISIUK, V.G.
5851, 8129
ENISON, E.K.
6894
ENK, H.
4433, 5215, 7901*,
9152*
ENKHAUS, W.
4715
ENMAN, F.R.
7701
ENNIN, H.F.
8178
ENNIS, C.
2334*, 5080
ENNIS, D.T.
7019
ENNIS, P.
8315
ENNIS, S.M.
2097
ENOVELLIS, M.
2820
ENT, C;
1111*
ENTAN, T.
8451, 8469, 8733,
9062, 9063, 9176

DEODHAR, A.D.
5569*
DE OLIVEIRA, E.
7727
DE OLIVERRA, E.
4104
DEOSTHALE, Y.G.
1760
DEPADT, G.
1917
DE PAILLERETS, F.
2857*, 9279
DEPALMA, R.G.
1575*, 7930
DE PAULA, A.
7450, 8169
DE PENA PEREZ, R.
1396
DE PHILIPPIS, C.V.
0274*
DEPIEDS, R.
3086, 7821
DE PIJPER, A.M.
7986*, 8513*
DE PINHO, A.L.
5406
DEPISCH, D.
4136
DEPOWSKI, M.
7734
DEPUYDT, W.
7217*
DERACHE, R.
3133*, 4780, 5233
DERAEDT, R.
8679
DE RAEYMAEKER, L.
8925
DERASSE, G.
0267, 5061, 5334,
5337
DERBYSHIRE, J.B.
0368, 3248
DEREN, J.J.
4250*
DEREVITSKAYA, V.V.
7768
DE REZENDE, J.M.
4428
DE RITIS, F.
4485, 7247, 7445,
7614
DERIZHANOVA, I.S.
5935, 8408
DEROCHE, B.
7325*
DEROIDE, J.P.
1235
DERONZIER, C.
1729
DE ROSA, M.
8773
DE ROSSI, G.
6755, 8757
DE ROSSI, G.M.
4562
DEROT, M.
1934, 8247

DERRICK, J.R.
5791
DERUMEZ, P.
4739
DE RYCKE, P.H.
9268
DE SA, D.J.
8437
DESAI, H.G.
0787*, 1883, 1942,
5678, 6262
DESAI, H.N.
4686
DESAINT-BLANQUAT, G.
3133*, 4780
DE SAINT-STEBAN, J.
2902
DE SANDRE, G.
7528*
DESBUQUOIS, G.
1829
DESCHAMPS, J.P.
4332, 4335
DESCHAMPS, P.
8926
DE SCHANT, F.
1436
DESCHE-LABARTHE, S.
2121
DESCHENES, J.
8592
DESCHENES, L.
5103
DE SCHOR, G.
4419
DESCHREYER, M.
0664
DE SCHUTTER, A.
3051
DESCOMBES, P.
1837
DESCOS, L.
2798, 3530, 3925,
5979
DESFOSSES, L.N.
4537
DESGREZ, P.
4854
DESHAYES, P.
0473
DESHMUKH, K.S.
0866
DESHPANDE, R.S.
0697
DE SILVA, K.
7012
DE SILVA, K.L.
5078
DESMERGES, C.
1439
DESMET, V.
0567
DESMET, V.J.
7532*
DESNEUX, J.J.
3456
DESOWITZ, R.S.
9259*

DESPEIGNES, J.
4687
DE SPIRITO, A.P.
4200
DESPLACE, A.
9062
DESPOPOULOS, A.
1641, 4762*, 4833*
DESPRUNIEE
8231
DESSEV, G.N.
0855*
DESVIGNES, P.
3408
DE TAYRAC, R.
1066
DE TOLEDO, M.R.F.
2264
DE TOLLENAERE, G.
6139
DETOMA, F.
3079
DE TORRES, E.T.R.
4086
DETTORI, V.
4150
DEUCHER, F.
6716, 7504
DEUCHER, VON F.
5381
DEUTSCH, E.
9152*
DEUTSCH, H.F.
2800*
DEVASANKARAIAH, G.
3410
DEVENYI, I.
0553, 1706*
DEVI, C.S.
1428, 3410
DEVIC, G.
6743
DE VIVO, D.C.
5463
DE VIVO, R.
4562
DEVLESAVER, P.
1881
DEVOS, E.
0408*, 1217
DEVOS, P.
4255
DE VRIES, A.
2021
DE VRIES, H.
3933*
DE VRIES, M.
1583*
DE VRIES, P.M.
1506*, 5548
DEVROEDE, G.J.
7845
DE WITT, W.E.
4577*
DE WULF, H.
7142*, 7146*
DEY, K.R.
4341
DEY-HAZRA, A.
9283
DEYHLE, P.
0800*, 2382, 4180,
8581*, 8595
DEYSINE, M.
5308
DE ZALENSKI, C.
8541
DHATT, P.S.
1442*, 5898
DHEDIN, G.
8579
DHILLON, D.S.
2666
DHMURA, G.
1111*
DHUMEAUX, D.
0845*, 3957, 4233,
4257, 5495*
DIAMOND, D.L.
6206
DIAMOND, J.M.
3864*
DIAMOND, L.
7071*
DIAZ, J.
2858*
DIAZ, R.
4419
DIAZ-FLORES, L.
0017
DIBATTISTA, C.
3213
DI CARLO, V.
0335, 0681, 1374,
1375, 1486, 4156,
4241, 4501, 4563,
4582
DICK, A.P.
4028
DICK, E.T.
7486
DICK, W.
1463, 6385
DICK, W.C.
5206
DICKEY, A.
7041
DICKIE, J.
4925
DICKMAN, S.R.
0742*
DIDERHOLM, H.
0612
DI DIO, L.J.A.
7804
DIEBOLD, J.
1951, 8159, 8200
DIEDERICHSEN, H.
2125*
DIEKMANN, L.
8284
DIENER, S.
7431
DIETER, G.
8604
DIETER, M.P.
0849*
DIETER, R., JR.
1979
DIETER, R.A.
6586
DIETHELM, A.G.
1341
DIETRICH, L.S.
2399*
DIETRICHSON, O.
6050
DIETSCH, M.R.
8776
DIETSCH, R.
5354
DIETSCHY, J.M.
0099*, 5602, 563
6374
DIETZ, F.
7849
DIETZ, J.W.
4114
DIETZ, M.W.
1822, 3490
DIETZE, F.
2347
DI FELICIANTONIO, R.
0620
DI GENOVA, L.
9188
DIGIACOMO, P.
3952*
DI GIOVANNI, V.
4314
DIGREGORIO, I.
1655, 3888*
DI IORIO, G.
4558
DIKE, S.C.
5404
DIKHTENKO, G.I.
1477
DIKIC, L.
2792
DIKOW, A.
6761*
DIKOW, A.L.
3081, 3608
DILLARD, B.M.
6915
DILLER, E.R.
3207
DILLER, W.F.
0311
DILLON, M.L.
2704
DI LORENZO, G.D.
4238
DILS, R.
8609*
DI LUZIO, N.R.
6071, 6427*, 7579
DIMAKAKOS, P.B.
2627, 4214, 5158
DI MARCO, G.
4319
DI MARIA, G.
5336, 8427
DI MARTINO, L.
3894, 3895, 4280

LIBRARY U. OF I. URBANA-CHAMPAIGN

IMATTEO, G.
0195*
IMMLING, T.
9236
IMSON, S.B.
6528
INBAR, A.
2271*, 3551*, 5988*,
6763*, 7481
INGELL, J.V.
3056
INKEL, L.
9189, 9190
I NOLA, F.
1973*
INOSO, V.P.
8090*
INSTL, K.
1330, 4136
INSTMAN, M.
2752
INTER, H.
9253
INTSMAN, M.
4891*, 5329
INU, M.
0077
IOGUARDI, N.
5604, 8611*, 9146
IORIO, A.
4691*
IOTALLEVI, O.
0396
I PASQUALE, U.
4050
IPP, B.
9281
IPPON, R.
6716, 7504
I PRISCO, G.
2308
IROCCO, P.
3779
I SALVO, A.F.
9285
ISANTO, V.
3144
ISCHLER, W.
0454
ISERTORI, M.
9144
I SIMONE, A.
4482
ITCHEK, N.T.
2066
ITKOWSKY, S.P.
6728
ITTMANN, J.
1721*
ITTRICH, H.
8291, 9126
ITTRICH, J.K.
8728
ITTRICH, M.
5011
IWOK, K.
6333
IXON, J.A.
4143
DIXON, R.L.
7897*
DJACZENKO, W.
5169*, 5176*
DJAHANGUIRI, B.
5021*, 6615*
DJAJA, V.
6924
DJETCHA, T.
9280
DJORDJEVIC, D.J.
3762
DJORDJEVIC, M.
6924
DJUKOV, V.S.
6193
DLOUHY, W.
8547
DMITRIEV, A.E.
5803
DOBBINS, W.O.
4713*, 5087, 7025*,
8508*
DOBERNECK, R.
8299
DOBIS, J.
4177
DOBOZY, A.
6839
DOBREV, YA.
1018
DOBRUNOV, K.M.
8336
DOCIMO, R.
0243
DOCKERTY, M.B.
1932
DOCY, D.B.
3585
DODDS, J.J.
2711
DODDS, W.J.
2500*, 8055*, 8079
DODERI, M.
0421, 3823, 8937,
8994
DODERO, P.
4392, 4560, 8803,
8814
DODIN, A.
4678
DOEBLIN, T.D.
4251*
DOGAN, E.B.
6979, 7544
DOGLIA, M.
1418, 2501*, 8346*
DOGRU, M.
6978
DOHADWALLA, A.N.
0918, 0929
DOHMEN, R.S.
4504*
DOHNALEK, J.
0949*, 5122*, 8784,
9040*
DOHRMANN, R.
6948
DOHRMANN, R.E.
8274
DOI, Y.
8727
DOKOV, V.K.
5589*
DOLDI, S.B.
7387*, 8892
DOLETSKY, S.Y.
0256, 8365, 8890
DOLGOPOLOVA, E.N.
2956
DOLINESCU, C.
0348
DOLL, E.
6511
DOLLE, W.
4404, 6854*, 8886
DOLLY, J.O.
1216*
DOLUISO, J.T.
7071*
DOMAGK, G.F.
4450, 4452, 6326
DOMART-OUDEA, M.C.
9039*
DOMBROWSKI, H.
4939, 5066, 6976,
7736
DOMENICONI, R.
2579, 4318, 4987
DOMINGO, E.
1610
DOMINGUEZ, A.
2959
DOMINGUEZ, F.
6918
DOMINI, R.
9055
DOMMERGUES, J.P.
4415, 5327
DOMOCOS, L.
4628
DOMSCHKE, S.
4450, 4452
DOMSCHKE, W.
4450, 4452, 6326
DONADEY, C.
0025
DONAHUE, J.D.
4708*, 8624*
DONALDSON, M.H.
1521
DONALDSON, R.M.
5648*
DONALDSON, R.M., JR.
8441
DONALDSON, W.E.
2321
DONATH, T.
2464
DONATI, G.
4236
DONDE, U.M.
6265, 8052
DONEGAN, W.L.
2730
DONIACH, D.
2091, 2817, 3542*, 8387

DONIACH, I.
3542*
DONNA, R.A.
4194
DONNER, M.W.
5761
D'ONOFRIO, M.
4027
DONOHOE, J.F.
7436*
DONOHOO, J.S.
1440*
DONOSO, S.
4646
DONOVAN, A.J.
2130*, 8142*
DONOVSKI, L.
4777
DONY, A.
0664
DOOHEN, D.J.
3426
DOOMERNIK, L.
5057
DORAZIO, R.A.
2669
DORDEVIC, N.
0628
DOREMIEUX, J.
8148
DOREOTA, M.
2283*
DORF, G.
8102
DORIA, O.M.S.
1452
DORLE, A.K.
0866
DORMOIS, G.J.
1147
DORNIER, R.
4640
DOROFEEVA, R.P.
3644
DOROFEYEVA, R.P.
1423
DOROGAN, D.A.
5975
DOROKHOVA, L.P.
7043
DORSEY, J.A.
5442*
DORSTAL, J.
3273
DORTON, H.E.
0298
DORWARD, W.J.
4884, 5396
DOS SANTOS, M.R.
3006
DOSSMAN, J.
2936
DOST, F.H.
7880*
DOST, K.
8848
DOTEVALL, G.
0790*, 1668*, 3394, 3403
DOTY, D.B.
8428
DOUGLAS, A.P.
0417, 1961*, 3437*,
3441*, 3448*, 8165*
DOUGLAS, E.W.
1250
DOUGLAS, G.
4551
DOUGLAS, H.M.
0263
DOUGLAS, M.
3219
DOUGLASS, H.O., JR.
1913, 8131*
DOUNCE, A.L.
3065
DOUROV, N.
1365
DOUST, J.Y.
1097
DOUTRE, L.P.
4171, 7735, 8015,
8751
DOUXFILS, N.
0047
DOWD, J.B.
4902
DOWELL, V.R., JR.
3733
DOWER, J.C.
4217
DOWLING, R.H.
2404*
DOWNER, H.D.
7841
DOWNING, A.
5921
DOXIADIS, T.
5397*
DOYLE, P.
0185*
DOYON, D.
4906
DRAGO, G.
0324
DRAGOMIRE, D.
0348
DRAGOMIRESCU, M.
4490
DRAGSTEDT, L.R.
8136
DRAGSTEDT, L.R., II.
1900*
DRAHOTA, Z.
2333*
DRAPANAS, T.
3752
DRASAR, B.S.
1152*
DRATMAN, M.B.
2448
DRAWERT, J.
6415
DREILING, D.A.
2785*, 6151
DREIZINA, A.M.
5807
DRENICK, E.J.
8178
DRESKIN, A.
3707*
DRESSEL, H.
0559, 4895
DRESSLER, S.
1396
DREXLER, K.
8566
DREZE, C.
0338, 0390, 0446,
2212, 2537, 5160,
9223
DRIANNO, J.C.
1238, 5148
DRIGGS, D.D.
1094
DRINKWATER, J.E.
6026
DRISCOLL, S.
7984*
DRNDARSKI, K.
3730
DROGOVOZ, S.M.
1478, 7170
DROR, Y.
4737
DROUIN, P.
2534, 5227
DROZDZ, M.
4519, 7246
DRUBE, H.C.
5369, 8940*
DRURY, R.A.B.
8151
DRUZHININ, E.A.
7288
DUARTE, F.
2102
DUBAKINA, L.N.
7711
DUBARRY, J.J.
5199, 6562
DUBERMAN, L.B.
2920
DUBEY, J.P.
3011
DUBOIS, F.
4410, 8907, 9032
DUBOIS, R.S.
3169*
DUBOIS-GAMBARELLI, D.
6051
DUBOS, R.
6497*
DUBOST, C.
4975
DUBOULOZ, F.
8848
DUBOURG, G.D.
0584
DUBOUSSET, J.
8826
DUBOVSKY, V.G.
1427, 7711
DUBOVYI, E.D.
7266, 8013

UBRASQUET, M.
2631*, 3919, 5455, 6402
UBRISAY, J.
5217, 9061, 9277
UBROVSKY, A.K.
8286
UBROVSKY, R.L.
2914
UCAS, J.
5366
UCASSOU, D.
8751
UCHARME, J.C.
9233
UCIC, S.
7380
UCIER, J.
8933
UCKLER, L.
4556
UCLERT, N.
5147, 8251
UCLOUX, M.
9266
UCLUZEAU, R.
4011, 9220
UDA, K.
7377
UDLEY, B.W.
3777, 6276
UDLEY, F.J.
8346*
UDRICK, S.J.
7326*
UELLO, T.J.
5437*
UFAULT, C.
5291
UFFANT, M.
6168
UFFAUT, M.
4306, 8467
UFFY, B.J.
5858
UFTY, J.H.
2968
UGGAN, J.M.
6661
UHAMEL, B.
4429
UHAMEL, R.C.
3999, 8548*
UHART, J.E.
3275
ULIZIBASIC, D.
0574
UMAS, J.
0316
UMAS, J.C.
0415
UMAS, P.
3850
UMITRESCU, Z.
2206
UMONT, A.E.
2143, 3656, 3725, 6904
DUMONT, M.
3174
DUNAN, S.
5675
DUNCAN, C.R.
7657
DUNCAN, D.
5184, 5456
DUNN, G.D.
4017*
DUNN, J.A.
1347*
DUNN, M.F.
1753
DUNN, M;J.
2273*
DUNN, P.M.
1228
DUNN, R.M.
2600
DUNN, S.H.
5558*
DUNN, T.
1200
DUNNICK, J.
6447*
DUNPHY, J.E.
2997
DUPAS, J.L.
9090
DUPLAY, H.
5017
DUPLISSE, B.R.
5639
DUPON, H.
0694
DUPONT, A.
0438, 8471
DUPONT, B.
2089
DUPONT, H.L.
8463
DUPONT, P.
2087
DUPONT-MAIRESSE, N.
6731*
DUPOUY, J.P.
5461
DUPRAS, M.
7946
DUPREY, J.
8249
DUPREZ, A.
4416, 4650, 5677
DUPUY, J.P.
4962, 9291
DUPUY, P.
2101
DUPUY, R.
2681, 3375, 8468
DUQUE, E.
3344
DURAN, B.
2216
DURAN, J.
0086
DURAN, M.
0680, 5324
DURAND, P.
5897
DUREAUX, J.B.
7349
DUREMIDES, G.D.
5837
DURET, P.
3375, 6706, 9264
DURET, P.H.
0386
DURET, R.
5355
DURET, R.L.
0047
DURETTE-DESSET, M.C.
5405
DURIE, B.
8239
DURIEU-TRAUTMANN, O.
0158
DURST, J.
0179*, 5092
DUSHANE, J.W.
2718
DUSONCHET, L.
2489
DUST, A.
4469
DUTERTE, P.
8895
DUTHIE, H.L.
1114*, 7392
DUTT, A.K.
2666
DUTT, R.
6524
DUTTA, G.P.
2813
DUTTA, N.K.
0918
DUTTA, S.
0767*
DUTZ, W.
2194*, 7361
DUVERNE, J.
7517, 7587
DUX, A.
4090
DVERAK, V.
0501
DVORAK, K.
2071
DVORAKOVA, H.
2642
DVORSKY, A.
0282
DWYER, W.A.
6675
DYACHINA, E.G.
7674
DYADYK, V.E.
1326
DYATLOVITSKAYA, E.V.
0092*, 8287
DYBKAER, R.
4849
DYCK, W.P.
3156

DYER, H.M.
5177*
DYER, N.H.
0398*, 4242*, 4246,
5879*, 6184
DYKSTRA, G.
4685
DYKTYNSKI, P.
4337
DYMSHITS, SH.M.
1164
DZHANSYZ, N.N.
1240
DZHAPARIDZE, M.N.
7978
DZIADEK, B.
4670
DZIUDOWA, J.
1056
DZOLJIC, M.
6495
DZURIK, R.
0888
EADE, M.N.
4307*, 4308*
EAPEN, S.
3934*
EARLE, E.
6014
EASLEY, G.W.
5070, 5113
EASTWOOD, M.A.
6493*
EATON, S.B.
0943*
EBATA, K.
7597
EBEL, J.P.
6481, 6482
EBEL, K.D.
8825
EBERHARDT, A.
5688
EBERHARDT, G.
5873
EBERS, G.
6122
EBERT, P.S.
4847
EBINE, S.
6556
EBRAHIMI, M.A.
4668
ECHEGARAY, M.M.
5967
ECHEVERRIA, C.I.
2216
ECKART, J.
1396
ECKER, R.
1826*
ECKERMANN, V.
3203
ECKERT, G.
3332
ECKERT, G.M.
2560
ECKERT, H.
3859
ECKERT, J.D.
8011*
ECKMANN, L.
6644
ECKSTEIN, J.W.
2482*
ECKSTEIN, M.
4417
ECONOMOPOULOS, P.
2060
EDDLESTON, A.L.W.F.
6766*
EDELMANN, G.
7491, 9014
EDELSON, Z.C.
5745
EDER, H.
9187
EDER, J.
0992
EDER, M.
0762*, 0910*, 5367,
6248, 8105
EDGCOMB, J.H.
2198
EDLICH, R.F.
7203
EDLUND, Y.
1580*, 9018
EDMONDS, C.J.
0760*, 7064*
EDOMAKHA, V.KH.
6041
EDSTROM, C.
3034*
EDWARDS, A.
6232
EDWARDS, A.J.
3697*, 7009
EDWARDS, D.A.W.
1848, 7295*
EDWARDS, D.L.
7420
EDWARDS, J.A.
4251*
EDWARDS, K.D.G.
8166*
EDWARDS, R.G.
5071*, 5980*
EFIMISHIN, N.S.
3654
EFIMTSEVA, A.F.
1296
EFREMOV, D.N.
7459
EFREMOVA, V.N.
7205
EFRON, G.
8938
EGAN, R.S.
0255
EGDAHL, R.H.
0724*, 6365
EGENSE, J.
6954, 7644
EGER, M.
1174
EGGER, G.
8180*, 8855
EGGLESTON, L.V.
1589, 1705*
EGLI, H.
8389
EGNER, D.
4043
EGOROV, V.I.
7047
EGOROVA, N.B.
7205
EGOROVA, V.D.
7978
EGOVILLE, J.W.
8379
EGUCHI, M.
6831*
EHLERT, C.P.
1465, 8827*
EHRENGRUBER, H.
8738
EHRLICH, E.M.
1076
EICHELTER, P.
9026
EICHEN, R.
4943
FICHHOLZ, A.
7831
EICKHOFF, K.
7812
EIDELMAN, A.
2603
EIDELMAN, S.
4254, 5890
EIGLER, F.W.
6574
EINHEBER, A.
6270
EINSEL, I.H.
5114
EISEMAN, B.
0532*, 1908, 2459,
3219, 3224
EISEN, J.
5930
EISENBAUM, S.
5976
EISENBERG, H.
6337
EISENBERG, M.M.
1645*, 3134*, 5540,58
EISENBURG, J.
5279*
EISENSTADT, M.
5222*
EK, B.
7449
EKER, P.
6340
EKHOLM, R.
1580*
EKKERS, T.J.
8037
EKLOF, O.
4920, 5134*, 6591
EKROLL, T.
7314
EL-ALLAF, G.
2252

EL BARBIERI, M.
4616
ELBERS, C.
6883, 8927
ELBERS, P.F.
8511*
ELCE, J.S.
3209
ELDER, G.H.
6025
EL-DOMEIRI, A.
3329, 8199
ELEFANT, E.
5860
ELFORD, H.L.
8636*
ELFVING, G.
1458*, 1497, 3663*,
4118, 4527*, 4548,
4549
EL GAMAL, M.
7816
ELGER, J.
7898*
EL-GOHARY, Y.
1526*
EL HASSAR, S.
8062
ELIAS, H.
2175, 3848
ELIAS, S.
4190
ELISCU, E.H.
2346
ELISEYEVA, S.V.
7207
ELIZONDO, J.
5659*
ELIZONDO, L.
4034, 4126, 4336
EL KAMMAH, B.
6966
ELKAN, E.
6970
ELKE, M.
8706*
ELKELES, A.
6620
EL-KHATIB, S.M.
6781*
ELKIN, I.I.
1162
ELKONIN, B.L.
5711
ELLENBOGEN, G.
0086, 3923
ELLENRIEDER, M.
9253
ELLIOTT, G.B.
8464, 8969
ELLIOTT, H.L.
3416*
ELLIOTT, J.P.
3735
ELLIOTT, J.P., JR.
6028
ELLIOTT, K.A.
8464, 8969
ELLIS, C.J.
4001, 4002
ELLIS, C.M.
3392*
ELLIS, F.H., JR.
0043*, 3883*, 5462,
5756
ELLIS, J.P.
1028
ELLIS, S.
0876
ELLISON, F.H.
9219
EL MEHAIRY, M.M.
1356
ELMSLIE, R.G.
2117, 6414
ELORRIAGA, A.
0493
ELOVSON, J.
5560*
ELSAS, L.J.
3439*
EL-SAWY, M.
6281
EL-SEWEDY, S.M.
2255, 4567*
EL SHERAKY, A.S.
2408*
ELSNER, B.
7453*
ELSNER, I.
4303
ELSTER, K.
3362, 5998, 6593,
8064, 9002*
EL TAMER, S.
3658
EL TARABEESHY, N.M.
1356
EL TAWIL, V.
6149
ELTZINA, N.V.
0153
ELVEBACK, L.R.
3884*
ELWI, A.M.
2419*
ELWOOD, J.C.
1766
ELWOOD, W.J.
7720
ELWYN, D.H.
7771*
EMANUELE, B.
3581
EMANUELLI, G.
4391
EMAS, S.
3387*
EMELYANOV, E.S.
1016
EMERSON, D.N.
3716, 4596, 6997,
8440, 8484
EMERY, J.L.
3802*
EMMELOT, P.
6292*, 7802
EMMERSON, J.L.
3580
EMMRICH, J.
4898
ENDAHL, G.
3906*
ENDERS, J.F.
7984*
ENDLICH, H.L.
3497
ENDO, H.
6831*
ENDO, M.
6556, 6559
ENDRESSEN, G.K.M.
3593*
ENERBACK, L.
2802*
ENEROTH, P.
0723*
ENG, T.B.
3772
ENGEL, S.
1086
ENGEL, S.L.
3232
ENGELHARDT, H.G.
5760
ENGELHART, G.
3920, 4888*, 6558,
8053
ENGELHOLM, L.
7212*, 8734, 8926
ENGELMAN, R.M.
6991, 7312
ENGLEHARDT, D.
6739
ENGLER, W.
8505*
ENGLERT, E.
0095*
ENGLERT, E., JR.
4784, 8396*, 8554*
ENGLHARDT, A.
8724
ENGLIS, M.
4423
ENGSTROM, G.W.
2945*
ENGSTROM, J.
7553
ENIGK, K.
9283
ENKER, W.E.
2677
ENNIS, J.T.
5344
ENOMOTO, H.
7624*
ENOMOTO, N.
6958
ENOMOTO, Y.
6666
ENQUIST, I.F.
1503, 4764*
ENRIGHT, L.P.
4911
ENSELBERG, K.
6218

ENTWISTLE, C.C.
2372*
ENWONWU, C.O.
7681*
EPPS, J.
3296
EPSHTEIN, I.M.
7207
EPSTEIN, E.H.
0639
EPSTEIN, H.
3725
EPSTEIN, H.Y.
1807*
EPSTEIN, S.M.
1754
EPSTEIN, S.S.
3059
ERAKLIS, A.J.
0441, 1276
ERAMISHANTSEV, A.K.
7540, 7648
ERAZIMOVA, J.
2333*
ERB, E.
5141
ERB, W.
4509, 8307
ERBEN, J.
4330*
ERBSTOESZER, M.
1735
ERCOLESSI, L.
3984
ERDMANN, W.D.
4450, 4452, 6467
ERECINSKA, M.
0730*
ERFLE, J.D.
5582*
ERGE, D.
6801
ERICHSEN, H.G.
8237
ERICKSON, B.
1389
ERICKSON, D.G.
3776
ERICSSON, B.
3301
ERIKSEN, B.
3418*
ERIKSON, U.
6527
ERIKSSON, F.
1495
ERIKSSON, H.
2335*, 3227*, 7057*
ERIKSSON, S.
3279, 7433
ERLANSON, C.
4815
ERLE, G.
9044
ERLINGER, S.
0845*, 0861, 3174,
3957, 5495*
ERMAKOV, N.T.
2914
ERMINI, M.
0937*, 1258, 1385,
6152
ERMOLOV, A.S.
5844
ERNO, K.
2636
ERNST, E.A.
3257
ERNSTER, L.
2420*
EROZAN, Y.S.
8027
ERPENBECK, R.
4093
ERSKINE, J.M.
7471
ERTAN, A.
2767
ERTURK, E.
7330, 8829*
ERWA, H.H.
1194, 2200
ERWONWU, C.O.
5561*
ESCALIER, J.
4677
ESCALIER, J.P.
4677
ESCARRA, C.B.
4107
ESCAT, J.
9008
ESCOLAN, J.
9212
ESEIMOKUMOH, H.S.
5095
ESIPENKO, B.E.
7168
ESPARZA, A.R.
6718
ESPINAR, J.
0704
ESPINASSE, P.
4874
ESPINOZA, J.
0987
ESPOSITO, G.
9204
ESPOSITO, V.M.
6514
ESSER, G.
1388, 8389
ESSING, H.G.
7632*
ESSINGER, A.
4952
ESSNER, E.
3044
ESTES, L.
0008*
ESTES, L.W.
7798*
ESTREMADOYRO ROBLES, O.
7385*
ESWAR REDDY, G.
4328*
ETAIX, J.P.
7517, 7587
ETCHEBARNE, J.C.
0387
ETEVE, J.
4233
ETHERINGTON, D.J.
7864*
ETIENNE, J.
1236
ETIENNE, J.P.
4045
ETIENNE, M.
4869
ETO, C.
1937
ETTE, M.
2857*
ETTINGER, A.
2759
EUFINGER, H.
6925
EUGSTER, A.K.
9208
EUPHRAT, E.J.
1958
EUSTACE, P.W.
1855
EUZEBY, J.
4683
EVANS, A.S.
9093*
EVANS, D.F.
7930
EVANS, D.G.
6513
EVANS, J.A.
0957
EVANS, N.
3290, 3454
EVANS, R.
7570
EVANS, R.H.
2758
EVANS, W.E.
9219
EVANS, W.H.
3039*
EVDOKIMOV, V.N.
5704
EVERED, D.F.
7056*
EVERETT, H.T.
1667*, 1901*, 126
EVERETT, W.G.
1872
EVERS, C.G.
1093
EVERS, K.
2469
EVERSE, J.
1726
EVERSOLE, S.L.
8834
EVES, G.E.
1195
EVTUSHENKO, S.V.
1369
EWEN, S.W.R.
7435

RS, H.R.
9050
NG, J.B.
1500, 3684
NS, S.
2232
ON, J.H.
7951
L, Z.
5926
RLY, R.C.
1079
KENS, E.
0597
SSELT, M.
5122*, 8784, 9040*
R, E.
3345
ER, V.
6878*
ERI, M.
9165
IAN, E.
2898
IANI, F.
9123
IANI, P.
0193*
REGOULE, M.
0299
REGUES, H.E.
4106
RIS, F.
4046
CINI, M.
8804
DAYEV, A.D.
3411
DEEV, N.P.
2524
DEEVA, S.A.
0946*
ENZA, A.
8878
GGIOLI, F.
0215, 0322, 8789,
8843
GGIONI, A.
4293
GIN, R.R.
8118
GIOLO, U.
7599*, 9044, 9117,
9133
GUER, C.
8489
HEY, K.J.
6943*, 6944*
HIM, M.S.
7947
HIM, Z.
7947
HIMI, H.D.
5439*, 7792*
HRLANDER, H.
4244, 6558, 8934
IFERMAN, I.
3804*

FAILES, D.
8161
FAILLY, C.
4740
FAIN, A.
0388
FAIN, S.N.
2738, 7464, 7494
FAIN, W.R.
1141, 3662*
FAINSINGER, M.H.
2508*
FAISS, H.J.
0234
FAIZIEV, KH.F.
1164
FAKHOURY, H.
6347
FALAIYE, J.M.
5889
FALBE-HANSEN, J.
1841
FALCAO, H.S.DEA.
1361
FALCONE, F.
4535
FALCONER, C.W.A.
2762*, 5958, 8226*,
8240, 8987*
FALCONER, M.B.
8988*
FALISE, P.
4071
FALK, G.
8131*
FALKSON, G.
1089, 5136*, 7531*
FALKSON, H.C.
1089, 5136*
FALL, D.J.
0971, 8005*
FALLANI, A.
2077
FALLON, H.J.
5588*
FALOMIR, J.M.
4087
FALOON, W.W.
2331*, 8179,
8374*
FAN, H.A.
4515, 7007
FANCIULLACCI, M.
2994
FANFERA, F.J.
1263
FANG, M.
2416*
FANGE, R.
0087
FANI, C.
2178
FANSKA, R.E.
3095*
FANTONI, P.A.
4121, 7348
FANUELE, G.
3749

FARAH, A.
1171, 1235, 1236,
1335, 2081, 8752
FARBER, E.
1754, 8317*
FARBER, N.A.
7603, 7618
FARELLO, G.
2734
FARIA, DE.J.
3539
FARIA, R.M.
1400
FARID, Z.
3702*, 8487*
FARINAS, B.
2399*
FARINET, G.
6568
FARINI, R.
7599*, 9044, 9117,
9133
FARKAS, A.
2946*
FARMER, R.G.
0400, 3715, 8221
FARNE, F.
2820
FARQUET, J.J.
1948
FARRAND, E.A.
1799
FARRAR, J.T.
2214, 5516*
FARRIAUX, J.P.
0419, 9202
FARROW, G.M.
0640, 2679
FARROW, L.J.
2527, 3290,
8349*
FARRUGGIA, F.
3452
FASEL, J.
4123, 8693, 8797
FASOLO, G.F.
5825*
FASON, P.H.
0267
FASQUELLE, R.
1927, 2229
FASSIO, M.E.
1947
FATTERPAKER, P.
3841, 3937*, 6291*,
7186
FATTOVICH, G.
5671
FAUCHIER, C.
0476
FAUDEMAY, F.
3876
FAURE, M.
6147
FAUSA, O.
2694
FAUSTO, N.
4826*

FAUVERT, R.
0845*, 2799*, 3957,
5270, 5495*, 5999
FAVA, E.
1054
FAVI, P.
1890
FAVIER, M.P.
7838
FAVOROVA, O.
1725
FAVRE, C.
4643
FAVRE, M.
0472, 8996
FAVRE-GILLY, J.
6595
FAWCETT, A.N.
7101*
FAWWAZ, R.
0763*
FAYAD, L.
6966
FAYS, J.
8473
FEAGIN, F.F.
3073
FECHNER, R.E.
4521
FEDELI, G.
0033*
FEDENKO, N.N.
2874, 6095
FEDERICO, G.
9116, 9118, 9119
FEDEROV, V.D.
0219, 5937
FEDJUSHINA, N.A.
8407
FEDKO, S.V.
3569
FEDORCHENKO, O.YA.
3087
FEDORCHUK, A.M.
3568
FEDOROVA, A.A.
7691
FEDOTOV, N.P.
6037
FEDSON, D.S.
1212*, 8928*, 9201*
FEDUROV, V.V.
0897
FEELEY, J.C.
4007, 4570*, 4577*,
6513, 6514
FEGIZ, G.
2217
FEHER, E.
2496, 4465, 7592
FEHR, A.M.
5139
FEHR, H.
9015*
FEHRINGER, A.
8566
FEIFEL, G.
5036
FEIGELSON, J.
5731
FEIGELSON, P.
6424*
FEIN, H.D.
4134*
FEINGOLD, D.S.
7798*
FEINGOLD, M.L.
0292
FEINGOLD, S.
7112*
FEISE, G.
9108
FEIZI, T.
0733*, 8387
FEJFAR, J.
1026*
FEKETE, F.
0251, 1002, 1003,
1010, 1067, 1382,
2101, 2561, 4102,
6836, 9186
FEKETE, M.
2337*
FEKETE, T.
1474
FEKL, W.
2983
FELBER, J.P.
8693
FELDMAN, J.
6249
FELDMAN, J.G.
3397
FELDMAN, S.
1634*, 3868*
FELDMANN, G.
2799*, 8650, 9039*
FELDNER, H.
6105
FELEKI, V.
9078
FELICIOLI, R.A.
4719
FELIG, P.
1719*
FELIX, H.
3407, 8203
FELIX, M.H.
5356
FELLER, D.D.
7148*
FELLER, D.R.
7941
FELLER, W.F.
5056
FELLINGHAM, S.A.
1214*
FELMAN, A.H.
4602
FELSENFELD, A.D.
2881
FELSENFELD, O.
3763, 6939*, 8447
FELSHER, B.F.
7832*
FELTKAMP, C.A.
6292*
FELTS, J.M.
0825*
FENGER, C.
8944
FENINA, E.P.
5977
FENNER, A.
6723
FENNESSY, J.J.
6536, 6734
FENTON, B.H.
6613*
FENTON, J.
0450, 9069
FENTON, J.C.B.
6026, 6184
FENTON, J.L.
2678
FENWICK, A.
0714
FENYOHAZI, L.
8537
FEO, F.
2122
FERA, S.
0086, 3923
FERAUDI, M.
8533
FERGUSON, A.
1570*, 1966
FERGUSON, C.C.
8809
FERGUSON, D.J.
4706*
FERGUSON, E.
0433
FERGUSON, F.F.
0715, 8173
FERLIN, G.
1810*
FERMIN, N.G.
1148
FERNANDEZ, R.
1529*
FERNBACH, D.J.
7485
FEROLDI, J.
4746, 5014, 7539
FERRACINI, R.
0470
FERRAND, B.
4635
FERRARESE, S.
3144
FERRARI, F.
1376
FERRARI, O.
1415*
FERRARINI, E.
4355
FERRARIS, A.
0680, 5324
FERREIR, E.A.B.
1840
FERREIRA, G.H.
1126
FERREIRA, J.A.
4539

FERREIRA, J.M.
4492
FERRERA, S.
4050
FERRERO, M.E.
1722*, 7535*
FERRERO, P.M.
5141
FERRI, F.
2895
FERRI, S.
4252, 8544
FERRIER, J.P.
7378
FERRIERA, C.S.
0176
FERRIS, A.A.
4473*, 8347*
FERRUCCI, J.T., JR.
0943*
FERSTL, A.
4656
FERSTL, M.
8399
FESTGE, A.
6633
FEUER, G.
2437, 3208, 3827,
5425*
FEX, G.
3550*, 3949*, 6502*
FEYRTER, F.
3858
FIACCAVENTO, S.
3565
FIALA, J.
6052
FIALKOWSKI, G.
0220
FIANCHINI, A.
0168
FIASCHI, E.
9117, 9133
FIASSE, R.
8925
FICARRA, B.J.
3667
FICHARDT, T.
5136*
FICHERA, G.
7387*, 8875
FICKER, H.
1813
FIDGE, N.H.
0010*
FIELD, C.D.
6508
FIELD, C.E.
0539*
FIELDING, J.F.
5877*, 5883
FIEVE, G.
4513
FIEVEZ, F.
0248
FIGARELLA, C.
8750
FIGARELLA, J.
8868
FIGUEIREDO, J.G.
2851
FIGUEROA, E.
0525, 4033, 6470
FIGUEROA, M.A.
0104
FIKE, R.
2106*
FILATOV, E.P.
3631
FILHO, A.G.DES.
1509
FILHO, C.F.
1949
FILHO, O.D.
0646
FILHO, Z.A.DES.
1361
FILIMONOV, G.P.
1312, 5729
FILIN, V.I.
5804, 7298, 8057
FILION, R.D.L.
7078*
FILIP, J.
2828
FILIPE, M.I.
5946*
FILIPIAK, B.
3622, 4444*
FILIPOVIC, B.
5643
FILIPPAZZO, G.
9138, 9141
FILIPPI, M.
2722
FILKINS, J.P.
0844*, 8629*
FILLAT, M.
3524
FILLER, R.M.
0480, 2836, 7220*
FILLY, R.A.
7216*
FILOGAMO, G.
3833, 5620*
FILOSA, E.
3636, 7445
FILUS, A.M.
8610*
FINAGIN, L.K.
5595
FINBERG, L.
2891*
FINBY, N.
2529
FINCATO, M.
5033, 7254
FINCH, C.A.
7842
FINCH, C.E.
0832*
FINCK, W.
0761*
FINCKH, E.S.
0366, 6607*
FINDLAYSON, N.D.C.
3336, 3363
FINEAN, J.B.
8502*
FINHOLT, P.
0806
FINIK, V.I.
8124
FINK, G.
3054, 3745
FINK, W.J.
8084
FINKELSTEIN, J.D.
6484
FINKELSTEIN, R.A.
4004, 6157*, 6175
FINLAYSON, N.D.C.
4347*, 5075*
FINOCCHIO, F.
0526
FINTELMANN, V.
4062, 6910
FINZI, C.
3981
FIOL, C.M.
2960
FIORDIGIGLIO, G.
9037
FIORE, E.
8878
FIRFER, R.
5117
FIRMAT, J.
7657
FIROOZNIA, H.
1807*
FIROR, H.V.
8213
FIRQUET, M.P.
6418
FISCHER, H.D.
5628*
FISCHER, J.A.
5892
FISCHER, L.
4333, 4407
FISCHER, M.
5290
FISCHER, R.
0234, 8782, 9053
FISCHERMANN, K.
1020*
FISH, J.C.
5137*
FISHBEIN, W.N.
2312
FISHER, A.A.
0354, 2641
FISHER, B.
1969*, 8281
FISHER, D.E.
6220
FISHER, E.R.
1969*, 8281
FISHER, J.H.
7292
FISHER, J.R.
1573*
FISHER, R.J.
5452

FISHER, R.M.
3768*
FISHER, W.J.
6173
FISHLOCK, J.D.
0494
FISHLOCK, D.J.
4795*
FISHMAN, J.
6130
FISHMAN, P.H.
2349
FISHMAN, W.H.
0167, 7923
FISSORE, A.
0245
FISZLEJDER, L.
1821
FITCHETT, C.W.
1482, 8417
FITTS, W.T., JR.
7326*
FITZGERALD, J.F.
6245
FITZGERALD, P.J.
0748*, 0749*, 2365,
4701*, 5553*
FITZNER, A.B.
5593
FITZSIMONS, J.T.R.
2283*
FIUME, L.
2305, 3180
FIUZAT, J.
0985
FIVOLI, F.
1846, 1944, 3396,
3431
FIXA, B.
2952
FIZZOLATO, G.P.
0502
FLABEAU, F.
3371
FLAKS, B.
8639*
FLAMMIA, M.
0669
FLATMARK, A.
5283*, 8276
FLEISCHER, B.
3943*
FLEISCHER, J.
0645
FLEISCHER, S.
0121, 3943*
FLEISCHLI, D.J.
0943*, 0958
FLEISHER, D.R.
5511*
FLESHLER, B.
5489*
FLETCHER, J.
1293*
FLETCHER, J.R.
5687
FLETCHER, R.
7929
FLETCHER, W.S.
1997
FLEURETTE, J.
6166
FLICOTEAUX, M.C.
2044
FLIEDNER, T.M.
7958
FLOCH, M.
5931
FLOCH, M.H.
0291, 5380, 6930*,
6932*, 6941*
FLOCK, E.V.
0802*
FLOREA, C.
7659
FLORENDO, N.T.
2281*
FLORES, H.
6934*
FLORES, N.
1897
FLORES, P.A.
8067
FLORES, R.G.
2985
FLORESCU, R.
3381
FLORIN, M.
0267
FLORITA, C.
3589
FLORMAN, A.L.
2858*
FLOWERS, R.S.
5772
FLUTE, P.T.
3594*
FOA, P.P.
4850
FOCK, G.
1226
FODOR, G.P.
8354
FODOR, I.
4345*
FODOR, O.
4497*, 8020
FODOR, T.
6249
FOERSTER, W.
6369
FOG, J.
6770*
FOGAR, R.
5825*
FOGEL, M.
2614
FOKICHEVA, N.KH.
0354
FOKINA, A.A.
0175
FOLDI, E.
2946*
FOLEY, W.J.
3349
FOLI, A.K.
1350*
FOLIOT, A.
8679
FOLIYANTS, A.V.
7695
FOLK, J.E.
2300
FOLKARD, J.
0915
FOLKMAN, J.
7984*
FOLLETT, D.H.
2512*
FOLLEY, J.H.
5948
FOMENKO, L.I.
3533
FOMIN, L.A.
7511
FOMIN, P.D.
7318
FOMINA, L.S.
7102
FOMON, J.
7635
FOMON, J.J.
1005, 1359
FONCIN, J.F.
5217
FONDIMARE, A.
6861, 8876
FONE, D.J.
2839
FONKALSRUD, E.W.
0029*, 2271*, 2366*,
3551*, 5988*, 6763*,
7481
FONSECA, L.C.
1452
FONSECA, M.DEO.
1288, 2015, 2625,
2851
FONSECA, M.O.
1117
FONT, R.G.
1878
FONTAINE, G.
0419, 9202
FONTAINE, J.L.
4869
FONTAN, J.
2842
FONTANA, G.
0972, 3108
FONTANA, V.J.
5253*
FONTENELLE, E.
0388
FORABOSCO, A.
3984, 3985, 3986,
3987, 3988
FORBES, E.B.
0110
FORBES, G.B.
1202
FORCAIN, M.
9263
FORD, E.J.H.
1595

ORD, F.
3638
ORD, K.T., III
5490*
ORDTRAN, J.S.
3094*, 3100*, 6612*
ORELL, M.M.
0799*, 5963, 7880*
OREMNY, Z.
0334
OREST, M.
5346, 9075
ORGACS, P.
4013, 9280
ORGET, A.
6316
ORMAL, S.B.
6247, 8463
ORMICA, E.
9064
ORMICA, U.
3873
ORNAZZARI, L.
0676
ORNELLS, E.
3501
ORNUSEK, A.H.
5915
ORREST, A.P.M.
7872
ORRESTER, A.T.T.
6866
ORRI, E.
0693
ORSANDER, O.A.
0838*, 8660
ORSGREN, L.
1960*, 2164*
ORSHAN, J.
0411*
ORSSMAN, W.G.
0740*
ORSTER, M.
0854*
ORSTNER, G.G.
8686*
ORSYTHE, W.I.
2721
ORTHERINGHAM, W.T.
0323
ORTIER-BEAULIEU, M.
6808
ORTIN, R.
2624
ORTMANN, D.J.
0280
ORTNER, J.G.
0432, 5985*, 7569,
8303
ORTUN, H.
8237
OSSA, T.
3834
OSSATI, G.C.
1488
OSSATI, P.
8250
OSTER, J.H.
3582, 8300
FOSTER, J.W.
5361, 5362, 5363
FOSTER, L.B.
2281*
FOSTER, S.V.
2838
FOTHERBY, K.
6460
FOTHERINGHAM, W.T.
0679
FOTI, C;E.
3483
FOTTRELL, P.F.
1216*
FOUCHE, R.
2513*
FOUDARD, C.
8996
FOUET, P.
1234, 6885
FOUNTAIN, J.A.
7041
FOURATI, M.
4934
FOURLINNIE, J.C.
8250
FOURNAT, F.
4333
FOURNET, J.P.
3523
FOURNIAL, J.F.
1934
FOURNIE, A.
3521
FOURNIER, P.
1642, 1832, 5887*
FOUT, L;
0014*
FOUTS, J.R.
3046, 3072, 3078,
5577*, 5581*, 6420*
FOWINKLE, E.W.
2108*
FOWLER, J.S.L.
8491
FOX, H.
7422, 8145
FOX, J.A.
1817, 7276
FOX, P.F.
2929
FOX, R.A.
6125, 6778*, 8346*
FOX, S.
7078*
FOX, T.A., JR.
4141
FOY, M.
2528
FRAGA, F.
8186
FRAISSE, H.
7517, 7587, 7745
FRANCE, N.E.
0509
FRANCESCHI, C.
3981
FRANCETTI, G.
0456
FRANCHE, O.
2797
FRANCHI, G.
2994
FRANCI, J.M.
4630
FRANCILLON, J.
0449, 4407
FRANCINI, R.
1891
FRANCIOSI, A.
8749
FRANCO, A.
0622
FRANCO, D.
4623
FRANCO, M.
0577
FRANCO, P.E.
1492
FRANCO-VASQUEZ, R.
7310
FRANCZAK, T.
0631
FRANK, H.
2953, 8414
FRANK, O.
7112*
FRANK, P.
8258, 9035
FRANKE, H.
7898*
FRANKEN, E.A., JR.
1993
FRANKEN, F.H.
0590, 4496, 8673,
8724
FRANKFURT, L.A.
7234
FRANKLIN, D.
6499*
FRANKLIN, L.
2399*
FRANKLIN, R.
7475
FRANKLIN, R.H.
3376
FRANKS, L.M.
1594
FRANSEN, G.
1412
FRANSSEN, G.
7664
FRASER, D.
3420*
FRASER, R.E.
4550
FRATANTONI, J.C.
6211
FRATER, R.W.M.
2510*
FRAUMENI, J.F., JR.
0543
FRAZER, M.J.L.
2930
FRAZIER, A.B.
1825*, 3315
FREANEY, R.
1505*, 7436*

FREANT, L.J.
6987
FRECH, R.S.
1926*
FRED, H.L.
1450
FREDA, C.E.
4724
FREDERICK, P.R.
3277
FREDERICKSON, D.S.
5411*
FREDERIKSEN, T.
4140
FREEBORN, R.K.
1414*
FREEDLAND, R.A.
0725*
FREEDMAN, S.O.
1219*
FREEMAN, J.
0983
FREEMAN, K.B.
7147*
FREEMAN, L.M.
2510*, 3263*
FREESE, M.
8636*
FREGOLA, E.
4150
FREI, J.
8631*
FREID, A.
7164
FREIDMANN, G.E.
2818
FREIMANIS, A.K.
7216*
FREIMUTH, E.J.
2066
FREIRE, E.C.DAS.
5305
FREJAVILLE, J.P.
1409, 5232
FRENCH, A.B.
1088
FRENCH, E.B.
8242
FRENCH, S.W.
5221*
FRENCH, W.E.
6787, 7359, 7598
FRENKEL, J.K.
3011
FRERE, A.G.
2535
FRERE-VAN HAVERBEKE, A.M.
2535
FRESTON, J.W.
1457*, 1738
FREUD, M.
8380
FREXINOS, J.
0271*, 2531, 4306,
5195
FREY, C.F.
3285
FREY, P.E.
0579
FREYCHET, P.
1934
FREYER, R.
8702
FREYRIA, J.
8895
FREYTES, M.A.
0962, 1360, 4152
FREZZA, M.
7528*
FRIC, P.
8931
FRICK, G.
5173*
FRIDLYAND, I.B.
7594
FRIDMAN, E.G.
0953
FRIDRICH, R.
3920, 4888*
FRIEBE, U.
8604
FRIEDEL, R.
4012
FRIEDENBERG, R.M.
6963
FRIEDLAENDER, E.
6712
FRIEDLAND, G.W.
1854, 4968
FRIEDMAN, A.B.
3466*
FRIEDMAN, E.
4926
FRIEDMAN, H.B.
2504*
FRIEDMAN, M.
0357*
FRIEDMAN, M.A.
8626*
FRIEDMANN, C.A.
2317, 2477, 3769*
FRIEDMANN, N.
7951
FRIESEN, J.E.
6217
FRIGERIO, G.
7749, 9127
FRIGO, G.M.
0040*, 2477, 5506*,
5508*
FRIK, W.
7363
FRILEUX, C.
0236
FRIMAN, A.
1899
FRIMMER, M.
1743, 7075
FRINDEL, E.
4360*
FRINTU, V.
4044
FRIPP, P.J.
0716
FRISCH, E.
6127
FRITSCH, H.
3795*
FRITZ, H.
7880*
FRITZ, I.B.
3206, 3938*
FRITZLAR, G.
8886
FRIZZELL, R.A.
8550*
FRIZZIERO, L.
3911
FRODL, F.K.O.
5716
FROGGATT, P.
2930, 3330
FROHLICH, J.
8509*
FROLAND, A.
0413
FROLKIS, A.V.
7228
FROMANTIN, M.
5269, 8362
FROMM, D.
7862*
FROMM, G.A.
3111
FROMM, S.
8194
FROMMER, U.
7886*, 7921*
FROMMHOLD, W.
0661, 8725
FRONZAGLIA, M.
1126
FROSSARD, C.
0193*
FROSSARD, J.
0193*
FROST, A.
3696*
FROST, J.G.
0228
FROT-COUTAZ, J.
4742
FROTTIER, J.
2230
FROTZ, H.
0762*, 8594
FRUIT, J.
4907
FRUMUSAN, P.
1884
FRUNDER, H.
0818*, 0819*
FRUTON, J.S.
7175
FRY, R.J.M.
3807*, 4396, 4700
FRYKMAN, H.M.
0481
FU, W.R.
1080
FUCHS, K.
4095, 4166, 6162
FUCHS, T.
5212
FUCHS, W.A.
9164

FUCIK, M.
8593
FUJII, K.
0052, 3059
FUJII, M.
3297
FUJII, S.
3846
FUJII, Y.
0156
FUJIKAKE, M.
8932
FUJIMORI, I.
6982
FUJIMOTO, K.
0727*
FUJIMURA, S.
4133*, 6610*, 8088*
FUJIOKA, M.
2289*
FUJITA, T.
4749, 6284*, 6294*,
6553
FUKAI, Y.
6666
FUKAMACHI, S.
7147*
FUKAYA, K.
2008
FUKAZAWA, T.
8618*
FUKUDA, H.
4127*
FUKUDA, M.
0308
FUKUDA, T.
3643*
FUKUI, H.
7054*
FUKUI, S.
2606, 2611
FUKUI, T.
7054*
FUKUNISHI, K.
2294
FUKUSHIMA, T.
5875
FUKUWARA, T.
5637
FULLER, G.C.
3217, 8323*
FULLER, R.W.
3207
FULLHAAS, J.
7823, 7983*
FULLMER, C.D.
5769
FULTON, R.L.
2980
FUMAGALLI, L.
8677
FUNADA, M.
4979, 6592
FUNATSU, I.
2326*
FUNDING, J.
6956
FUNG, C.H.K.
1974*
FUNG, W.P.
5157, 5891
FUNK, G.
6886
FUNK, L.K.
4695*, 4731
FUNOVIC, J.
8431
FURMAN, R.H.
0836*, 0837*, 8293
FURMAN, V.N.
8787
FURNEMONT, E.
0475
FURNESS, J.B.
0774*, 3811*
FURSTENBERG, H.S.
1037, 5339, 6639
FURTUNESCU, B.
5375
FURUKAWA, H.
4049, 8711*
FURUKE, M.
6637
FURUNO, I.
4371*
FURUYA, Y.
6600
FUSCO, A.
9005
FUZAILOV, Y.M.
7409, 7686
GAAZ, J.M.
4351, 6467
GABASIO, S.
3755
GABELLA, G.
4696*, 7786*
GABLER, H.
5784
GABLER, W.
6344
GABRIELE, R.
1591, 6920
GABRIELLI, F.
7966
GABRYELEWICZ, A.
2789, 2791
GABRYS, A.
1473
GABRYS, B.
2395, 7861*
GABUZDA, G.J.
5299, 6123
GACHECHILADZE, T.V.
0256
GADALETA, M.N.
7939
GADRAT, J.
4376
GADZHIEV, A.S.
1344
GADZHIEV, S.G.
7769
GADZHIEVA, Z.M.
7979
GAEDE, K.
7799*
GAETANI, G.
0127
GAGLIARDI, M.
8461
GAGLIO, M.
2333
GAGNE, H.T.
1751
GAGNON, D.J.
5509*
GAGNON, D.
5293
GAIFMAN, M.
4261
GAIJAARD, H.
4693*
GAILLARD, D.
3133*, 5233
GAILLARD, J.
8305
GAITONDE, D.P.
1531*
GAJA, G.
1722*, 7535*
GAJEPAL, S.
4904
GAJDOS, A.
8628*
GAJDOS-TOROK, M.
8628*
GAJEWSKI, H.
0024
GAJONE, F.
7535*
GAJWANI, P.M.
2258
GALAMBOS, J.T.
8375*
GALAND, P.
6731*
GALANI, M.
6662
GALANTE, M.
2398*
GALANTI, P.
4610, 6550*,
7614
GALARD-PARIS, J.M.
2728
GALASSI, G.
3926, 3927, 3928,
4108
GALASSI, G.P.
2783
GALASSO, U.
0243
GALBADON, M.
1748
GALBUSSERA, M.
0467
GALE, S.
1318
GALECKA, M.
2467
GALEEV, R.Z.
6009
GALENT, N.
6340

GALEONE, M.
0346, 8315, 7387*,
8875, 9083
GALEOTTI, T.
1774
GALESANU, M.P.
2797
GALETSKAYA, T.M.
2640
GALFI, I.
2337*
GALIAN, A.
5031, 5105
GALIBERT, A.M.
9086
GALINDO, F.
1490
GALINIER, L.
8472
GALIZZI, A.
1777
GALL, F.
6950
GALLAGER, H.S.
7477
GALLAGHER, T.F.
6130
GALLARDO, C.S.
0680
GALLESIO, A.
0705
GALLI, O.A.M.R.
1685*
GALLI, O.R.
0089
GALLI, R.
4236
GALLI, V.
3213
GALLIN, J.I.
0618
GALLINA, M.F.
4947
GALLINA, S.
8811
GALLIZIA, G.
1232
GALLOT, D.
9092
GALLOWAY, J.P.
0545
GALLOWAY, R.W.
7841
GALLWITZ, D.
7051
GALMARINI, O.V.
2518
GALPER, F.
1117, 1288, 2015,
2625, 2951
GALPERIN, E.I.
6011, 6142, 7557
GALVAN, E.S.
2009
GALVAO, W.C.
0614
GALVIN, C.
2224
GALVIYA, J.R.
7470
GALY, J.C.
5813
GAMA, A.H.
0454
GAMBARDELLA, P.
0567
GAMBARELLA, R.
0437
GAMBARI, P.F.
9344
GAMBASSI, G.
0033*
GAMBURG, D.
2773
GAMES, R.
1416*
GAMO, H.
4720
GAMSBURG, D.
2935
GANAND, I.P.
4252
GANC, A.I.
3530, 7565
GANCEV, G.
1051
GANCEVICI, G.
4775*
GANCHROW, M.I.
3491
GANDER, H.
8730*
GANDHI, R.C.
0907*, 4327*, 5367
GANDINI, S.
8804
GANDOLFI, L.
3911
GANDUL PEREZ, J.
4420
GANE, R.
4196
GANESHANANDAN, S.S.
2475
GANEVAL, D.
9163
GANG, H.
7125*, 7127*
GANG, H.I.
4928, 9037
GANGAROSA, F.J.
4577*, 8463
GANGI, A.
2039*, 2855
GANGOLLI, S.D.
1504*, 1614, 2445
GANGULI, M.C.
3061
GANGULY, H.
2680
GANGULY, J.
6092*
GANICHKIN, A.M.
5702
GANIYEVA, M.
7713
GANS, H.
1386
GANZALEZ-LICEA, A.
7775*
GARANIUK, O.N.
7379
GAPRINDASHVILI, D.N.
0956
GARABEDIAN, M.A.
3512
GARANCIS, J.C.
5986*
GARASSINI, M.
0533*
GARATTINI, S.
7190
GARBAG, M.
6403
GARBAGNA, F.
2736
GARBARETS, M.A.
0872
GARBARSCH, CH.
1582*
GARBAY, M.
8019
GARBER, A.J.
5572*
GARBIN, W.
0086, 3023
GARBINI, G.C.
4025
GARBUTT, J.T.
8896*
GARCEAU, A.J.
1441*
GARCIA, B.
1529*
GARCIA, S.
1954
GARCIA-CONDE BRU, F.J
4089
GARCIA DE SALGADO, V.
4659*, 5403
GARCIA-LILIS, C.
5587*
GARCIA-ROMERO, H.
6835*
GARCIA ROMERO, O.M.
0705
GARCIN, PH.
2848
GARDE, J.
6743
GARDELL, C.
3809*
GARDINER, G.A.
0947*
GARDIOL, D.
2940
GARDNER, B.
8395*
GARDNER, R.C.
2763*
GARDNER, R.J.
6210
GARIEPY, G.
1065

GARINI, G.C.
0024
GARIQUE, J.
0415
GARNEAU, R.
5103, 5293
GARNER, A.
1218*
GARNER, C.W.
4817
GARNER, R.C.
0140
GARNIER, H.
1379, 3979
GARNIER, J.
8413, 9765
GARNJOBST, W.
8188
GARRISON, C.D.
2144
GARRISON, M.M.
1691
GARTI, I.
4891*
GASBARRINI, G.
8771, 8843
GASCARD, E.
8472
GASTALDI, F.
2140
GASTRIN, U.
1226, 1252, 4202
GATEAU, P.
8920
GATHAITAN, Z.
0090*, 0882
GATSOU, P.
4882*
GATTI, F.
8430
GATTI, P.
3402*
GAUCHER, P.
2534, 2936
GAUCHET, A.
4330
GAUDICHE, O.
8826
GAUDRAY, A.
5260
GAULL, G.
5420*
GAULT, A.
3264*
GAUNT, I.F.
1504*
GAUSSEN, L.
3721
GAUTAM, U.P.
2072, 8080
GAUTAMA, J.W.
3480
GAUTHIER, J.
5106
GAUTIER, A.
2940
GAUTIER, M.
5190, 9038*
GAUTIER-BENOIT, C.
0267, 8288, 9227
GAUX, J.C.
8940
GAVA, L.
4630, 8838
GAVELLI, G.P.
3310
GAVRIELE, O.F.
1006
GAVRILA, I.
0393, 2873
GAVRILIU, D.
7650
GAVRYUSHOV, V.V.
0256
GAY, W.M.B.
2134*
GAYET, C.
6524
GAYLOR, J.L.
6625, 8660, 8654
GAYREL, P.
0415
GAYTE, M.J.
2256
GAZAIX, M.
8072
GAZETOV, B.N.
7472
GAZZANIGA, A.B.
7480
GEALL, M.G.
1662, 3704*, 3705*
GEAR, R.W.L.
1024*
GEBAUER, A.
4060
GEBHARD, F.L.
3096*
GEDDES, E.W.
0548, 7530*, 7531*
GEDEON, E.M.
0687
GEELER, E.F.
7829*, 6227*
GEERN, N.F.
7205
GEFFROY, Y.
0473, 4243, 6861
GEFROY, M.
4741
GEHRMANN, C.
6663, 8927
GEIGER, J.P.
3324
GEIGLE, C.F.
2702
GEINDRE, M.
6681
GEISEL, A.
5571
GEISEL, T.
0789*
GEISER, C.F.
7561
GEISLER, P.
9240
GEISSLER, H.
8769
GEISTHOVEL, W.
6304
GELAIN, J.
6743
GELB, A.
8271*
GELB, A.M.
1858*, 2041
GELBAND, H.
4266*
GELFAND, M.
2167, 5931, 9286
GELFAND, M.D.
1083, 6737, 8730
GELFAND, M.L.
3589
GELFANT, S.
2479
GELLER, L.I.
1158, 5852, 6117,
7410
GELPI, A.P.
2105*
GELZAYD, E.A.
7499*
GEMMELL, M.A.
6273, 6279
GEMSENJAGER, F.
8943, 8965
GENANT, H.K.
2030
GENEREUX, G.P.
5319
GENES, S.G.
1047
GENNADIEVA, T.Y.
7691, 7730
GENON-CATHALOT, M.
1335
GENOV, D.
2163*
GENOVA, M.
7457
GENOVA, R.
3213
GENTILE, J.M.
0119, 7116*
GENTILE-RAMOS, I.
6566
GENTILINI, P.
0530, 0531*, 0594,
2832, 3670
GENTIN, G.
4647
GENTIT, F.
2142, 5294
GENTON, N.
6640
GENYK, S.N.
2661
GEOFFROY, H.
6242, 7325*
GEOKAS, M.C.
5970
GEORGE, C.
6784

GEORGE, P.K. 0807*, 4327*, 5360
GEORGESCU, A. 6872
GEORGESCU, G. 5630
GEORGESCU, I. 4453
GEORGI, M. 8707*
GEORGI, T. 8785
GEORGIEV, D. 7840
GEORGIEVA, R. 1539, 8528
GERALD, P. 2055
GERALD, M. 7941
GERAMI, S. 5079, 5113, 8074
GERARD, A. 0144, 0580, 0592, 8093
GERARDI, R. 8680
GERASIMETS, M.T. 1103
GERASIMOV, V.K. 1302
GERATZ, J.D. 2379
GERBAL, A. 3652
GERBAL, P. 1927
GERBASI, M. 4393
GERBER, G.B. 7936, 7988
GERBITZ, K. 0983
GERBITZOFF, M.A. 5589*
GERGUSON, A. 7034*
GERHARD, H. 8325*
GERHARDT, [illegible] 4417
GERIN, J.L. 2868*
GERLACH, K. 8921*
GERLAIN, A. 4619, 7412
GERMANIER, R. 8422*
GERMANYUK, YA.I. 0898
GERMELA, C. 8922
GERO, A. 3126, 3131
GEROLAMI, A. 3531, 5314
GEROULANOS, S. 2051
GERRARD, C.A. 3899
GERRON, G.G. 8375*
GERSCHENSON, L.E. 7795*
GERSHON, F. 7069*
GERSTLEY, B.J.S. 7622
GERTEL, C. 3780
GESHELIN, S.A. 3536
GESTIN, Y. 1395
GEUZE, J.J. 7793*
GEYER, G. 5481*, 8517, 8521
GHADIALLY, F.N. 6286*
GHADIRIAN, E. 9262
GHAI, O.P. 1912
GHALDOUR-MNAYMNEH, L. 5235
GHALEB, M.H. 6281
GHAVALI, A. 0486
GHEO, C. 2087
GHEORGHIU, T. 0762*, 8105, 8594
GHERARDI, G.J. 7554
GHERASIM, G. 4705*
GHIBAUDI, D. 5896
GHIRARDI, P. 7634*
GHIRLANDA, G. 0033*
GHITA, N. 4199
GHITESCU, T. 2247
GHITTINO, P. 0146
GHODA, A. 4006
GHOSE, M.K. 8977
GHOSE, S.M. 3633
GHOSH, B. 4146, 8899
GHOSH, B.B. 2610
GHOSH, D.K. 8146
GHOSH, N.K. 2291
GHOSSEIN, N.A. 0928
GHRAF, R. 3975
GIACOBI, R. 5017
GIACOMONI, M. 2750
GIACOMONI, M.A. 0287
GIALETTI, L. 6183
GIAMPAGLIA, F. 4675
GIANASI, G.C. 4208
GIANETTO, R. 7032*
GIANFRANCESCHI, G. 2107*
GIANI, E. 1923, 2630
GIANNOTTI, P. 9006, 9027
GIANTURCO, F. 4119, 4120
GIAO, N.B. 0152
GIARELLI, L. 4321
GIBALDI, M. 1634*, 2328*, 3868*
GIBBS, D.F. 7509
GIBEL, W. 5226
GIBELLI, C. 0346
GIBSON, M.J. 8036
GIELEN, J. 4853
GIEN, I. 0371
GIERMANSKI, A. 1471
GIERSBERG, O. 3720, 6824
GIERUP, J. 5134*, 7432
GIESEN, J. 4698*
GIESSAUF, W. 6105
GIETKA, J. 4422
GIGGLBERGER, H. 4349
GIGON, P.L. 1717*
GILBERT, D. 2445
GILBERT, E. 4030
GILBERT, I.G.F. 6354*
GILBOA, Y. 1934
GILDER, H. 6432*

LIBRARY U. OF I. URBANA-CHAMPAIGN

LES, G.
1938, 2068
LES, G.P.
1613
LES, J.P.
5692
ILEVICH, Y.S.
7316
ILL, M.
6961, 8239
ILLELAND, M.J.
6436*, 7140*
ILLES, H.M.
0717
ILLES-BAILLIEN, M.
5476*, 5488*, 5500,
6359
ILLESPIE, W.A.
3605
ILLESPIE, W.J.
1352*
ILLET, B.
9054
ILLET, H.
7654*
ILLET, M.
2096, 5007, 5614*,
8148, 8906, 8914,
9028
ILLETT, D.J.
2600
ILLETTE, E.L.
7044
ILLETTE, J.R.
0060, 4041*, 7918*,
7925
GILLI, G.
4392, 4560
GILLIES, M.
5124
GILLMAN, J.C.
2173
GILLOT, F.
9130
GILLQUIST, J.
3695*
GILLY, R.
3524
GILMOUR, D.G.
4735
GILMOUR, J.E.M.
8274*
GILOT, L.
4351
GILVER, R.L.
0490
GIMELLI, F.
6202
GIMENEZ, M.L.
7090*
GIMENEZ, R.E.
1585
GINDZIENSKI, A.
4187*
GINEVRINO, P.
6921
GINGRICH, T.F.
3188
GINOCCHI, G.
2995
GINSBERG, A.L.
8397*
GINZBURG, S.A.
5727
GIOANNINI, P.
6107
GIOFFRE, L.
2217
GIORGI, G.
0036
GIRALDI, L.
5051
GIRARD, M.
4204, 5123, 5354,
8457, 8874
GIRARD, M.M.
9173
GIRARDIN, R.
4334
GIRAUD, A.
7517
GIRAUD, J.
3407
GIRDANY, B.R.
8192
GIRDWOOD, R.H.
3363
GIRGIS, N.I.
1555
GIRI, S.N.
2452
GIRLIA, V.I.
8410
GIROULLE, H.
9090
GIROUX, J.J.
8675
GIRTANNER, R.F.
8934
GISSELBRECHT, H.
8735, 8956
GITIN, E.L.
1601
GITLIN, N.
6526, 9158
GITNICK, G.L.
3626*
GITZELMANN, R.
1785*
GIUFFRIDA, G.
3765
GIULI, R.
1002, 1010, 1067,
1334, 1382, 1834,
1836, 1837, 1955,
2101, 3657, 6754
GIUMARRA, G.
4050
GIUSTI, G.
4485, 4610, 6850*,
7249, 7614
GIVARC'H, M.
5200
GIVEN, F.T., JR.
4859
GIVEN, K.S.
0655
GIVLER, R.L.
1833
GIZHKO, A.V.
0398
GIZYCKA, I.
0332
GJERTSEN, K.
1857*
GJESSING, L.R.
4360*
GJONE, E.
3447*, 5167*, 5301*
GLADER, B.E.
7332*
GLAGOV, S.
3043
GLANTS, R.M.
7407
GLASS, G.B.J.
2336*
GLASS, H.I.
7082
GLAUMANN, H.
7782*
GLEASON, M.N.
4880, 7249
GLEESON, J.A.
5689
GLEICHMANN, F.
9101
GLENDAY, A.G.
1625*
GLENDE, E.A., JR.
7929*
GLENN, F.
1456*, 1459*, 2165,
5317
GLENN, J.S.
5465, 6323
GLESER, G.
5661*
GLEW, D.
6694*
GLICK, D.M.
7811
GLICK, T.H.
2066
GLICK, Z.
7076
GLIEDMAN, M.L.
5032, 6711*, 7573,
7638, 8244, 9416
GLIGORE, V.
1479
GLINDERG, F.
4419
GLIESMANN, M.H.
5562*
GLISIC, L.
2522, 2792
GLOGNER, P.
3976, 7932
GLOGOWSKI, M.
1165
GLOOR, M.
1659
GLOTZER, D.J.
2763*

GLOVER, E.L.
3543*, 5277*
GLUECK, H.I.
5661*
GLUKHOVETS, B.I.
5972
GLYNN, T.M.
3106*
GMUNDER, U.
8739
GNATYSHAK, A.I.
2589
GNONI, G.V.
3930*
GNUDI, A.
9007
GO, V.L.W.
3266*, 5893, 6409*
GOASGUEN, J.
1439, 4642, 4643,
5340
GOCKE, D.J.
0611*
GODFREY, R.E.
0769*
GODFREY, R.C.
7064*
GODOUIN, B.
4617
GOEBELL, H.
1606, 5278*, 6062*,
6936*, 6974, 7736,
8602, 8633*, 8886,
9113
GOEDDE, H.
7812
GOETZ, F.C.
6740
GOETZ, H.P.
8037
GOETZE, T.
8601
GOFFI, F.S.
1840, 7764
GOFFMAN, W.
3775
GOFFRINI, P.
4421, 9007
GOGGEL, K.H.
5262
GOGOLASHVILY, G.D.
8056
GOH, H.S.
3753
GOHARA, M.
6786, 7596
GOHD, R.S.
6176
GOIFFON, B.
8983
GOINARD, P.
5401
GOKIM, G.C., JR.
6690
GOLD, A.H.
2284*, 2810
GOLD, D.
1115*
GOLD, P.
1219*, 6694*, 7456*
GOLDBERG, A.
5563*
GOLDBERG, B.B.
5696
GOLDBERG, D.
7438*
GOLDBERG, D.M.
2809*, 7623
GOLDBERG, H.I.
2500*, 8055*, 8079
GOLDBERG, L.
2445, 3952*
GOLDBERG, L.S.
0057*, 3338*
GOLDBERG, M.I.
7175
GOLDBERG, S.M.
0481
GOLDBLATT, P.J.
7790, 8278, 8626*
GOLDENBERG, D.M.
1224*, 7455*
GOLDENBERG, H.
1224*
GOLDENBERG, S.
4104, 7727
GOLDFELD, D.
4035
GOLDFISCHER, S.
3115
GOLDIN, A.
8420
GOLDIN, H.
0259
GOLDIN, V.A.
5800
GOLDIS, G.
4190
GOLDMAN, H.
1974*, 2763*
GOLDMAN, M.
7906*
GOLDMAN, R.
1014
GOLDNER, A.M.
8540*
GOLDSMID, J.M.
9287
GOLDSMITH, F.I.
1534
GOLDSTEIN, F.
2942*, 4247*, 8003*
GOLDSTEIN, G.
3493
GOLDSTEIN, H.
1860*
GOLDSTEIN, L.I.
5240, 6088
GOLDSTEIN, M.J.
0292, 6734
GOLDSTEIN, N.P.
3545*
GOLDSTONE, A.
6333
GOLDSTONE, J.
3737
GOLDSWORTHY, P.D.
3962
GOLEMATIS, B.
0690
GOLENHOFEN, K.
3783, 3887*, 638
GOLIGHER, J.C.
1015
GOLLAN, F.
8051
GOLLNICK, P.D.
3068
GOLOLOBOVA, M.T.
7807
GOLTERMANN, N.
5878*
GOLTYAKOVA, T.V.
7869
GOLUBEV, I.S.
1370
GOLUBKOV, V.A.
5729
GOMES, A.P.
1949
GOMES, F.A.
1205
GOMES, M.M.R.
2607
GOMES DA COSTA, J.A.
9109
GOMES DA COSTA, S.F.
9109
GOMEZ, A.C.
3324
GOMEZ IGLESIAS, S.
8901
GOMMI, B.W.
5564*
GONAND, J.P.
5227
GONCALEZ, Y.
7099
GONCALVES, E.L.
7099
GONCHAROV, A.I.
6066, 7043
GONGORA, R.
9069
GONTICAS, S.
4887*
GONZALES, A.M.
1472, 4541
GONZALES, J.O.
1545
GONZALEZ, C.I.
1452
GONZALEZ-ANGULO, A.
8514*, 8515*
GONZALEZ-CADAVID, N.F.
3958, 7892*
GONZALEZ CANSINO, J.R.
4195
GONZALEZ-CRUSSI, F.
5776
GONZALEZ RIVERO, J.L.
1541
GONZALEZ VALES, H.
0389

GOOD, R.A.
4130*
GOOD, T.A.
5986*
GOODENOUGH, D.A.
3790*
GOODGE, B.J.
7926
GOODHEAD, A.
1322*, 1324*, 3152*,
4346*, 6940*
GOODMAN, A.H.
7708
GOODMAN, D.S.
0010*
GOODMAN, H.M.
4883
GOODMAN, I.
5510*
GOODMAN, M.L.
0724*
GOODMAN, S.
0291
GOODRIDGE, A.G.
6434*
GOODWIN, F.J.
1611
GOOR, R.S.
2460
GOPAL RAO, H.S.
6643
GOPINATH, C.
1595
GOPINATH, T.P.
1129
GORAYER, E.
8065
GORBACH, S.L.
1212*, 2001, 2192*,
2193*, 3343*, 3709*,
4575*, 4587, 6181,
7737
GORBATOW, O.
0356*
GORDIN, F.
5757
GORDON, A.H.
7122*
GORDON, B.A.
9078
GORDON, E.
8315
GORDON, F.
7016
GORDON, H.A.
4759*
GORDON, H.E.
1084, 1877, 6209,
8433
GORDON, J.H.
6497*
GORDON, J.S.
1712*
GORDON, R.O.
3434*
GORDON, S.G.
1153*
GORDON, S.S.
1959
GORELOVA, N.V.
2463
GOREN, H.J.
2306, 2307
GORESKY, C.A.
6377
GORGENYI, A.
4637
GORGOL, V.A.
5911
GORI, F.
0425, 0650
GORIN, J.P.
3372, 9085
GORING, T.
1249
GORIS, J.
0732*
GORKIN, V.Z.
1578*, 7169
GORKOVA, N.P.
8237
GORLENKO, V.N.
3097
GORMAN, H.C.
0947*
GORODISCHER, R.
2037*
GORRIZ, F.M.
4246
GORSKI, [illegible]
2730
GORYACHEV, S.P.
7243
GOSCH, H.H.
3615
GOSLAR, H.G.
4466
GOSSET, J.F.
4164
GOSSMANN, K.H.
6936*
GOSTOF, P.
4423
GOSWAMI, B.M.
8492
GOSWAMI, P.
7000
GOSWITZ, J.T.
4525*
GOT, R.
3845, 4742, 5599
GOTOH, S.
3590
GOTS, R.E.
6136
GOTTA, H.
3658
GOTTLIEB, D.
3275
GOTTLIEB, L.S.
4250*
GOTTSAGEN, W.
6630
GOTTSCHALK, A.
8747
GOTTSCHALK, B.
5063
GOTZ, H.
4434
GOUDIE, R.P.
5206, 7623
GOUFFRANT, J.M.
4171
GOUGH, A.D.
5481
GOUGH, D.P.
6476
GOUGH, M.H.
8437
GOUIN, R.
0520, 1887, 0933
GOUIN, F.
8369
GOULD, H.R.
7219*
GOULD, R.G.
0827*
GOULIS, G.
4409
GOULON, M.
9230
GOUNOD, J.
7745
GOURILLON, H.
9265
GOUSSOUS, H.G.
3427
GOUTIER, R.
6443*
GOUZI, J.L.
9008
GOVONI, A.F.
7215*
GOWDY, J.
6820
GOYAL, R.K.
5741, 6606
GOYER, R.
1002, 1010, 1834,
1835, 1838, 1955,
3657
GOZITE, I.K.
3091
GRABICKI, P.
8111
GRABNER, G.
2039*, 2855, 8394
GRABSKA, J.
5169*, 5176*
GRACE, H.
2250*
GRACE, J.T.
0119
GRACE, J.T., JR.
6186, 7116*
GRACE, N.D.
0191*, 1708*, 7130*
GRACEY, M.
0418
GRACIE, W.A., JR.
7451, 8412
GRADAUS, D.
8063
GRADISAR, I.A.
2933

GRADNER, W.J.
1383
GRADY, G.F.
3999, 7211*, 8548*
GRAEB, D.
4931
GRAHAM, G.G.
6227
GRAHAM, J.A.
2583*
GRAHAM, N.G.
1988
GRAHAME, G.
4506*
GRAHN, B.
5523*
GRAM, T.F.
4341*, 8544
GRAMATICA, L.
1673, 2786*
GRAND, A.
4277
GRAND, D.
4277
GRANDA, V.
5425*
GRANDE, F.
3967
GRANDMOTTET, P.
8735
GRANET, E.
4722
GRANGE, G.
9255
GRANGER, R.
8575
GRANICK, S.
0332*
GRANOV, A.M.
5792
GRANT, A.K.
2262, 3436*
GRANT, D.R.
8313
GRANT, J.
2779
GRANT, R.G.L.
3311
GRANT, R.V.
5974
GRANTHAM, P.H.
3239
GRANTHAM, R.N.
3386*, 3889*
GRAPULIN, G.
0271
GRAS, J.P.
4351
GRASSE, G.
3912
GRASSETTI, D.R.
2450
GRASSI, G.
3396, 3431, 5374,
8818, 8833, 8958
GRASSI, M.
0392
GRASSI, T.
3276, 3755
GRASSO, P.
1504*, 1614
GRATZMULLER, F.
1171, 1235, 2081
GRAUEL, F.L.
1762
GRAVAUTE, G.
1655, 3880*
GRAVELEAU, J.
5200
GRAVES, H.A., JR.
1142, 5799
GRAVGAARD, E.
1461
GRAVINA, E.
4389
GRAVINA-SANVITALE, G.
4389
GRAVIOU
8231
GRAY, G.M.
0162*, 1638
GRAY, P.K.
8420*
GRAYER, D.T.
1095
GRAYER, D.T.
6942*
GRAZIINA, A.
8346*
GREASLEY, R.E.
8011*
GRECHISHKIN, D.K.
6066
GRECHISHKIN, L.L.
0066*, 7868
GRECO, A.V.
0033*
GRECO, D.J.F.A.
4106
GRECO, M.
7937
GRECO, P.
4482, 4488
GREDJEV, A.F.
8150
GREEN, A.G.
5789
GREEN, A.R.
0859
GREEN, C.D.
3159*
GREEN, F.D.
1796
GREEN, S.
0167
GREEN, S.H.
6903
GREEN, W.L.
0355*
GREENALL, R.M.
2429
GREENAWALT, J.W.
5440*
GREENBAUM, A.L.
7144*
GREENBERG, H.B.
0611*
GREENBERG, L.
0079
GREENBERG, M.S.
7130*
GREENBERG, S.R.
5906
GREENBERGER, N.J.
0767*, 1628*
GREENE, F.E.
0860, 0895, 3192
GREENFIELD, J.B.
7488
GREENFIELD, L.J.
7588
GREENGARD, O.
0114, 5578*
GREENOUGH, W.B., III
4008
GREENWALD, M.A.
7130*
GREENWAY, C.V.
5632*, 6509
GREER, W.E.
8447
GREGG, J.A.
8216
GREGOIRE, P.E.
2059
GREGOR, O.
3759
GREGORIADIS, G.
0834*
GREGORIE, H.B.
3341*
GREGORIE, H.B., JR.
5746
GREGORY, H.
3142
GREIDER, M.H.
2780
GREIM, H.
7151*, 7584
GREMY, F.
3652
GRENAUDIER, J.L.
5035
GRENIER, J.F.
2994, 5614*, 8906
8914, 9029
GRENZMANN, M.
2465, 6838
GRETILLAT, P.A.
8709*
GREW, N.
6174
GREWAL, M.S.
7759, 8501
GRIDNEVA, L.I.
7169
GRIFFATON, G.
1757, 3876, 8668
GRIFFEN, W.O.
2987
GRIFFEN, W.O., JR.
1791, 4001, 4002,
5974, 6205, 8243*
GRIFFIN, A.C.
7906*

GRIFFIN, B.G.
8032
GRIFFIN, W.T.
2925
GRIFFITH, C.A.
1667*, 1901*, 3354,
3355, 3951*, 8976
GRIFFITH, J.L.
2572
GRIFFITHS, F.B.
0080
GRIFFITHS, R.W.
5968
GRIGLIO, S.
3214
GRIGOR, M.R.
6512
GRIGORAS, D.
4082
GRIGORIAN, A.V.
0951*
GRIGORIAN, E.G.
3384
GRIGORYAN, A.V.
7715
GRIGORYAN, N.A.
7403
GRILL, W.
5962
GRILLI, S.
7563
GRILLO, A.
3001*
GRILLO, G.
8577
GRIMAUD, C.
3598
GRIMAUD, J.A.
5608
GRIMBEEK, J.F.
5686
GRIMES, L.D.
3415*
GRIMES, O.F.
8068
GRIMMEL, K.
4653
GRIMOUD, M.
8867, 9008
GRIMSON, K.S.
1975
GRINBERG, A.A.
1123, 7404
GRINBERG, L.N.
8674
GRINBERG, YA.I.
0383
GRINDON, A.
8363
GRINNAN, G.L.B.
2169
GRISHAM, J.W.
0830*, 1562*
GRISK, A.
8634*
GRISS, P.
6856*
GRITSMAN, N.N.
6010
GRIVEL, M.L.
6012, 9071
GRIZZLE, J.E.
7388, 8111
GRODNER, Z.
0382
GRODSKY, G.M.
3095*
GROENEWOUD, E.T.
8622*
GROGAN, D.F.
7885*
GROLL, A.
1991
GROLLMAN, J.H.
8420*
GROLLMAN, S.
5277*
GRONOW, M.
2033*
GRONOWSKA-SENGER, A.
6494*
GRONROOS, M.
1185
GRONWALL, R.
1771
GRONWALL, R.R.
4781, 5205
GROS, H.
2124*
GROSBUIS, S.
9230
GROSDIDIER, J.
0246, 0401, 0458,
4101, 4135, 4412
GROSFELD, J.L.
2680, 5864, 7354,
7506, 8280, 8448
GROSJEAN, N.
4683
GROSSE, H.
5039
GROSSI, A.
5845
GROSSI, F.
0392, 2911
GROSSMAN, E.
5392
GROSSMAN, H.D.
0402*
GROSSMAN, L.A.
2098
GROSSMAN, M.I.
0067*, 0801*, 2374*,
2375*, 2481*, 2907*,
3137*, 3907*, 7092*,
7191*, 7195*, 7860*,
8597*, 8599*, 8619*
GROSSO, G.
3874
GROTT, J.W.
4903
GROTT-SWIEZAWSKA, E.
4903
GROUSSARD, O.
2799*, 9039*
GROZA, P.
0321, 5539
GROZINGER, K.H.
1338, 2024, 4941,
9035
GRUBB, T.C.
1794
GRUBER, R.
5932
GRUCA, Z.
0683
GRUENSTEIN, M.
8086*
GRUHL, V.R.
2494
GRUHN, I.
0999
GRUMINSKY, V.S.
8365
GRUMMT, F.
2317, 7817
GRUNCY, S.M.
6352*
GRUNDMANN, E.
6775*
GRUNDNER, H.G.
5012
GRUNDSELL, H.
1389
GRUNDY, S.M.
4785
GRUNENBERG, R.N.
0429
GRUNERT, R.D.
6476
GRUNFELD, J.P.
9168
GRUNICKE, H.
6287*
GRUNT, J.
2363, 4813
GRUNWALD, E.
4674
GRUSZECKI, L.
4677
GRYMINSKI, J.
0595
GRYNBLAT, A.
3597, 4233, 5263
GRYNFELT, E.
1143
GUARDA, L.
3007
GUARINO, A.M.
8546
GUARNER, V.
4126, 4336
GUARRIERO-BOBYLEVA, V.
6313
GUAZZI, G.
2675
GUBERGRITS, M.V.
3004
GUBERN, A.M.
0573
GUBERNIEV, M.A.
5592
GUBLER, J.P.
8810, 8826
GUBLER, R.
5139

GUDE, Z.
5812
GUDER, U.
8507*
GUDMAND-HOYER, E.
0403*, 1113*, 1964,
2604, 7441*
GUEGUEN, L.
8571
GUELRUD, M.
0941*, 0955
GUENEI, A.M.
1768
GUENEAU, G.
8694
GUENET, J.L.
8694
GUENIN, P.
1171, 1236, 2081,
2681
GUENTER, C.A.
4520
GUERNSEY, J.M.
1052
GUERRA, J.P.G.
6700
GUERRA, M.C.
4010
GUERRA, R.
0412*
GUERRE, J.
3372, 6638, 8096
GUERRERO, M.
0166
GUERRERO ALCAZAR, M.
3990
GUERRIER, K.
7507
GUERRIN, F.
0058*
GUERRO ALCAZAR, M.
3603
GUEVARA, J.F.
1056
GUGGENHEIM, K.
6410*
GUGLER, R.
8532
GUGLIELMI, M.
1407
GUGLIOTELLA, H.G.
0332
GUIDETTI, C.S.
3755
GUIDO, J.J.
0593
GUIGNIER, D.
0622
GUILLAMOT, M.
6677
GUILLARD, J.
2076
GUILLARD, J.M.
9091
GUILLARD, M.
4353
GUILLEMANT, S.
4854
GUILLEMOT, R.
9085
GUILLET, R.
5014, 6936, 7539*
GUILLOUZO, A.
8519
GUIMARAES, J.S.
7764
GUINTEROS-NIEBOR, C.J.
0323
GUIONIE, J.
2575
GUIRAUD, R.
7987
GUIRGIS, F.K.
6281
GUISARD, D.
4259, 5227
GUITERREZ, R.
3855
GUITI, N.
4787*
GUIVARCH, M.
4985, 8094
GUIVIK, V.D.
8043
GULA, N.M.
0898
GULAN, E.
6872
GULATI, R.B.
8494
GULI, F.
3987
GULY, M.F.
3177, 7981
GULYAEV, E.A.
1048
GULZOW, M.
7870
GUMP, F.E.
3739
GUMRICH, H.
8862
GUNDEL, E.
5657*
GUNDMAND-HOYER, E.
5896*
GUNJI, J.
0537*
GUNN, A.
4795*
GUNN, A.A.
0734*, 6646, 8018
GUNNER, B.W.
2560
GUNNLAUGSSON, G.H.
1008, 5756
GUNTHER, G.
0154
GUNTHER, H.
0184*, 1813, 5693
GUNTHER, O.
2599
GUOZDEV, M.P.
0997
GUPTA, H.L.
1442*, 5898
GUPTA, S.
3478, 7308
GUPTA, S.K.
7357
GUPTE, U.V.
0787*
GUPUY, R.
3302
GURD, F.N.
5771
GURKAN, K.I.
7411
GURLAND, S.
3131
GURR, M.I.
7040
GURRERI, G.
8985
GURSEL, F.
4555
GURSON, C.T.
1213*
GURT, J.R.N.
1916
GURVICH, R.N.
7239
GUSAK, V.K.
1296
GUSCHIN, B.V.
0015*
GUSEINOV, A.M.
1530
GUSEVA, N.G.
6010
GUSMANO, R.
4392, 4560
GUST, I.D.
8347*
GUSTAFSSON, B.E.
0765*, 4790*
GUSTAFSSON, F.A.
5412*
GUSTAFSSON, J.A.
0723*, 2335*, 2414*
2407, 3227*, 6445*,
7057*, 7132*, 8613*
GUTGEMANN, A.
1388
GUTH, P.H.
2796, 4972
GUTHORN, P.J.
4200
GUTHRIE, J.
0583
GUTHRIE, R.H.
2182
GUTIERREZ, C.
2743
GUTIERREZ, J.M.
0630
GUTIERREZ BLANCO, H.
8273
GUTMAN, A.D.
2450
GUTMAN, Y.
4783
GUTMANN, H.R.
2397*, 8671

GUTMANN, P.A.
5816
GUTSCHOW, K.
3176, 5623
GUTSTEIN, S.
7193*, 8938
GUTTMAN, F.M.
9233
GUTZ, H.
0981
GUY, Y.
3022
GUYER, P.H.
5965
GUY-GRAND, B.
3450, 4870, 8247
GUY-GRAND, D.
7482
GYENES, G.
6927
GYEPES, M.T.
7993*
GYERGYAY, F.
5083
GYFTAKI, H.
9282
GYORFFY, A.
6405
GYORGY, L.
1652
GYURKO, G.
4547
HAALEBOS, M.
0925*
HAALEBOS, M.M.P.
7675
HAARMAN, K.
4161
HAAS, P.
5193, 9100
HAAS, R.J.
7958
HABER, S.
5564*
HABERER, J.P.
9084
HABERICH, F.K.
1723*
HACHEN, H.J.
6665
HACKL, H.
8566
HADCHOUEL, P.
3179, 3556, 3558,
3597, 5216, 5995*
HADDAD, C.M.
7727
HADDAD, J.
0425*, 0464, 1292
HADDAD, J.K.
2545*
HADDY, F.J.
4871*
HADJIKHANI, H.
8693
HADJIOLOV, A.A.
0124
HADJIOLOV, D.
3081, 3608, 6761*
HADJU, N.
4597
HADNAGY, C.
3881, 5083
HADZIYANNIS, S.
0733*, 8387
HADZIYANNIS, S.J.
6087, 7630
HAECKLE, H.
6475
HAECKLE, R.
6475
HAEFELY, W.
6224
HAERER, A.F.
1093
HAERTWIG, R.
8724
HAEUSLER, G.
6224
HAFFNER, J.F.W.
1177, 1940
HAFSTROM, L.O.
1746
HAGA, J.V.
7784*
HAGELSKAMP, P.
8673
HAGEMAN, J.H.
3736
HAGEMANN, R.F.
1571*, 3029*, 7778*
HAGEN, G.
2716
HAGERSTRAND, I.
2036*
HAGGARD, J.H.
7138*
HAGGERTY, J.T.
3332
HAGHIGHI, L.
1097
HAGIHARA, M.
6325
HAGIWARA, T.
4564*
HAGLUND, W.M.
5137*
HAGUENAUER, J.P.
8805
HAHN, A.L.
2094
HAHN, R.C.
1222*, 2246,
8463
HAHNLOSER, P.
1790*
HAHNLOSER, P.B.
0164*, 6510
HAIDER, M.
0726*
HAIG, T.H.B.
7513, 8260
HAINES, D.S.M.
7912*
HAJIRO, K.
4049, 8711*
HAJJAR, J.J.
3105*, 3106*
HAKANSON, E.
5414*
HAKANSON, R.
0071*, 1671*, 2374,
3793*, 3913, 6404
HAK-HAGIR, A.
8116
HAKIM, J.
5008, 8656
HAKKINEN, I.
5775, 7653*
HALABI, M.
0325, 6382*
HALBREICH, A.
0835*
HALBHUBER, K.J.
5481*, 8521
HALBHUBER, U.
5481*
HALER, C.
3186
HALES, M.R.
1792
HALGRIMSON, C.G.
1318, 3464*, 6792
HALL, A.D.
2352, 3737
HALL, D.G.
7967
HALL, I.H.
0118
HALL, R.
1526
HALL, R.F.
0070*, 0666
HALL, W.T.
7756
HALLACE, A.
2278
HALLAHAN, W.F.
1079
HALLBOOK, T.
3430
HALLE, M.
5458*
HALLENBECK, G.A.
1915
HALLETT, G.W.
8304
HALLGREN, T.
2170
HALLIDAY, J.P.
2451, 6073
HALLINAN, T.
1772
HALMAGYI, A.F.
2608
HALMAGYI, D.F.J.
7708
HALPERIN, H.
7164
HALPERIN, M.L.
7106*
HALPERN, A.
9164
HALPERT, J.
7608
HALPIN, T.C.
1628*

HALTER, F. 4808, 8709*, 8855, 9252
HALVERSEN, R.C. 1029
HALVORSEN, S. 1294*, 4364*
HAM, J.M. 2117
HAMANN, H.J. 5783
HAMBURGER, J. 4777
HAMDY, M.K. 7751
HAMEL, J.Y. 5321
HAMELIN, L. 1065
HAMETOVA, M. 0576
HAMIDOU, B. 3273
HAMILL, T. 7124*
HAMILTON, D. 6493*
HAMILTON, D.G. 8011*
HAMILTON, F. 3649*
HAMILTON, J.D. 3697*, 6184
HAMILTON, J.P. 2564
HAMILTON, J.R. 3034*
HAMILTON, J.M. 7830*
HAMILTON, M.G. 3804*, 7784*
HAMILTON, R. 2290*, 3420*
HAMILTON, T. 6681
HAMMAR, H.P. 6431*
HAMMARSTEN, J. 4520
HAMMER, C.S. 0495*
HAMMER, P. 5641
HAMMERLEIN, M. 4964, 4965
HAMMOND, M.G. 3519, 3527
HAMMOU, S. 4993, 8893
HAMORI, A. 6669
HAMOUDI, A.B. 7506
HAMPERL, H. 4382
HAMPL, P. 1730
HANAFEE, W.N. 1806*
HANAKI, A. 2422, 5994*
HANANO, M. 3122
HANAOKA, M. 3026*
HANBERG SORENSEN, F. 1098
HANCE, D. 1967
HANCOCK, D.L. 0296
HANCOCK, D.L. 7952
HAND, K.M. 3049
HANEFELD, M. 4896, 5626*
HANICKA, M. 7734
HANICKI, Z. 7734
HANKS, J.P. 6721
HANKS, J.H. 2656
HANKS, T.J. 2560
HANLON, C.F. 6545*
HANNA, F.A. 1411
HANNGREN, A. 1873
HANNIG, K. 5426*
HANNINEN, O. 2836
HANNOLFF, F. 8655
HANNOVER, R. 1261
HANNYA, K. 6271
HANSBARGER, E.A. 2014
HANSCH, C. 5568
HANSEN, A.F. 5581*
HANSEN, H.J.M. 8609*
HANSEN, J.D.L. 5772, 3440*
HANSEN, J.L. 6567
HANSEN, P.G. 5451
HANSEN, R.H. 2158
HANSEN, V. 5244
HANSEN, W.G. 3102*
HANSKY, J. 0741*
HANSON, E.L. 7301
HANSON, K.P. 0670
HANSSON, F. 6691
HANYCZ, J. 4579
HAQUE, S.M. 2146
HAQUE, Z.A. 6973
HARA, M. 9217
HARADA, T. 6024, 8589
HARAPONGSE, R. 2220
HARASZTI, A. 2993*
HARDCASTLE, J.D. 0054, 1269, 3128, 4804, 7855
HARDELAND, R. 7938
HARDEN, R.MCG. 1679
HARDEWIG, A. 6875*
HARDIN, W.J. 6177
HARDING, A. 3290
HARDWICK, C. 8188
HARDWICK, D.F. 2845, 4446*
HARDY, F.G. 1498
HARDY, J.D. 0933*, 1141, 1520, 1676, 6177, 8903
HARDY, K.J. 4279, 4881, 5118, 7591
HARDY, M.A. 0928, 1931
HARDY, R.N. 7067*
HARDY, W.W. 6064
HARE, T.A. 7115*
HAREL, L. 3939*
HAREWOOD, I.H. 2775
HARGREAVES, A.W. 1218*
HARGROVE, M.D., JR. 1068, 2559, 6782
HARGROVE, R.L. 0259, 5253*, 5695, 7707
HARINASUTA, C. 8496
HARINASUTA, T. 8496
HARING, O. 1396, 5214, 6236, 6651

ARLEY, W.R.S.
3614
ARLEY, J.M.
7740
ARMAN, D.
3071
ARMEAU, H.
9001
ARPER, A.F.
4918*, 5493*, 7089*
ARPER, D.T., JR.
6158*, 8027
ARPER, R.V.
8747
ARRIS, C.C.
3629
ARRIS, C.H.
2679
ARRIS, D.L.
0969
ARRIS, E.J.
1629
ARRIS, H.S.
2739
ARRIS, J.
3463*
ARRIS, I.T.
5444
ARRIS, L.D.
2544*, 3323, 3900*
ARRIS, M.
9909*
ARRIS, M.J.
5858
ARRIS, O.D.
6685*
ARRIS, P.W.R.
2151
ARRIS, R.W.
2605
ARRISON, F.G., JR.
2607
ARRISON, G.G.
5223*
ARRISON, G.K.
0262, 2559
ARRISON, J.
3420*
ARRISON, R.C.
4365, 9025
ARRISON, W.J.
7498*
ART, D.L.
7274
ART, W.
3917
ARTEL, G.
6692
ARTEL, W.
4179, 5941
ARTEMANN, F.
6166
ARTENSTEIN, F.
3573
ARTIALA, K.
6659*
ARTL, W.
5005
HARTLEY, C.S.
2361*
HARTLEY, P.S.
6272
HARTMAN, H.A.
2315
HARTMANN, G.
1249
HARTMANN, P.
4179
HARTROFT, W.S.
2835, 5250, 9110
HARTTE, U.
5365
HARTWEG, H.
4244
HARTWICH, G.
5266, 6539
HARVEY, R.W.S.
6174
HASAN, S.H.
6777*, 6848, 7580*
HASCHEN, R.J.
5182*
HASEGAWA, F.
7161*
HASHIMOTO, A.
1596
HASHIMOTO, K.
4788*
HASHIMOTO, T.
4462
HASHIMOTO, Y.
6637
HASLEWOOD, G.A.D.
3195
HASSAN, H.
6525
HASSAN, M.A.
3293
HASSANEIN, E.A.
4567*
HASSE, W.
2954, 8847
HASSENEIN, E.
3767*
HASSLINGER-DIETHERT, I.
5783
HASTRACKA, J.
4548, 4549
HASUMURA, Y.
8638*
HATCHER, C.R., JR.
1851
HATHAWAY, J.A.
8729
HATMANU, D.
2206
HATTORI, H.
3245*, 4209, 7189
HATTORI, K.
0781
HATTORI, M.
3233
HATTORI, N.
3572
HATZFELD, A.
6818
HAU, T.
6602
HAUCK, G.
3251
HAUG, N.L.
2971
HAUGE, C.W.
2342*
HAUGEN, O.A.
7418
HAUMAN, R.L.
2786*
HAUSCHILD, A.H.W.
4884, 5396
HAUSER, J.
9179
HAUSER, S.
7133*
HAUSSLER, M.R.
1563*
HAUTEFEUILLE, P.
8953
HAUTON, J.
5314
HAUTON, J.C.
3175
HAUZEUR, F.
9134
HAVEL, R.J.
3172*
HAVEMANN, K.
2129, 6854*, 6971
HAVERBACK, B.J.
5970
HAVIA, T.
2951*, 4606
HAVIVI, E.
7196*
HAVLIK, J.
4620
HAWBECKER, D.E.
7751
HAWK, W.A.
2400, 3715, 4200,
9221, 8999
HAWKES, C.H.
6522*
HAWKINS, C.F.
4029
HAWLEY, D.R.
3484
HAWLEY, W.D.
7589
HAWTHORNE, J.N.
5430*
HAWTREY, A.O.
1749, 1756, 7048
HAXHE, J.J.
9073
HAXTON, J.
8487*
HAY, J.M.
2235
HAYAKAWA, H.
2542
HAYASAKA, N.
6742*
HAYASE, K.
1697*

HAYASHI, J.
1986
HAYASHI, M.
5994*
HAYASHI, T.T.
0824*
HAYES, D.M.
4132*
HAYES, J.
3861
HAYNES, C.D.
0555, 7665
HAYNES, R.C., JR.
0862
HAYT, D.B.
3263*
HAZEL, J.P.
2262
HAZELL, K.
6993
HAZENSON, L.B.
7691, 7730, 7731
HAZLEWOOD, R.I.
8557*
HEALEY, J.F., JR.
6322, 7477
HEALY, G.P.
2267, 7249
HEANEY, R.P.
2894*
HEATH, T.
1793, 3950*
HEATHCOTE, J.G.
4806*
HEBERER, G.
4957, 5914
HEBERT, S.
3821, 4741
HECHT, A.
1438*
HECHT, Y.
0599, 3597, 3652,
5174*, 8014, 8924.
8953
HECKER, W.C.
0426*, 8821, 8972
HECKLY, R.J.
3997
HEDENBERG, I.
4918
HEDING, L.G.
5614*
HEDLUND, S.G.
0932
HEDUER, P.
4794*
HEGARTY, H.P.
5568*
HEGER, H.
8746, 9076
HEGGARTY, H.J.
3618
HEGNER, D.
3203
HEIBLUM, H.
0493
HEIDEMA, J.
4718
HEIDENBLUT, A.
5813
HEIDRICH, H.G.
5426*
HEIKEL, T.A.J.
3164*, 6339
HEIM, F.
3616, 5166*
HEIM, U.
5328
HEIM, W.
9242
HEIMBERG, M.
3161*, 5584*
HEIMER, D.
4715
HEIMLICH, H.J.
8082
HEINKEL, K.
0227, 1659, 8211*
HEINONEN, J.
4091*
HEINONEN, J.V.
1166
HEINRICH, I.
3050
HEINZ, F.
6327
HEINZE, J.F.
5538
HEIRWEGH, K.P.M.
7779*
HEISLER, H.
2024
HEISS, W.
8821
HEITMANN, P.
0987, 8714
HEITZMAN, R.J.
3204
HELANDER, H.F.
6407, 7065*
HELCL, J.
7620
HELD, A.
0586
HELD, H.
6081
HELELA, T.M.
2609
HELENON, C.
4590, 8996
HELFRICH, G.B.
2568
HELIA, O.
2427
HELL, E.
4403, 5193
HELL, K.
1072
HELLER, W.
0179*
HELLMAN, L.
6130
HELLSTROM, H.R.
8430
HELLSTROM, K.
7553
HELM, E.A.
2266, 6984
HELMBOLD, A.F.W.
9864
HELMER, C.
6583
HELMI, S.A.
2490*
HELMS, M.
0420, 0454
HELPAP, B.
4390
HELSINGEN, N., JR.
1174, 1978, 5753
HEMMING, F.W.
6475
HEMS, R.
3931*
HEMSENDORF, K.
9206
HENDERSON, G.D.
7970
HENDERSON, P.T.
5415*
HENDREN, W.H.
5116, 7488
HENDRICH, F.
5131
HENDRICKS, J.
1412, 6379*, 74
HENDRIX, T.R.
3235, 3317, 5761
6158*, 6942*
HENDRY, W.F.
3593
HENDY, R.
4449*
HENINGER, R.W.
2396*
HENLEY, K.S.
0860, 2141, 5632
HENMAN, F.D.
7091*
HENNECKE, A.
4442
HENNESEY, W.R.
2560
HENNING, H.
6573
HENNING, M.
5096
HENNINGHAUSEN, G.
7870
HENRICH, H.
7909
HENRIKSON, B.
6596
HENRIKSON, D.M.
6230
HENRIKSON, R.C.
6334
HENRION, C.
1906, 4212* 8061
HENROT, M.
2575
HENRY, C.
3086, 7821
HENSGENS, C.
3229

ENTGES, D.J.
8701
ENTSCHEL, F.
9126
ENTZEN, D.
6481
EPNER, G.M.
0417, 3709*
ERANZ, B.
4104
ERAUD, M.
1824
ERBERMAN, R.
6694*
ERBERT, G.A.
1878
ERBERT, V.
6375
ERBERTSON, B.M.
1583*, 2660*
ERBEUVAL, R.
8517
ERBST, J.J.
3035*
ERCZEG, B.
8561
EREMANN, J.F.
2484*
ERFORT, K.
6551
ERGT, R.
6980
ERINGOVA, A.
1730
ERLAND, A.
3591*
ERMAN, R.H.
4848, 5427*, 5611*,
5613*, 5619*
ERMANEK, P.
8947
ERMANN, G.
5773
ERMANN, R.E.
1340, 4973, 8308
ERMIER, M.
3524
ERMON-TAYLOR, J.
5519*
ERMOS, J.A.
3019
ERNANDEZ, C.
0453, 0505, 4055,
4900, 8953
ERNANDEZ, CL.
0959
ERNANDEZ, J.
8198
ERNANDEZ, M.
0556
ERNANDEZ-MORALES, F.
3770*
ERR, F.
5523
ERRERA, R.
0691
ERRERO, J.E.
0572
HERRINGTON, J.L., JR.
3401, 4594, 5046,
6648
HERRINGTON, M.D.
1749
HERRMANN, K.
6624
HERRMANN, R.P.
4910
HERS, H.G.
7142*, 7146*
HERSH, T.
5380, 5931, 6214,
6930*, 6932*
HERSHBERG, R.A.
2075
HERTZ, H.
4849
HERTZ, R.E.L.
0432
HERTZBERG, J.N.
1207*, 1208*
HERTZER, U.R.
1340
HERUFEK, R.
9040*
HERVY, T.
0230
HERZ, R.
2065
HERZBERG, S.R.
0372
HERZMANN, J.
6240
HERZOG, D.
9254
HERZOG, J.
3214
HESCHEL, S.
0280
HESCHL, P.
6237, 6550, 8766,
8767
HESS, M.W.
1191
HESS, V.
8324*
HESSE, V.
0141
HETENYI, G.
3806*
HETENYI, G., JR.
0813
HETILAND, ST.
0007*
HETTICH, P.
0779
HETU, C.
7032*
HEULLY, F.
2936, 4517
HEULLY, G.F.
4639
HEULLY, M.C.
5192
HEWICK, D.S.
3078, 5577*
HEWSON, J.R.
5771
HEXEBERG, A.
6163
HEYBOWITZ, R.
0910*
HEYDENRYCH, J.J.
0659
HEYMAN, P.L.
1908
HEYNEN, U.
5197
HEYROVSKY, A.
0578
HEYWORTH, R.
8423*
HIASA, Y.
6827
HIATT, R.B.
5510*
HIBBERT, W.A., JR.
1279
HICKMAN, R.
8001
HICKSON, J.C.D.
1686*, 1688*
HIDALGO HUERTA, M.
2664
HIDER, R.C.
7058*
HIDVEGI, D.V.S.F.
6536
HIDVEGI, E.J.
2623
HIEBERT, C.
8065
HIEBERT, J.M.
0724*
HIGAKI, H.
2616
HIGAKI, K.
0100*
HIGASHI, K.
3590
HIGASHI, T.
3825
HIGASHINO, K.
2289*
HIGGINS, G.K.
4379
HIGGINSON, J.
0549, 4376
HIGH, F.G.
6276
HIGHMAN, B.
0849*, 4721
HIGHT, D.W.
2615
HIGHTOWER, N.C., JR.
3156
HIGUCHI, V.I.
3870, 3871
HIGUCHI, Y.
2078, 6600
HILAN, Z.
1018
HILBE, A.
5612*
HILDEBRAND, H.
0871

HILDEBRANDT, H.J.
0812*
HILL, D.E.
6227
HILL, G.L.
1630*
HILL, J.E.
7503
HILL, J.R.
3472, 5109, 7474
HILL, K.
0561
HILL, L.
3219, 3224
HILL, L.D.
8421*
HILL, M.J.
3944*, 3945*
HILLBOM, M.E.
0838*, 3120
HILLEMAND, B.
3337, 3364, 3467,
3468, 3751, 4649,
5343, 8095
HILLMAN, R.E.
3439*
HILLS, L.L.
8400
HILLYER, G.V.
3770*
HILOTANI, K.
6592
HILTNER, H.
2162*
HILTON, H.D.
2925
HILTON, P.J.
7058*
HIMAL, H.S.
3152*
HIMSWORTH, R.L.
1675*, 3134*
HINCENBERGS, I.
0887
HINCHEY, E.J.
5771
HINKEL, G.K.
5063, 6086
HINKLE, P.C.
0843*
HINKLEY, R.E.
1684*
HINO, I.
1937
HINRICHS, H.R.
2763*
HINSHAW, J.R.
0487
HINSON, K.F.W.
0398*
HINSSEN, K.
8724
HINTON, N.A.
5631*
HINTON, D.H.
2283*
HIONG, K.I.
3772
HIPPE, F.
4811
HIPSLEY, F.H.
3706*
HIRAMATSU, K.
4810*
HIRANO, S.
4593, 5787
HIRANO, T.
4006
HIRATA, G.
6376
HIRAYAMA, C.
1750, 3643*, 4005*,
6446*
HIRIGOYEN, P.
7735
HIROHATA, T.
1096
HIRONO, T.
5366
HIROOKA, M.
6176
HIROSE, F.M.
7093*
HIROSHIGE, K.
1750, 3829, 5507,
6446*
HIRS, C.H.W.
2316
HIRSCH, A.
0156
HIRSCH, H.M.
6977
HIRSCH, M.
1174
HIRSCHFELD, J.
5914, 8354
HIRSCHFIELD, J.S.
2219
HIRSCHHORN, N.
2908*
HIRSCHHORN, R.
7109*
HIRSCH-MARIE, H.
3139, 3140
HIRSHOWITZ, B.I.
2608*, 6406, 6529
HIRT, C.
8557*
HIRTZ, R.
8469
HIRVONEN, J.
1055, 2633*, 6285*
HISEY, D.F.
2795
HISLOP, I.G.
3436*
HISSEN, W.
6972
HITANANT, S.
6379*
HITOS NATERA, E.
8869
HIURA, Y.
3269*
HIVET, M.
2076, 4334, 8453,
9001, 9225
HLAVICA, P.
7113*
HO, K.J.
7166
HO, M.F.H.
3870, 3871
HO, P.C.
6339
HOAGLIN, L.L., JR.
6014
HOAGSTROM, C.V.
6132
HOBBS, J.B.
6417, 6165*
HOBSLEY, M.
0785*, 3293
HOCH, J.
0921*, 4754*
HOCHMAN, R.
2334*, 5080
HODSON-WALKER, N.J.
8261
HOEDEMAEKER, P.J.
3023*, 5826*
HOEFFEL, J.C.
6131
HOENIG, V.
1734, 2110
HOER, P.W.
1037
HOERR, S.O.
5772
HOF, J.
4051
HOFBAUER, K.
5214
HOFERICHTER, J.
1337
HOFFBRAND, A.V.
8551*
HOFFENBERG, R.
7122*
HOFFMAN, A.F.
3266*
HOFFMAN, D.G.
3580
HOFFMAN, T.E.
0111
HOFFMANN, D.C.
0397*
HOFFMANN, F.
8098
HOFFMANN, O.F.S.
1117
HOFFMEISTER, H.E.
4518
HOFMAN, S.
6385
HOFMANN, A.F.
4248*, 5893, 6409*,
7184
HOFSTETTER, J.R.
5204
HOGAN, K.
8657
HOGBEN, C.A.M.
0030*
HOGLE, H.H.
1029

GLUND, S.
1635
OH, T.K.
1870
OHENFEILNER, R.
8942
OHENWALLNER, W.
4844*
OHLFELD, P.
8682
OJGAARD, K.
6857*, 7302
OJMAN, D.
7450, 8169
OK, K.A.
6362
OKAMA, Y.
7957
OLBOROW, F.J.
8350*
OLCOMB, G.W.
4604
OLDEN, W.D.
1575*
OLDER, F.
4099, 6830*
OLDER, T.M.
7309
OLDSTOCK, D.J.
4264*, 5090*
OLDSWORTH, C.D.
1874
LDSWORTH, E.S.
7024*, 7830*
LINGER, P.
6586
LLAND, D.W.
0608*
LLAND, P.V.
2868*, 7230
LLANDER, D.H.
0228
LLARD, J.
2423
LLDORF, A.W.
8604
LLENDER, L.
5903
LLENDER, L.F.
0314, 7654*, 8103,
8715, 8917, 9028
LLINGSWORTH, P.C.
6175
LLINSHEAD, A.
6694*
LLMANN, S.
3049, 6422*
LLOWAY, J.B.
5876
LM, J.L.
1888
LMAN, U.
4722
LMES, A.W.
3640, 7609
LMES, J.
3763
LMES, R.S.
2280*
HOLSCHER, A.A.
2520, 3324
HOLSTEIN, A.F.
4295*
HOLSTI, L.P.
5855*
HOLSTVOOGD, I.
4301
HOLT, A.R.
4829*
HOLT, J.F.
7566
HOLT, J.M.
5684, 8835
HOLT, P.G.
1577*, 4727
HOLT, T.P.
8032*
HOLTTA, E.
8655
HOLTZAPPLE, F.G.
6912*, 8773*
HOLTZMAN, J.L.
6841*, 8623*
HOLUB, K.
1466
HOLUBITSKY, I.P.
8625
HOLYOKE, J.B.
5743
HOLZ, K.
5813
HOLZEL, A.
1887
HOMAN, E.
7197*
HOMATAS, J.
8532*
HOMBERG, J.C.
3657
HOMMES, F.A.
1747, 7529*
HONOLKA, J.
2386
HOMORODEANU, D.
1950
HONAKER, A.C.
1791
HONDA, G.
8530, 8531
HONDA, T.
5547
HONG, F.C.
6663
HONG, P.
2496
HONG, S.S.
2359*, 3158, 3221*,
7879*
HONIGMAN, F.
6618
HONIOTES, G.
2648
HONJO, I.
0059
HONOLD, G.R.
4712*
HONYA, M.
7345, 7346
HOOD, C.I.
8487
HOOD, J.
2684*
HOOFT, C.
0408*, 1217
HOOG, J.M.C.
5686
HOOTKIN, L.
8476
HOOTKIN, L.A.
8058
HOPCROFT, A.
3016
HOPPENSTEIN, J.
6588
HOPPS, H.F.
2106*
HOPTON, D.
8252
HORAK, Z.
0949*
HORAKOVA, D.
0578
HORAKOVA, Z.
7993*
HORCICKA, V.
1678
HORECKER, B.L.
6290*
HORDER, M.H.
0641
HOREJSI, J.
7621
HOREYSECK, G.
5961*
HORI, K.
0112
HORI, R.
6733
HORING, F.O.
4658
HORIO, T.
7042
HORKAY, I.
0553
HORLEIN, H.
3092
HORN, H.D.
6934*
HORN, T.
0894
HORNBAK, H.
7490
HORNBY, G.M.
7141*
HORNER, R.M.
6904
HORNSBY, L.G.
8215
HORNTRICH, J.
4437, 8153
HOROWITZ, M.S.
4880
HOROWITZ, P.
3072
HORSLEY, J.S., III.
3495

HORTA, E.
0419*, 2687*
HORTON, L.A.
6437*
HORTON, E.W.
0927
HORTON, R.F.
2549*
HORVATH, J.
8903
HORVATH, M.
0331
HORVATH, S.M.
1799
HORWICH, I.
7841
HORZELA, T.
0075
HOSBRO OSTERGAARD, A.
6793
HOSHI, T.
3237
HOSHINO, S.
7581*
HOSHITA, T.
0094*
HOSKINS, R.A.
1900*
HOSNEY, S.H.
4217
HOSOYA, E.
7128*
HOSOYA, N.
6355*
HOSSAIN, S.A.
4572*
HOSSAIN, Z.
0367
HOUBOVA, J.
4229
HOUCKE, M.
0744, 8288, 9227
HOUDARD, C.
4590, 7493
HOURDRY, J.
1167, 1168
HOURIGAN, K.
6784
HOURIHANE, D.O'B.
3517*, 7947
HOUSE, R.
1793
HOUSSAINT, E.
4736
HOUSSET, E.
4055
HOUSSET, P.
1887, 4047, 4098,
5473, 5665
HOUSTON, S.
2454
HOWARD, A.V.
0942*
HOWARD, B.R.
1657
HOWARD, C.H.
6375*
HOWARD, C.M.
1700*
HOWARD, E.
6817
HOWARD, H.
3465*
HOWARD, J.M.
1076, 2943*, 3243*,
3428*
HOWARD, W.F.
2211
HOWARD, W.J.
2443
HOWE, J.M.
5658*
HOWE, R.B.
7063*
HOWE, R.F.
1383
HOWELL, R.A.
1346*, 7150*
HOWELL, J.I.
5436*
HOWELL, S.I.
2780
HOWELL, T.R.
8069
HOWELLS, G.
4603
HOWIE, J.G.R.
5928
HOWLAND, W.S.
5985*, 8303
HOYE, R.C.
3714
HO YUEN, B.
9200*
HRADEC, J.
7154*
HRENO, A.
5771
HRNCIR, Z.
2890
HSIE, A.
1710*
HSU, H.F.
9271
HSU, H.S.
7209
HSU, R.Y.
1778, 1780
HSU, S.C.
2241
HSU, S.Y.L.
9271
HUANG, W.Y.
4810
HUAUX, J.P.
8925
HUBENS, A.
5840
HUBER, F.B.
6947
HUBERHUS, H.
8174
HUBERMAN, A.
8373*
HUBERMAN, H.S.
0832*
HUBIN, C.
9013
HUBNER, A.
4533
HUBNER, K.
0154
HUBNER, L.
8640
HUBSCHER, G.
0850*, 2470*
HUCHET, R.
8143
HUCHO, F.
0881
HUDAK, A.
2304
HUDSON, D.A.
0902*
HUDSON, F.
2774
HUET, P.
4257
HUET, P.M.
4233
HUG, C.C., JR.
4793*, 4801
HUG, G.
7572
HUGGINS, D.
0939*
HUGH, T.B.
0347, 2560
HUGHES, C.S.R.
1272, 4279, 4280,
4881, 5118
HUGHES, E.C.
1733
HUGHES, J.M.
3311
HUGHES, L.F.
4267*, 5100
HUGHES, M.
6833*, 7720
HUGHES, R.E.
3948*, 4367*, 4368*
HUGHES, R.K.
3321
HUGHES, S.D.
1710*
HUGILL, J.
3781
HUGON, J.S.
1617, 4703*, 5413*
HUGUES, C.
5229
HUGUET, C.
4936, 9092
HUGUET, J.
1693
HUGUET, J.F.
6547
HUHTANIEMI, I.
5949
HUIZENGA, K.A.
0495*, 5547*, 6730*
HUKAHARA, T.
3179
HULE, V.
5131
HULL, D.
8243*

LL, F.W.
0543
LSMANN, W.
5228
LSMANN, W.C.
7986*, 8513*
LTBERG, B.
4440
LTEN, J.
6914
LTEN, L.
3258, 3506*, 3898
LTEN, O.
3687
LTIN, I.
8512*
LU, N.
6229
ME, D.M.
1345*, 7508
ME, P.
4925
MPHRIES, C.
1613
NDESHAGEN, H.
4061
NKAPILLER, M.
5538
NSTEIN, W.
4472
NT, F.G.
0933*, 1676
NT, J.M.
3104*
NT, P.
8315
NT, S.M.
8270*
NT, T.
1271, 1922
NT, T.K.
3400
NTER, D.T.
8729
NTER, F.F., JR.
1707*
NTER, G.W., III
7014
NTER, J.R.
5129
NTER, J.G.
3470
NTINGTON, R.W., JR.
1967
PE, K.
8602
Q, Z.
4568*
REAU, J.
8799
REZ, D.
5346
RLBUT, H.J.
1343
RST, L.
0152
RWIC, M.
0896
HURWITZ, A.
7667
HURWITZ, L.
1646*
HURWITZ, M.R.
5209
HURWITZ, R.
3035*
HUSAIN, S.
2131*
HUSBAND, J.
0045*
HUSBAND, P.
0045*
HUSBANDS, D.R.
2275*
HUSQUINET, W.
9013
HUSSAIN, A.
1416*
HUSSAIN, S.A.
5000
HUSSEY, J.L.
7704
HUSTON, R.L.
4712*
HUTCHINSON, C.F.
5579*
HUTTERER, F.
2908*, 4832*, 5222*,
6895, 7901*
HUTTON, M.M.
1966
HUTZEL, M.
7880*
HUTZLER, J.
4857
HUTZLER, R.U.
4492
HUVES, A.G.
0432
HUVOS, A.G.
7562
HVIDT, S.
8296
HWANG, S.C.
0307
HWANG, W.S.
4564
HYAMS, L.
5102
HYKES, P.
0973
HYNIE, I.
8692
HYODO, H.
6343, 7145*
IACOB, C.
4041
IACOBELLIS, U.
4148
IAMANDESCU, I.B.
8455
IANNETTA, A.
2940*
IASONNI, V.
9197
IBADOV, I.YU.
1281
IBARRA, R.
3275
IBER, F.L.
2188*, 2682*, 6779*,
6942*, 8168*
IBRAGIMOV, A.SH.
1538
ICHIDA, F.
6022
ICHIHARA, K.
6828
ICHII, S.
4834*
ICHIKAWA, H.
6478
ICHIKAWA, Y.
0125, 5271, 6300*
ICKOWICZ, R.
3065
IDE, H.
2326*
IDE, K.
0224
IDE, Y.
6786, 7596
IDEO, G.
5604, 6855, 8611*
IEMHOFF, W.G.J.
7986*, 8513*
IGA, T.
3122
IGARASHI, A.
4697*
IGARASHI, M.
8526
IGNACZAK, I.
0683
IGNATIUS, J.A.
8834
IGNATOVA, M.V.
5728
IHASZ, M.
3891*
IIDA, H.
2509*, 9216, 9218
IIO, H.
0224
IIZUKA, H.
0222
IIZUKA, K.
4697*
IIZUKA, T.
2482*
IKEDA, M.
2332*, 2475
IKEDA, M.
5732*
IKEDA, S.
4205, 6514*, 8004*
IKEGAMI, F.
8638*
IKEJIRI, K.
1937
IKEMOTO, S.
7065, 7046, 7179
IKESHITA, T.
6664
IKKALA, E.
7329*

IKKES, D.
4887*
ILAHUDE, H.
3488
ILIC, L.B.
2632
ILIC, V.
3630, 7633*
ILIESCU, D.
6872
ILIESCU, G.
5178
ILIUS, D.
0184*
ILLARIONOV, Y.A.
5714
ILLINGWORTH, J.A.
6335
ILYIN, V.S.
7547
IMACH, D.
2038*
IMAIZUMI, K.
4565*, 4566*
IMAIZUMI, T.
2093
IMAMI, R.H.
6348*
IMAMOGLU, K.
4555
IMAMURA, A.
2354
IMAMURA, H.
4856
IMBERT, X.
9274
IMBESI, C.
6049
IMLER, M.
4950, 5286, 5299
IMMICH, H.
5212
IMONDI, A.R.
4692*
IMOTO, S.
3822
IMRE, J.
1009
INADA, M.
6356*
INAGAKI, H.
1886, 8932
INAKURA, M.
1814, 5670
INAMASU, M.
6495
INAMDAR, A.R.
7185
INAMI, O.
5758
INAMOTO, A.
3592*
INAMOTO, K.
6554
INAMOVA, K.B.
5544, 7096
INBERG, M.R.
3722
INBERG, M.V.
2164, 2951*, 3168*,
3712, 4117
INCZINGER, F.
5993*
INFANGER, K.
6590
INFANTE, R.
3611, 3615*
INGELFINGER, F.J.
0791*, 1853
INGELMAN, B.
6527
INGLERANS, P.
0248, 0249, 4162,
8970
INGLESAKIS, J.A.
5017
INGLIS, J.R.
0147
INOGUCHI, K.
4991
INOKUCHI, K.
2132*, 4128
INON, A.
4504*
INOUE, H.
3900
INOUE, K.
9216
INOUE, M.
6784, 7596
INOUE, Y.
6330
INOYATOV, I.M.
2738, 7464, 7494
INSUNZA, I.
4463
INTAGLIETTA, M.
3250
IONESCO, A.
6667
IONESCU, D.
8871
IONESCU, P.
0394
IONESCU, S.
5530
IONESCU, ST.
0321
IOVINO, A.
3750
IPATA, P.L.
4712
IQBAL, A.K.
0494
IRALATI, T.
3772
IRIE, M.
3030*, 3200
IRIFUNE, T.
6581
IRINO, H.
2561
IRITANI, N.
0823*
IRMONDI, A.R.
1784*
IRMSCHER, J.
0645
IRONSIDE, A.G.
0423*
IRSIGLER, K.
2152, 5234
IRVIN, J.L.
2292, 7537*
IRVINE, W.J.
7275
IRVING, C.C.
0107, 8681
ISAAC, M.
7153
ISASA, F.
1415*
ISAYEV, O.S.
7465
ISAZA, J.
0777*, 0778*, 1637,
1644*, 2134*, 5540
ISDALE, J.M.
2586
ISEBAERT, L.
3713
ISENBERG, J.
1840*
ISHCHENKO, M.I.
1103
ISHIDA, M.
4127*
ISHIGURO, I.
2292
ISHIHARA, A.M.
1491*
ISHIHARA, M.
0878
ISHIHARA, S.
6773*
ISHIHARA, Y.
5575
ISHII, Y.
5532*
ISHIKAWA, F.
0911*, 6479
ISHIKAWA, H.
8008*
ISHIKAWA, K.
6828, 7910*, 7911*,
7916*
ISHIKAWA, M.
6790
ISHIKAWA, S.
0911*, 7558
ISHIMOTO, H.
1874
ISHIMOTO, M.
4897, 5009, 5010,
5320, 5378
ISHIO, N.
6982
ISHIWATA, K.
0813
ISHIYAMA, K.
6556
ISHIZU, H.
6082
ISLAMI, A.H.
3847, 4378, 4385

SMAIL, A.
3767*
SMAIL-BEIGI, F.
2549*
SOBE, Y.
4565*
SOKOSKI, M.
3455
SRAEL, Y.
6439*
SSAAD, H.
6201
SSELBACHER, K.J.
1866, 5580*, 5618*,
7578*, 9095
TINA, L.V.
0908*
TO, H.
1032
TO, M.
7534*
TO, S.
3033*
TO, T.
2367*
TOH, T.
7699
TOIZ, J.F.
7847
TSUNO, Y.
4462
TTYERAH, T.R.
5394
TURRIAGA, H.
4463, 9154
TURRIAGA RUIZ, H.
4438
TZCHAK, Y.
2506*
UCHTMAN, M.
8425
VANESKI, M.
5189
VANOV, P.A.
6011
VANOV, V.A.
5809
VANOVA, M.A.
7365
VANOVA, N.N.
6142
VANYI, J.
5161
VASHKIN, V.T.
5847
VERSEN, K.
6776*
VERSEN HANSEN, P.
6362
VEY, K.
1259
VEY, K.J.
9129
VEY, M.H.
3774
VKOV, V.G.
2829
WABORI, N.
2103, 2394*
IWAI, N.
0752*, 0770, 3820*
IWASAKI, T.
0582*
IWEIBO, I.
0132
IZANT, R.J., JR.
7355
IZARN, P.
5022
IZURIETA, E.M.
7164
IZZO, E.
3836
JAASKELAINEN, A.I.
2251*
JABARI, M.
2628
JABLOKOV, V.P.
1979
JABLONSKA, J.
6648
JABLONSKI, P.
1747, 8315
JACKIEWICZ, Z.
2596
JACKMAN, K.V.
1260
JACKSON, B.M.
3586
JACKSON, B.P.
2710
JACKSON, B.T.
0440
JACKSON, C.D.
6681
JACKSON, F.C.
8430
JACKSON, J.A.
3906*
JACKSON, J.F.
1093
JACKSON, M.J.
1787*
JACKSON, P.P.
6973
JACOB, E.
6375
JACOB, F.
7448
JACOB, G.
6467
JACOBI, I.S.
8190
JACOBS, A.
0934*, 2372*, 4113
JACOBS, B.
0961, 2001, 2192*,
2193*
JACOBS, E.
4331
JACOBS, M.N.
3421*
JACOBS, R.P.
8445*
JACOBSEN, J.
2393*
JACOBSEN, K.R.
0863
JACOBSEN, N.
6629
JACOBSON, F.D.
0703, 2485*, 3842*,
3886*, 4803, 6344,
6498*, 6500*
JACOBSON, G.
5386
JACOBSON, M.J.
3325
JACQUES, G.
1011
JACQUET, N.
9013
JACQUIN, F.
2235
JACQUOT, P.
6483
JADDAD, J.
0464
JADIN, J.M.
0020
JAECK, D.
8148
JAEGER, K.H.
4466
JAFFARI, S.M.H.
2976, 6180
JAFFE, B.M.
1130, 2370*, 6393*,
8506*, 8582*
JAFFE, H.
3059
JAGO, W.V.
5239
JAILLARD, J.
0648
JAIN, I.L.
3599
JAIN, P.K.
6908
JAIN, S.M.
1416*
JAIN, S.P.
3499
JAKAB, L.
4465, 7592
JAKLINSKI, A.
2860
JAKO, J.
0553
JAKOB, G.
0252, 2554, 6601
JAKUBOWSKA, K.
6647
JAKUBOWSKI, A.
6647
JALALI, B.K.
6719
JALAN, K.N.
0496*, 2762*, 3514,
8987*, 8988*
JALLAH, E.M.
2510*
JAMDAR, S.C.
5578*
JAMES, A.E., JR.
7480
JAMES, D.G.
4590, 6125

JAMES I.M.
0533*
JAMES, K.W.
1825*
JAMES, N.J.
8283
JAMES, P.M., JR.
5901
JAMES, T.
5399
JAMES, W.B.
4925
JAMIESON, M.G.
1647*
JAN, J.E.
2845
JAN, M.L.
5913
JANAKI, M.
6896
JANARDHANA RAO, K.
7006
JANCHICH, M.
0337
JANECKI, J.
8016
JANIAKOWA, E.
6919
JANICKI, J.
3622, 4444*
JANNE, J.
8655
JANNUZZI, C.
9127
JANOLIO, O.
1126
JANOS, R.
4356
JANOUT, V.
7620
JANOVSKI, N.A.
8299
JANOWITZ, H.D.
4359
JANSEN, C.R.
3664*
JANSEN, G.R.
5579*
JANSEN, L.M. VAN N.
1797
JANSEN, W.
4131*, 5318
JANSSEN, W.
6422*
JANSSON, G.
4003
JAO, J.Y.
7167
JAQUES, P.
0041*
JAQUES, W.A.
5739, 8798
JARNUM, S.
0403*, 2683*, 2761*,
2784*, 3445*, 5878*,
5886*, 6471, 6880*,
7441*
JAROSLOW, B.N.
3840
JAROSS, W.
4896
JAROSSIN, M.
4353
JAROSZEWICZ, L.
3388*
JASNIEWICZ, Z.
0379
JASONNI, V.
9055
JASPERS, G.
0853*
JAUBERT DE BEAUJEU, M.
0436, 1012, 4956
JAUHIAINEN, K.
1996
JAVETT, S.L.
7430*
JAVITT, N.B.
8312
JAVOR, T.
1022*, 1023*, 6405
JAYSON, M.I.V.
7498*
JEAN-BLAIN, C.
5640
JEANGUYOT, M.TH.
4410
JEDLICKOVA, J.
4373
JEDRYCHOWSKI, A.
4519, 7246
JEDRZEJCZYK, W.
0508
JEDRZEJEWSKI, R.
2362
JEEJEEBHOY, K.N.
1942, 2683*, 2784*,
5499
JEFCOATE, C.R.E.
8525
JEFFAY, H.
7771*
JEFFERIES, G.H.
1859*
JEFFERSON, L.S.
7951, 8672
JEFFERSON, N.C.
0789*, 5521
JEFFRIES, G.H.
5253*, 7707
JELEROVA, J.
5860
JELLINCK, P.H.
7929
JENKINS, D.
2754
JENKINS, M.D.
4690*, 5429*
JENKINS, R.
5521
JENNINGS, J.B.
7777*
JENNISSEN, H.
7120*
JENNY, M.
1038
JENSEN, B.N.
3062
JENSEN, H.AE.
6085
JENSEN, H.E.
1030, 1981, 3475,
5030, 6693*, 8182,
8880*, 8971
JENSEN, K.B.
5878*, 6855*
JERMAN, R.P.
1277
JERSILD, T.
6100, 6857*
JERVIS, H.R.
1150*, 6247, 6672*
JERZY GLASS, G.B.
3339*, 3342*, 4160,
4792*
JESKOVA, Z.
7621
JESSEE, M.T.
3771
JESSEN, O.
6878*
JESSETT, D.M.
0368, 3248
JESSUP, S.J.
7913*
JESUDIAN, G.
2692
JEUNE, M.
5296
JEWSON, D.
4030
JEZDINSKA, V.
2880
JEZKOVA, Z.
0578
JEZOWA, L.
6919
JEZYK, P.F.
0091*, 4838*, 6442*
JHINGRAN, S.G.
1523
JHUNG, J.W.
8173
JIMINEZ, A.
2592
JIMINEZ, G.
3855
JINDANI, A.
6966
JINDRA, A.
2427
JIRMANN, V.W.
0762*
JIRSOVA, V.
1730
JOB, D.D.
0039*
JOBIN, W.R.
0715
JOHLING, S.A.
8201
JOCELYN, P.C.
5576*, 5586*, 8470
JOCHEM, W.
4092*
JODAL, M.
3246, 3258, 4868

LIBRARY U. OF I. URBANA-CHAMPAIGN

JODELET, P.
7608
JODL, J.
8931
JOELSSON, I.
1998
JOFFE, N.
4110
JOFFRE, F.
7270
JOHANN, I.
3092
JOHANSEN, A.
6564, 6857*, 7036*,
7221*, 7434
JOHANSEN, C.
6857*
JOHANSEN, P.G.
3464*, 4329*
JOHANSSON, H.
6914
JOHANSSON, S.G.O.
0817
JOHN, D.W.
6473
JOHN, H.D.
8391, 9052
JOHNS, W.H.
3225, 5486*
JOHNSON, A.E.
8051
JOHNSON, A.G.
5885*
JOHNSON, B.C.
0822*, 4737
JOHNSON, C.L.
7360
JOHNSON, C.M.
1856
JOHNSON, E.A.
0757
JOHNSON, F.R.
6314
JOHNSON, G., JR.
1006
JOHNSON, G.D.
8349*
JOHNSON, H.
5690
JOHNSON, H.R.M.
2558
JOHNSON, J.
0265, 3322
JOHNSON, J.A.
1701*
JOHNSON, J.E.
0295
JOHNSON, J.S.
3828, 4865
JOHNSON, K.L.
7968
JOHNSON, L.F.
3292
JOHNSON, L.R.
0067*, 0801*, 1671*,
2368*, 2375*, 2481*,
3137*, 6397*, 7865*
JOHNSON, M.G.
6815
JOHNSON, R.B.
5687
JOHNSON, R.C.
6507
JOHNSON, R.K.
4708*
JOHNSON, S.E.
8419
JOHNSON, V.
5773
JOHNSON, W.C.
2793
JOHNSON, W.D.
7388, 7389, 8111
JOHNSTON, D.
1114*
JOHNSTON, D.D.
2498*
JOHNSTON, G.S.
1805*, 4032, 7015
JOHNSTON, I.D.A.
2581*
JOHNSTON, I.R.
0867
JOHNSTON, J.M.
8503*
JOHNSTON, P.W.
8117
JOHOW, F.
0676
JOINER, P.D.
1646*
JOLLY, M.
9274, 9275
JOLY, J.C.
8371*
JONAS, K.C.
0276
JONCAS, J.H.
7610
JONDERKO, G.
3882
JONDORF, W.R.
4708*, 8624*
JONEK, J.
8406
JONES, A.E.
1805*
JONES, A.L.
5417*
JONES, A.M.
3764
JONES, C.R.
5078
JONES, E.A.
1694*
JONES, F.A.
0399, 3395, 8224
JONES, J.H.
0399, 1293*, 4028
JONES, J.S.
4344
JONES, K.L.
3649*
JONES, P.F.
0352
JONES, R.
1179
JONES, R.F.C.
7414*
JONES, R.L.
0927
JONES, R.O.
7815
JONES, R.S.
8619*
JONES, T.
7082
JONES, T.M.
7947
JONES, V.F.
7009
JONES, W.M.
3354, 3355
JONNIAUX, G.
2059
JORDAN, G.L., JR.
1188, 3518
JORDAN, R.H.
8717
JORDAN, R.H., JR.
2756, 4130*
JORDANA, R.
1587, 4284
JORDANOV, J.
1051
JORFEN, A.R.
0679
JORGE, A.
0238
JORGE, C.S.
0593
JORGENSEN, M.
6880*
JORGENSEN, T.G.
1175
JORI, A.
7190
JORI, G.P.
2488
JORNVALL, H.
5444
JOSE, R.G.
5377
JOSEPH, D.
2403*
JOSEPH, R.P.
1447
JOSEPHSON, S.
1226, 1252, 8282
JOSHI, H.
0712
JOSHI, V.C.
5423*, 5441*
JOSI, G.
4119
JOSKE, R.A.
3566, 9150*
JOSLYN, M.A.
7076
JOSS, E.
5959
JOSSERAND, C.
4642, 5340
JOST, A.
5026, 9032

JOST, J.P.
1710*, 3941*
JOSZEF, K.
0331
JOUFFRE, C.
1501, 6920
JOUVE, P.
6547
JOVANICH, M.
0337
JOVANOVIC, B.V.
2555
JOYCE, B.K.
9208
JOYSEY, V.C.
1583*
JOZSEF, T.
4356
JUBIZ, W.
7162
JUCHAU, M.R.
7110*
JUCKER, A.
4948
JUDAH, J.D.
1565*, 3163*
JUDD, D.R.
1130, 1136
JUEISTMAN, M.
0226
JUHL, E.
3419*, 5865, 6888,
6890, 6891, 6899,
6900
JUIF, J.G.
1977
JULIAN, J.
3218
JULIEN, C.
9010
JULKUNEN, H.
4578
JUNEMANN, A.
8098
JUNG, F.
8345
JUNGALWALA, F.B.
2424, 4820*
JUNGBLUTH, H.
8324*
JUNGERS, P.
9168
JUNGHANNS, K.
2011
JUNGST, B.K.
0561
JUNOD, J.M.
1174
JURAIN, O.
1248
JURGENSEN, J.C.
6064
JURKOVIC, M.
0303
JUSCZYK, J.
2878
JUSKIEWENSKI, S.
2617, 8795
JUSKO, W.J.
3099*, 7068*
JUSSILA, J.
0356*, 2693, 3098*,
3455
JUSTO, J.R.
0510
JUTIN, A.I.
0997
JUUL, A.H.
7894*
JUVARA, I.
0672, 1237
KABENO, H.
5547
KABRAWALA, V.N.
7637, 8377
KABZA, R.
4337
KAC, S.
1289
KACHELHOFFER, J.
5614*
KACKA, I.
1543
KACZMAREK, M.
4544
KADISH, U.
4891*
KADLECOVA, O.
0949*, 9040*
KADOKAWA, T.
3974, 4461
KADOWAKI, M.
8632*
KADYMOV, SH.P.
4479
KADYROV, U.Z.
8603
KAGAN, I.G.
7249
KAGAN, T.R.
2461
KAGAN, Y.L.
5727
KAGAN, YU.S.
8339
KAGNOFF, M.F.
4791*
KAHAN, J.
3267*
KAHANA, D.
6619
KAHL, F.
8842
KAHL, G.F.
4830*
KAHLERT, F.
0529*
KAHN, S.R.
5207
KAIJSER, K.
4253
KAIJSER, L.
3495*
KAINADAU, O.
0704
KAIRIS, M.M.
421
KAISER, G.
5959
KAISER, S.C.
0110
KAJUBI, S.K.
1199, 6524
KAKEMI, K.
3663, 5477*
KAKHARBEKOV, K.K.
3675
KAKIMOTO, S.
0753*
KAKISU, E.S.
0089
KAKULAS, B.A.
0848*
KALANT, H.
7577*, 7888*, 7971
KALASHNIKOV, S.A.
7669
KALCHENKO, I.I.
3413, 8885
KALDOR, J.
4473*, 8347*
KALICINSKI, Z.
0382
KALIDAS, C.
6913
KALIMA, T.V.
6501*
KALINKE, H.
8389
KALITEEVSKY, P.F.
1164
KALLEN, R.J.
3754
KALLENBERG, A.
6574
KALLMEYER, J.C.
3647
KALOKERINOS, J.
2543*
KALOUD, H.
9067
KALOUSEK, G.
8260
KALTIALA, E.H.
1950
KALYAGINA, V.P.
1295
KAMADA, A.
2327*
KAMAKIN, N.F.
7096
KAMALOVA, I.A.
1309
KAMAT, G.R.
2226
KAMAT, R.A.
1531*
KAMAT, S.A.
0697
KAMEDA, H.
0224, 6132
KAMEI, Y.
5435*
KAMENCHIK, M.G.
5804

KAMENETSKY, S.I.
7671
KAMENEVA, S.I.
1039
KAMENOV, G.
1247
KAMIETH, H.
5692, 8760
KAMINSKI, D.L.
0945*
KAMISHIKA, K.
6024
KAMOUN, A.
4934
KAMPELMACHER, E.H.
1797
KAMPFF, C.
7436*
KAMPMANN, H.
7231
KAMPSCHMIDT, R.F.
7165
KAMYNINA, R.F.
3534
KANANI, S.R.
8497
KANAUCHI, S.
7278
KANAYAMA, R.
0101*, 8638*
KANDA, M.
4462
KANDALAFT, S.
2923
KANDEL, M.
7131*
KANEDA, M.
6116*
ANEKO, A.
0729*
ANEKO, H.
3974, 4461
ANEKO, K.
1351*, 8910
ANEKO, M.
6829, 6863
ANEMANAKU, K.G.
2877
ANEVSKAYA, M.G.
6102, 6104
ANG, J.K.
0643
ANISCHEV, P.A.
8043
ANO, K.
0001*
KANO, M.
4979, 6592
KANOH, H.
7761*
KANSHIN, M.N.
7229
KANTARIYA, V.V.
2967
KANTER, I.F.
8986
KANTOR, F.
6927, 8576
KANTROWITZ, P.A.
3317
KAPANDJI, M.
5322, 8097
KAPARULINA, L.T.
1243, 6144
KAPITAN, V.P.
1280
KAPITULNIK, J.
6358*
KAPLAN, E.S.
2919
KAPLAN, H.J.
2098
KAPLAN, J.
1735
KAPLAN, I.D.
1331
KAPLAN, M.M.
3661*
KAPLAN, M.O.
0131, 1726
KAPLAN, S.M.
4247*
KAPOOR, S.C.
3761
KAPPAS, A.
0839*, 2274*
KAPPELER, H.
4948
KAPRAL, W.
9250
KAPULER, I.I.
5935
KAPUR, R.M.L.
2834
KAPUR, M.
5868
KARABASEV, R.
1050
KARACADAG, S.
0782*, 8003*
KARAEV, M.A.
1538
KARAGEORGIOU, C.
6388, 6389
KARAKI, H.
2332*, 7475
KARAMISEV, IV.
1529
KARANI, H.J.
1129
KARASAWA, H.
8726
KARASAKA, T.
9217
KARASHIMADA, T.
9218
KARAVAS, N.
1469
KARCZ, D.
0281
KARE, M.R.
0810*
KAREY, N.F.
0611*
KARGASHIN, I.A.
2787
KARHUNEN, P.
6692
KARIAGINA, E.I.
7287
KARIKA, J.
3091*
KARIYA, Y.
5954
KARK, A.E.
6151
KARK, P.M.
6892
KARL, H.J.
6739
KARLEWICZ, R.
3760
KARLISH, A.J.
0651
KARLSSON, B.V.
0728*, 3644
KARLSSON, H.O.
2413*
KARMI, G.
0642
KARMODY, A.M.
1132
KARNIATZKI, S.
4041
KARNOVSKY, M.I.
5430*
KARON, M.
2038*
KARPATI, G.
1451
KARPENKO, V.S.
9232
KARPMAN, L.M.
7648
KARTASHEV, S.Z.
2737
KARVONIDI, P.G.
7376
KASAHARA, K.
0072
KASAHARA, S.
5815
KASAI, M.
2062, 3588
KASATKINA, Z.N.
7732
KASEDA, H.
3025*
KASENTER, A.G.
0935*
KASER, O.
4399
KASHGARIAN, M.
2108*
KASLIWAL, R.M.
0712, 7017
KASPER, H.
5143, 5881, 6732*,
8564
KASTNER, D.
8345
KASUGAI, T.
0293, 4144, 4930,
4991

KATAEVA, G.A.
0237
KATAGIRI, M.
7558
KATAYAMA, H.
2181
KATAYEVA, G.A.
1156
KATER, F.
6869
KATER, R.M.H.
2682*, 7526*
KATIYAR, R.C.
1523
KATO, H.
6786
KATO, J.I.
6176
KATO, K.
6435*, 7157*
KATO, R.
2290, 3954*, 5560*,
7123*, 7960, 7947,
8630*
KATO, T.
1937, 6169, 8932
KATO, Y.
4856, 7158*
KATRAK, B.H.
2226
KATSUBE, Y.
8009*
KATSUI, T.
6823
KATSUMI, M.
5954
KATSYURA, K.A.
0362
KATTERMANN, R.
4472, 5992*, 8318*
KATUNUMA, N.
8527
KATYAL, S.L.
3934*
KATYARE, S.S.
6291*, 7186
KATZ, B.
5008
KATZ, J.
6941*
KATZ, N.
0711*
KATZ, R.
9130
KATZ, S.
6988, 7582, 7593
KAUFER, C.
1388, 4124, 5676
KAUFMAN, L.
4804
KAUFMANN, H.J.
6935*
KAUFMANN, N.A.
6358*
KAUFMANN, W.
3976
KAUL, R.K.
7589
KAUN, K.K.
1349*
KAUNG, D.T.
1149
KAVETSOS, G.
6853
KAVIN, H.
5680, 8011*
KAVOUSSI, K.M.
1097
KAWABE, S.
5175*
KAWADA, T.
8910
KAWAI, K.
0269*, 2350, 2542,
2616, 4172, 6565,
7342
KAWAKAMI, M.
2224
KAWAMURA, T.
2459
KAWAMURA, Y.
3572
KAWANO, N.
8303
KAWANO, Y.
2275
KAWASAKI, S.
2672
KAWASHIMA, T.
8087*
KAWCZYNSKI, ST.
2963
KAY, N.P.M.
7470
KAY, R.
4329*
KAYA, K.
1686
KAYABALI, I.
6887
KAYE, D.
0618
KAYE, M.D.
0788*, 1112*, 3265*
KAYE, S.
1545
KAZAKOV, V.N.
8787
KAZANSKY, D.A.
7391
KAZARIAN, K.K.
5900
KAZDALI, A.
4234, 4993, 8893
KAZMERS, N.
6972, 8405
KAZUNO, Y.
4006
KEAN, B.H.
0477, 1534
KEAST, D.
1453*, 1564*
KEATS, T.E.
2530, 3326, 3470,
8191
KEATS, W.L.
5913
KECLIK, M.
6939*
KEDRIF, N.C.
1218*
KEDROVA, E.M.
2463
KEDZIERSKA, L.
0913*, 5512*, 5515
KEEFFE, B.M.
5303
KEEL, H.J.
2516, 6570, 8774
KEFLIK, M.
4528
KEENAN, T.M.
1615, 2297, 4695*
KEET, M.P.
1215*
KEHOE, F.L.
4926
KEIBL, F.
7152
KEINOWITZ, R.I.
1212*
KEISER, G.
4260
KEITLINA, F.J.
7691
KEKKI, M.
2900
KEKOMAKI, M.
5211
KELADA, F.S.
2255
KELEMEN, F., JR.
4190
KELEMEN, L.
0394
KELL, H.H.
9251
KELLER, H.L.
8309
KELLER, J.
6421*
KELLER, R.
4667
KELLER, R.J.
8634
KELLERHALS, B.
9816
KELLETER, H.
8846
KELLEY, M.
1134
KELLOCK, T.D.
8180*
KELLOGG, C.S.
1255
KELLOGG, T.F.
5492*
KELLY, G.F.
2451
KELLY, K.A.
0043*, 5514*
KELLY, M.H.
3036*
KELLY, M.P.
0110

ELLY, T.P.
2933
ELSEY, C.F.
3043
ELTNER, R.M.
8839
EMP, M.L.
6613*
EMPF, P.
5916
EMPTER, M.
5096
ENDALL, J.A.
4995
ENDALL, M.J.
7070*
ENNEDY, M.
7704
ENNEDY, R.A.
7571
EINES, E.
2484
ENT, D.C.
3702*, 8487.
ENT, G.
0735*
ENT, S.P.
6310*
ENT, T.H.
1259, 1300
ENWORTHY, P.
2652*
ENYERES, J.
1652
EOGH, K.K.
3602
EPLER, D.
2859*, 6845, 8376*
ERA, K.
8321*
ERESELIDZE, J.
3718
ERESELIDZE, T.S.
7723
ERHULAS, A.A.
1316
ERIMZADE, K.G.
4479
ERKHOVEN, P.
4808, 8856, 9252
ERMANI, M.H.
4787*
ERNAREC, K.J.
5017
ERN, D.
0743*
ERN, E.
2781, 5060
ERN, F., JR.
1153*, 3444*, 4249*
ERN, H.F.
0743*
ERN, I.R.
7414*
ERNBAUM, S.
6568, 9230
ERNEN, J.
6493
KERNER, J.
2816*
KERPEL-FRONIUS, E.
8637
KERR, G.R.
6968
KERR, J.F.R.
1397*, 6824*
KERROS, N.
3517*
KERSCHBAUMER, F.W.
5447*
KERSON, L.A.
2443
KESAVA RAO, K.V.
8659
KESNER, L.
0893
KESNER, L.F.
0678
KESSLER, E.
4977*
KESSLER, J.I.
2338*, 4359, 8685*
KESSLER, M.
8596
KESTENS, P.J.
8925, 9073
KETCHAM, A.S.
3519, 3527, 3714
KETTERER, R.
2406*
KETTNER, W.
8153, 8332
KEUL, J.
0373
KEUSCH, G.T.
2685*, 2689*
KEW, M.C.
1347*
KEWENTER, J.
3506*
KEYMOLEN, P.
3051
KEYSER, E.
9108
KEZDY, F.J.
3843
KHACHADURIAN, A.K.
0541
KHADZHIBAYEV, M.
7673
KHAIRALLAH, F.A.
6438*
KHALIKOV, T.
1045, 1102
KHALKINA, R.I.
7595
KHAMIDOV, G.K.
7615
KHAN, A.
7413*
KHAN, A.R.
1391
KHAN, I.H.
2653
KHAN, M.
4568*
KHAN, M.S.
0028*
KHANDEKAR, J.D.
2130
KHANNA, D.N.
3234
KHANNA, I.M.
7577*, 7889*, 7971
KHANNA, M.M.
7590
KHANNA, M.
7643*
KHANRA, S.R.
4534
KHANSON, Y.P.
2462
KHARATIYAN, A.M.
7497, 9171
KHASMAN, E.L.
0140
KHASPEKOV, G.E.
7472
KHASSIS, S.
9123
KHATIBNIA, S.
6951
KHATRI, I.M.
2145
KHAYYAL, M.T.
1555
KHAZEI, A.M.
3571, 6738, 6852,
7728
KHAZHINSKAYA, G.A.
7472
KHILNANI, M.T.
8836
KHLEBNIKOVA, I.M.
8355
KHLOPOV, N.A.
7373
KHO, E.
7726
KHO, K.M.
5891, 7448
KHO, L.K.
3753
KHODYKIN, A.V.
8336
KHOKHANI, R.C.
2152
KHOKHLOV, N.F.
6144, 7223
KHOLIAVKO, V.K.
7332
KHOLIEF, T.S.
4567*
KHOMERIKI, A.A.
2961
KHOO, O.T.
5157
KHOVANSKAYA, M.G.
8286
KHRAMOV, V.A.
6154
KHURI, S.
6585
KIANI, R.
0656

KIDD, P.
3025*
KIELENS, R.
7212*
KIEHECKER, D.
6063
KIESEWETTER, W.B.
4802, 7469, 8192
KIESSLING, K.H.
0932, 2391*
KIEFER, B.
7349
KIHARA, T.
0575
KIJEWSKI, R.
6709
KIKODZE, S.L.
3005
KIKOT, P.A.
2913
KIKOT, V.A.
2912
KILBOURN, J.P.
0500*
KILCOYNE, R.F.
3480
KILLEMA, I.A.
7547
KILEJIAN, A.
3015
KILHAM, L.
7005*
KILKOWSKA, K.
0169, 3853
KILPATRICK, F.P.
2712
KILPATRICK, Z.M.
1068
KIM, C.Y.
7526*
KIM, I.C.
5929
KIM, K.S.
0009*
KIM, H.C.C.
6047, 8462
KIM, Y.H.
3221
KIM, Y.J.
0474
KIMBALL, H.W.
1336
KIMBERG, D.V.
5431*, 7069*
KIMENIS, A.A.
7867
KIMMICH, G.A.
7825*, 7982*
KIMURA, A.
6477
KIMURA, C.
6178
KIMURA, I.
1640, 3110
KIMURA, J.
1937
KIMURA, K.
0302, 3030*
KIMURA, N.
4505*
KIMURA, S.
4767
KIMURA, T.
3863, 4749, 5477*
KIN, T.
6516*, 8004*
KINDLER, G.
0739*
KINDLER, H.
1396
KINDLER, U.
8007*, 8779
KING, D.W.
3068
KING, J.E.
3936*
KING, T.C.
0998, 1408
KING, T.E.
0841*, 4822*
KINLEY, J.G.
2721
KINNEY, J.M.
3739
KINNEY, T.D.
3797*
KINNMAN, J.
1842
KINOHIRA, K.
8910
KINOSHITA, H.
7054*
KINOSHITA, J.
4593, 5787
KINTZONIDIS, D.
2172
KIPFER, R.K.
2418*, 3201, 3943
KIPNES, R.S.
5424*
KIRAN, O.
2608*, 4216*
KIRIAKOU, K.
9255
KIRILENKO, M.P.
3009
KIRIMOTO, K.
6828
KIRK, R.H.
3744, 5027, 6234
KIRKEGAARD-JENSEN, U.
1792, 3738
KIRKPATRICK, J.A.
1992
KIRKPATRICK, J.R.
0934*
KIRKSEY, A.
6441*
KIRPATOVSKY, I.D.
6006
KIRSCH, W.
5633
KIRSNER, J.B.
0498*, 2030, 2765,
3435*, 4890*, 5654*,
5780, 6534, 6734,
7416, 8218, 8921*
KIRSNER, J.K.
7499*
KIRTLEY, J.A.
1142
KIRYAKOV, Z.
7398
KISCHINEFSKY, J.S.
0684
KISELEVA, A.F.
1124, 2640
KISELOW, M.C.
5913
KISHI, T.
7993*
KISIELESKI, W.E.
3926
KISO, Y.
3245*
KISS, B.
1022*, 1023*
KISS, I.S.
1504*
KISS, J.
5750
KISSEL, F.
8712
KISSEL, P.
5677
KISSELEV, L.
1725
KITAHARA, S.
1663
KITAHARA, T.
5683
KITAMURA, O.
0059
KITANI, K.
3249
KITTLE, C.F.
5359
KITTLICK, P.D.
7975, 7976
KIUCHI, S.
3320
KIVIKANGAS, V.
6692
KIVILAAKSO, E.
6503, 6504
KIYONARI, H.
6555
KIZER, D.F.
1346*, 7150*
KJELDSEN, K.
0413
KLAASEN, C.D.
7134*
KLADOR, J.
4014*
KLAUR, S.
4605
KLASSEN, G.A.
1451
KLASSEN, K.P.
5742
KLATSKIN, G.
0536*, 2411*
KLEBANOFF, G.
3719

LECKNER, F.S.
2969
LEIMENOVA, I.I.
8365
LEIN, H.J.
0762*, 5367, 8105,
8594
EIN, N.C.
7019, 7707
LEIN, R.
2970
LEIN, S.
0600
LEIN, U.
9053
LEIN, U.E.
8940*
LEINEKE, J.
8608*
LEINIG, H.
7789*
LEINKNECHT, D.
9168
LEINSMITH, L.J.
4718
LEMASHEV, I.S.
7649
LEMM, G.
6841
LEMPA, J.
3917
LEMS, H.
6238
LETSKIN, S.Z.
1041
LEVAY, L.M.
3202
LIMAN, A.
1398*
LIMAN, M.R.
8464
LIMENKO, G.A.
1537
LIMENKO, S.M.
0015*
LIMENSKAYA, I.V.
7351
LIMESCH, K.
0344
LIMKOVICH, I.G.
8890
LINGE, O.
9103
LINGER, R.
0819*
LINGER, W.
0141, 7898*
LINGLER, E.L., JR.
6127
LINK, F.
0880
LIPSTEIN, F.A.
2950*, 5890, 5894
LOBUKOWSKI, C.J.
6270
LODCHENKO, N.N.
6064
LOETZEL, K.
4663*
KLOPFER, M.
3660
KLOPPER, P.J.
2570, 3334
KLOPSTOCK, R.
6579*
KLOSE, W.
6457
KLOTZ, A.P.
4017*
KLOTZ, H.P.
8383
KLUCK, H.
9151*
KLUCK, J.J.
1520
KLUG, W.
8731
KLUGE, T.
2585, 9276
KLUNICHENKO, A.M.
5904
KLYACHKO, V.R.
6040
KLYUCHIKOV, V.N.
7332
KNAPP, R.N.
1149
KNAPP, W.
4244
KNAUER, C.M.
2562
KNECHTGES, T.C.
8144
KNETSCH, A.
8759
KNICK, B.
9069
KNICKEL, A.
2911
KNIERIM, F.
1815
KNIGHT, P.L.
5492*
KNIGHT, R.
8497
KNILL-JONES, R.P.
2126, 5882
KNIPPER, A.
4943
KNOBIL, E.
6486
KNOBLAUCH, M.
6805
KNOCHELMANN, R.
8861
KNODELL, R.G.
6412*
KNOP, J.K.
5451
KNOTHE, H.
6511, 6530
KNOX, W.G.
2673
KNUDSEN, D.F.
1952
KOBARI, K.
4576*
KOBAYASHI, J.
0222, 3360, 5788
KOBAYASHI, K.
4726, 4991, 6112*
KOBAYASHI, M.
2132*, 5787, 7107*
KOBAYASHI, S.
0293, 3350, 4890*,
5654*, 5780, 6284*,
6519*, 6534, 6600,
8118
KOBAYASHI, T.
6106
KOBAYASHI, Y.
5547
KOBLER, H.
0907*
KOBYLCHAK, I.M.
5871
KOBYLIATSKY, I.T.
5975
KOCAK, U.
7082
KOCANDRLE, V.
5359
KOCH, D.
8007*, 8779
KOCH, D.F.
1390
KOCH, G.
8946
KOCH, H.
6530, 8109, 8581*
KOCH, O.R.
2835
KOCH, W.
0181*, 4943
KOCHAKIAN, C.D.
0886
KOCHEMASOVA, N.G.
7084
KOCHNEV, O.S.
1328
KOCIAN, J.
0035
KOCIANOVA, J.
2523
KOCK, N.G.
0790*, 1790*, 2483*
KOCMIERSKA-GRODZKA, D.
7988
KODAIRA, S.
7322*
KODAMA, M.
2380
KODAMA, Y.
7928
KODICEK, E.
0916, 0920, 1729*
KOEBERLE, J.
8675
KOENIG, C.
4751
KOENIG, H.
6338, 8756
KOEPPE, P.
6651
KOEPPE, R.E.
8627*

KOERKER, D.J.
3938*
KOFF, R.S.
7578*
KOFLER, E.
2415*, 4861, 7959
KOGURE, K.
6610*, 8088*
KOH, W.H.
0643
KOHATSU, S.
2500*, 7874
KOHEIL, A.
7866*
KOHLER, G.
5018
KOHLER, J.J.
0504, 2207, 2994,
5007, 6701, 7654*,
8103
KOHLI, Y.
7342
KOHN, P.G.
4760*
KOHN, R.
1493
KOHNO, T.
4157
KOHOUT, F.
7361
KOHOUT, M.
5584*
KOHOUTOVA, B.
5534*
KOI, M.
6745
KOIDE, A.
0815
KOISS, I.
3891*
KOIZUMI, H.
4927
KOIZUMI, T.
2103, 2394*, 4819*
KOJECKY, Z.
5130, 5132
KOJIMA, A.
2225
KOJOLA, V.B.
0827*
KOKATNUR, M.G.
2407*
KOKOT, B.
0683
KOLB, H.J.
3095*
KOLDOVSKY, O.
1730, 4864*
KOLF, W.
1470
KOLESAR, J.
4177
KOLGANOV, A.V.
2872
KOLHOFF, H.
5642
KOLIG, G.
4941
KOLLMEIER, H.
5657*
KOLNER, D.YU.
6093
KOLODNY, M.
6235
KOLOKOLOV, A.P.
6001, 8388
KOLOMIICHENKO, M.I.
7401, 9181
KOLOMINA, I.D.
7366
KOLOMINSKY, J.
4529
KOLOTOVKIN, P.S.
7602
KOLTSOVA, N.V.
7734
KOMAR, V.F.
2462
KOMARKOVA, O.
2071, 8235
KOMAROV, A.S.
5709
KOMATSU, T.
9217
KOMATSU, Y.
3237
KOMENDA, S.
1678
KOMII, N.
2672, 7700
KOMIYAMA, S.
9217
KOMMERELL, B.
0564, 2854, 4932
KOMO, H.
6828
KOMOGORTSEVA, G.A.
7252
KOMORN, H.J.
7555
KOMOTO, S.
6294*
KOMAR, M.R.
2058
KONCHALOVSKAYA, N.M.
8336
KONÉZ, J.
4518
KONDI, A.
2528
KONDO, K.
5573*
KONDO, S.
5547
KONDO, T.
0192*, 2078, 6519*,
6553, 6554, 6559,
7177
KONDRATENKO, G.P.
7712
KONECKI, J.
0023
KONGSAMRAN, S.
2220
KONIG, L.
5265
KONIGSTEIN, M.
8566
KONIJN, A.M.
6410*
KONISHI, G.
2279*
KONISHI, R.
3863, 5477*
KONNO, T.
2063, 3440*
KONO, H.
8633*, 9113
KONO, R.
0924*
KONOPLIA, P.P.
8150
KONOVALOV, N.I.
2524
KONOVALOVA, L.A.
0900
KONRAD, D.
8274
KONRAD, GY.
0394
KONRAD, R.M.
2632*
KONSISTORUM, A.V.
7473, 7492
KONSTANTINOV, B.
1053
KONSTANTINOVA, B.
3509*
KONTSEVA, N.G.
6117
KONTUREK, S.
0075, 0270*, 2385
KONTUREK, S.J.
3903*, 6411*, 7861
KONVOLINKA, C.W.
2986
KONYUSHKO, S.D.
7199
KOO, N.C.
0065*, 0066*
KOOLMAN, J.
0155, 4830*
KOOP, C.E.
2564, 2652
KOPEC, Z.
2363, 4813
KOPELOVICH, L.
3042
KOPPIKAR, S.V.
3841, 3937*
KORABELLNIKOV, I.D.
7495
KORB, G.
5066, 6297*, 9096
KORBER, M.
2805*
KORDAC, V.
2036*
KORDOBA, M.T.
2580
KORENEV, M.N.
3379
KOREPANOV, A.M.
6161

ORETZ, S.
6447*
ORFEL, Z.
0391
ORKAMPF, I.V.
1021*
ORN, R.J.
6858*
ORNER, A.
7149*
ORNGUTH, P.J.
3798*, 5479*
OROLIJA, P.
2964
OROTKO, G.F.
0074, 5551, 7096
OROTKORUCHKO, V.P.
3567, 7974
ORSHUNOV, A.P.
7375
ORTAS, J.
4544
ORTEV, A.I.
7619
ORTZ, A.B.
0956
ORZON, I.K.
2747
OSHIRA, K.
6765*
OSIN, D.
2120*
OSITCHEK, R.J.
8309
OSKINEN, R.
1899
OSLOWSKA, K.
0169, 3904*
OSONOGOV, L.F.
5724
OSOV, V.A.
3412
OSSAK, J.
0683
OSTASH, G.A.
5710
OSTER, K.H.
6889
OSTERING, H.
6142
OSTERLITZ, H.W.
5517*
OSTERS, J.
8769
OSTEVA, A.K.
5714
OSTICH, K.
0337
OSTROMINA, A.P.
7168
OSTYUK, F.F.
7396
OSYAK, E.P.
3591*
OTAKE, Y.
7107*
OTAKI, A.
6777*, 6848, 7580*
KOTCHER, F.
4659*, 5403, 7014
KOTELNIKOVA, V.I.
5524
KOTHANDARAMIAH, K.
7006
KOTHE, W.
8859
KOTIGER, YA.S.
6146
KOTLORZ, H.
1396
KOTOV, I.A.
6039
KOTT, E.
8380
KOTT, I.
1139, 8380
KOTTKE, R.A.
7184
KOTTMEIER, P.K.
2334*, 5000
KOUGL, D.
0266
KOURANY, M.
1508*, 1525*
KOURIAS, B.
9282
KOURIAS, F.
0686
KOUPLAS, B.
0686
KOUROUNAKIS, P.
3113
KOUSIOUS, CH.
0686
KOUTRAS, P.
1826*
KOUTSIKOS, S.
6662
KOUTSOUKOS, A.
9169
KOVACS, E.S.
1592
KOVACS, K.
3809*
KOVALCHUK, G.A.
5872
KOVALENKO, M.I.
3089
KOVALENKO, V.A.
7766
KOVALEV, M.M.
2913
KOVALSKAYA, K.S.
7557
KOVSHIKOV, V.S.
2920
KOVTUN, K.A.
7429
KOWALCZIK-ROSZTEJN, M.
0103*
KOWALCZYK, J.
7377
KOWALCZYK, M.
0632
KOWALEWSKI, K.
1111*, 3910, 4183*,
7866*
KOWAL-GIERCZAK, B.
1471
KOWALSKI, A.
2647
KOWALSKI, F.
4626
KOWALSKI, R.
2988
KOWLESSAR, O.D.
2942*, 4247*, 5085,
8003*
KOZA, J.
7620
KOZAK, G.
5499
KOZANECKA, A.
2595
KOZHARSKY, V.V.
7616
KOZHEVINOV, A.I.
5709
KOZIURA, J.
0704
KOZLOV, I.Z.
1331
KOZLOV, V.I.
7997
KOZLOVA, Z.P.
5852, 6117
KOZLOWSKA, K.
8585*
KOZU, T.
6517*
KOZUKA, S.
8305
KRADINOV, A.I.
7352
KRAEGEN, E.W.
3155*
KRAEV, E.
1049
KRAFT, A.P.
3520
KRAFT, M.
3062, 8860
KRAFT, S.C.
0903*, 2311, 7985*
KRAFT-KUNZ, J.
0992, 1138
KRAG, E.
5720, 5819
KRAINES, R.
6454*
KRAJINOVIC, S.
3739, 7380
KRAKAUER, K.
7109*
KRAL, Z.
4528
KRALIK, J.
1664, 4305, 5751,
6380*
KRAM, R.
3051
KRAMER, F.O.
1321
KRAMER, G.
0880

KRAMER, M.F.
0809*
KRAMER, R.
7076
KRAMER, S.
2034*
KRAMME, U.
9156
KRANZ, D.
6042
KRANZLER, J.K.
8747
KRASHENINNIKOV, O.A.
8454
KRASKER, J.
5665
KRASNA, I.
4266*
KRASNA, I.H.
5945
KRASNER, A.U.
3731
KRASNICKA, Z.
8272*
KRASNIUK, F.P.
0328
KRASNOGOLOVETS, V.N.
1510, 2748
KRASNOKUKI, D.
7164
KRASNOW, S.
3496
KRASSNER, J.
2037*
KRASSNITZKY, O.
2962, 4945
KRASZNAI, A.
8576
KRATOCHWIL, A.
4892*
KRATZER, G.L.
5936, 8198
KRATZSCH, K.H.
8839
KRAUS, H.
8741
KRAUSE, R.F.
1783*
KRAUSE, U.
3406, 5386
KRAUSZ, M.
1022*, 1023*
KRAVVIC, H.
8380
KRAUCZYNSKI, K.
2947*, 5454
KRAWITT, E.L.
3621, 7114*
KRC, J.
3433
KRCOVA, V.
3433
KREBBER, K.
4861
KREBS, H.A.
1589, 1775, 1931*,
3942, 4733, 7903*
KREBS, J.S.
4878

KREEK, M.J.
6783
KREEL, L.
0229, 1801*, 6526,
7272
KREIS, S.
4434
KREISLE, M.F., JR.
1279
KREMER, K.
8076
KREMER, M.
8488
KREMER, R.M.
7355
KREMLI, S.M.
8286
KRENDAL, A.P.
0240, 7207
KRENN, R.
8840
KRENTZ, K.
2952
KRESSMANN, P.
5106, 5123
KRETCHMER, N.
3035*
KRICHEVSKY, Y.A.
7501
KRIEBEL, G.W.
0903*
KRIEBEL, G.W., JR.
2311
KRIEDEMANN, F.
0981
KRIEGER, J.
4526*
KRIPPAEHNE, W.W.
2342*
KRISHNA DAS, K.V.
3717
KRISHNAIAH, K.V.
3205
KRISHNAMURTHY, K.A.
6257
KRISHNAN, P.S.
4728, 5453, 7969
KRISHNASWAMI, A.K.
3718
KRISS, N.
3348
KRITCHEVSKY, D.
5565*
KRIVINE, J.M.
5159
KRIVIT, W.
3498
KRIVOISIC, I.
1440
KRIVONOGOV, J.B.
5755
KRIVONOSOVA, K.I.
7731
KROGER, H.
7120*
KROKOWICZ, A.
2963
KROLEVETS, I.P.
2551, 5755

KROLIKOWSKA-PRASAL, I.
0022, 3989
KRONBERGER, L.
0992, 1073, 1138,
5024
KRONBERGER-SCHONECKER, D
4295
KRONBORG, O.
0339*, 0343
KRONDI, A.
7846
KRONE, C.L.
1083, 6737
KRONENBERG, H.
6073
KRONER, H.
3040
KRONERT, H.
7932
KROOK, L.
1758
KROOK, S.S.
3356
KROON, A.M.
3933*
KROPP, R.
8324*
KROSEGK, G.
4981
KRUBWA, F.
8439
KRUCINSKA, J.
1476
KRUEGER, K.C.
6533
KRUEGER, R.P.
6018
KRUG, F.
4255
KRUGER, H.
1214*, 5384, 5385
KRUGER, W.
6164
KRUGMAN, S.
5699
KRUH, J.
7800
KRULL, G.H.
2210
KRUMDIECK, C.L.
8540
KRUMHAAR, I.
2112
KRUPEY, J.
1219*, 7456*
KRUPNIKOVA, E.Z.
1370
KRUPP, I.M.
0718, 2261
KRUS, S.
4425
KRUSCHOV, N.M.
7463
KRUSCHOVA, V.M.
5843
KRUSHAK, D.H.
3639
KRUSKEMPER, H.L.
0560

RUTSKIKH, E.V.
1122
RYLOVA, N.P.
6271
RYLOVA, O.M.
8355
RYPSIN-EXNER, K.
2152, 5234
RYZHANOVSKAYA, I.I.
5850
RZYZOWSKA-GRUCA, S.
3808*
SIAZKIEWICZ-SZAPIRO, M.D.
0773
UBACKI, J.
0023
UBASOV, I.G.
5712
UBAT, K.
4229
UBECOVA, D.
4620
UBIN, R.H.
4017*
UBISTA, T.P.
2718
UBLER, W.
7851
UBO, T.
4137
UBO, Y.
2380
UCERA, J.
3634
UCHIBA, K.
4840*
UCHII, M.
6366
UCHINO, Y.
6341
UCIC, S.
4155
UCISEC, A.
4155
UDOH, Y.
7699
UDRMANN, J.
2523, 4310, 8210,
8220
UFF, E.L.
5177*
UFFER, F.
1191, 2052
UGA, H.
5470
UGLER, H.W.
3585
UGLER, S.
4215, 5821, 8783
UHL, I.
8274
UHLMANN, G.
0675
UHLMANN, N.
4213, 4234, 4993,
8893
UHLMANN, W.D.
3795*, 7822

KUHLMAYER, R.
5128
KUHN, D.
3138
KUHN, H.
8024
KUHN, H.A.
0589, 5255*, 6732*,
8289
KUHN, H.G.
1396
KUHNEN-CLAUSEN, D.
2476
KUIJJER, P.J.
5802
KUIPER, D.H.
0971, 8005*
KUITUNEN, P.
6689
KUJAWSKA, J.
4105
KUKHARENKO, F.I.
7317
KUKOSH, V.I.
7299
KULAGIN, O.M.
8339
KULBE, K.D.
6327
KULCSAR, A.
2843, 8319*
KULCSAR-GERGELY, J.
2843, 8319*
KULDYRKAEV, A.I.
1042
KULIEVA, KH.D.
1538
KULIK, V.P.
7081, 8147
KULIKOVA, N.A.
1161
KULIKOWSKI, A.
0391
KULKARNI, H.H.
1531*
KULLMAN, R.
8698
KULPA, J.
0283, 1055
KULSHRESHTHA, A.K.
1187
KULSHRESTHA, O.P.
3599
KUMAKURA, K.
1874, 6516*, 8004*
KUMANOV, H.
7398
KUMAR, B.V.
0117
KUMAR, K.S.
4728, 5453
KUMAR, S.
3236
KUMASZKA, F.
3882
KUMMEROW, F.A.
7829*
KUMON, A.
7022*

KUMPOSCHT, G.
6925
KUN, F.
7968
KUNATH, U.
4510
KUNDERT, J.G.
4094, 6812
KUNE, G.A.
2057, 2177
KUNG, S.D.
1592
KUNIN, A.S.
8555*
KUNITO, S.
2616
KUNKEL, B.
5262
KUNO, T.
2326*
KUNTZ, D.J.
1336
KUNTZ, F.
0589
KUNTZMAN, R.
6452*
KUNWAR, K.B.
1624*
KUNZ, B.
0184*, 1813, 3307,
5693
KUNZ, F.
2129*
KUNZ, O.
6977*
KUNZ, W.
5428*
KUNZE, H.
7192*
KUNZLE, J.F.
1126
KUNZLI, H.F.
4058
KUNZMAN, J.
5835
KUPFER, D.
2420*, 4732, 5566*,
7953
KUPFER, K.
8855
KUPFER, S.
0085*
KUPHAL, J.
7203
KUPIC, F.A.
0935*
KURACHI, A.
0585
KURATOMI, S.
3659
KURATSUNE, M.
1096
KURIHARA, H.
4916
KURIMURA, O.
6828
KURITA, N.
7893*

KURIYAMA, H.
2356*
KURODA, C.
7910*, 7911*
KUROHARA, S.
1663
KUROYANAGI, M.
2458
KURTZ, L.H.
6795
KURUP, P.A.
7181
KURYGIN, A.A.
8041
KURZ, W.
2909
KUSABA, A.
2132*
KUSAKCIOGLU, O.
7324*
KUSCH, N.L.
1240, 5749, 8966
KUSEN, S.Y.
0899
KUSHNIR, V.E.
2640
KUSS, R.
1183
KUTCHAK, S.N.
6084, 7586, 7603
KUTSCHERA, H.
5325
KUTT, H.
5607
KUTTIG, H.
5915
KUTTY, M.K.
6267
KUTUZOV, I.I.
3729
KUWAHARA, I.
4593
KUWERT, F.
9205
KUZELA, L.
5991*
KUZEMKO, J.A.
1101
KUZIN, M.I.
5729, 7369, 7382
KUZIN, M.M.
0042*
KUZMA, J.F.
5986*
KUZMENKO, V.V.
0178
KUZMINA, L.M.
5807
KUZ'MINA, Y.I.
7646
KUZNETSOV, I.S.
7676
KUZNETSOV, V.G.
8043
KUZNETSOV, V.N.
8286
KUZNETSOVA, T.D.
3546*
KUZNETZOVA, A.A.
2462
KVIST, G.
3098*
KWIATKOWSKA, J.
7039
KWITEROVICH, P.O., JR.
5411*
KWONG, E.
7991*
KWONG, K.H.
2547*
KYLE, J.
7418, 7435
KYLE, K.
5772
KYLE, L.H.
1505*
KYRIELEIS, C.
8860
KYRLE, P.
5162
KYU, M.H.
6933*
LAASTUEN, L.
7948
LAATIKAINEN, T.
4875, 5682, 7837
LABAT, J.P.
6119
LABBE, J.P.
9169
LABETSKY, I.I.
1241
LABO, G.
8771
LABRUNE, B.
0507
LABY, B.
8400
LACASSAGNE, A.
0152
LACHAUD, J.C.
5340
LACHERETZ, M.
0248, 0249, 0979
LACK, L.
8896*
LACKEY, J.O.
6862
LACOMBA, T.
1748
LACOUR, D.
1654, 5767
LACQUET, A.M.
0700
LACQUET, L.K.
5701
LACEES, R.
2515
LACROIX, L.
8790
LACY, J.P.
2219
LACZAY, A.
8718
LADYGIN, J.
2362
LADYMAN, S.R.
6172
LAFAVE, J.W.
2505*
LAFITTE, A.
6676
LAFON, J.
6346
LAFON, V.
1887
LAFONT, H.
3175, 5314
LAFRENZ, M.
6695
LAGACHE, G.
0289, 1917, 5350,
5364, 8062, 8257
LAGACHE, M.
0232
LAGADEC, B.
2076, 8453, 9225
LA GAMBA, F.
2905
LAGEMANN, K.
9191
LAGERLOF, H.
0811*
LAGERON, A.
5252*, 5259, 5267,
6055*
LAGHI, V.
9065
LAGOCKI, J.W.
3843
LAGRANGE, E.
4013, 9280
LAGUNAS, R.
7144*
LAH, N.
3630
LAHDESMAKI, M.
1399
LAHELLEC, M.
3875, 6371
LAHIRI, T.K.
7431
LAHMANN, H.
8598*
LAHRECH, T.
5738
LAI, C.S.
5899
LAI, Y.L.
7088
LAIGLE, J.L.
9091
LAIGRET, J.
4682
LAIHO, I.
1085
LAINAS, G.
3015
LAING, R.R.
4017*
LAISSUE, J.
1191, 2052, 6196, 6679
LAITIO, M.
7653*

AJZEROWICZ, R.
0079
AKHANI, A.G.
6996
AKSHMIKANTHA, K.
1559
AKSHMINARAYANA, C.S.
2973
AL, H.
3217, 8323*
ALLEMANT, Y.
1000
ALUQUE, P.
9266
AM, K.W.
5452
AMAGNA, C.
0691
AMARCHE, P.H.
5934
AMASTRA, Z.
8775
AMB, R.G.
5599*
AMB, S.G.
8349*
AMBERMONT, J.
5135*
AMBERT, D.
4410
AMBERT, D.L.
8009*
AMBERT, P.
0059*
AMBERT, R.
2399, 4191
AMBERT-LE CLER, G.
9223
AMBETH, J.
5794
AMBLING, A.
4164, 4299, 4374,
5817
AMBOTTE, L.
9073
AMBOOY, J.P.
6072, 7197*
AMMEL, H.
5064
AMONT, A.S.
3105*
AMONTAGNE, R.
5293
A MURA, L.
8577
ANCASTER, J.R.
6210, 6588
ANCASTER, M.B.
8500
ANCESTREMERE, R.G.
6127
AND, A.S.
5316
ANDA, L.
0166, 4034, 4336
ANDAW, S.A.
4825*
ANDE, M.
5323

LANDES, P.
4100
LANDEZ, J.H.
0135
LANDI, L.
2426, 4827*
LANDIN, R.M.
5600, 8534
LANDOIS, J.
8857
LANDOR, J.
3449*
LANDOR, J.H.
7873
LANDRISCINA, C.
3930*, 4725
LANDS, W.E.M.
2275*
LANDY, M.S.
3271
LANE, D.
4290
LANE, D.G.
5044
LANE, E.A.
1591
LANE, M.
7885*, 8268*
LANE, W.C.
1566*
LANFRANCHI, G.A.
4613
LANG, E.K.
1976, 2023
LANGAN, T.A.
2421*
LANGE, D.
7214*
LANGE, H.F.
1437
LANGE, D.K.
5165*
LANGE, P.
8345
LANGE, R.
7805
LANGENDORF, H.
1761
LANGENDORFF, M.
7959
LANGER, L.
2642, 2650
LANGNESS, U.
2083*
LANGRAND, L.
1010
LANIER, V.C., JR.
3582, 5859
LANSDOWN, A.B.G.
1504*
LANT, A.F.
5475*, 8166*
LANTSOV, V.P.
1476, 1477
LANZ, R.
5328
LANZA, A.
3578

LANZA, F.L.
4448*, 4912, 5237,
8436
LANZINI, F.Z.
0469, 1394
LANZOWSKY, P.
6694*
LAOR, J.
4891*
LAPEGUE, A.
4942, 6523*
LAPIS, K.
0553, 2901*
LARCAN, A.
4100, 4517, 5192
LARCHENKO, N.T.
0946*
LARDENNOIS, B.
3540
LARDINOIT, P.
5944
LARDY, H.A.
7966
LAREDO, J.C.
5817
LARENA, A.
4095, 4166, 4957
LARENG, L.
7682*
LARGE, A.M.
2571
LARIA, C. DE B.
1949
LARIN, F.
2403*
LARIN, V.V.
7206
LARMI, T.K.I.
1899, 3270*, 4944
LAROCHE, C.
5346, 9075
LAROCHE, G.
2016
LA ROSSA, B.B.
1206
LARRIBAUD, J.
4493
LARRIEU, H.
1956, 4197, 5372,
8918
LARSEN, A.
6939*
LARSEN, E.
7434
LARSEN, V.
2984
LARSON, D.L.
3628
LARSON, R.A.
1969*
LARSON, S.J.
5536, 6408
LARSSON, E.J.
3539
LARSSON, Y.
2223
LARSSON-COHN, U.
3955

LARWOOD, T.E.
1967
LARY, P.F.
2790
LASATER, J.M.
3156
LASCARI, A.D.
2047
LASCELLES, P.T.
0858
LASCHEVKER, V.M.
7265, 7515, 7521
LASCOMBES, G.
4256
LASERSOHN, J.T.
8421*
LASFARGUES, G.
4869
LASH, A.F.
6225
LASHCHEVKER, V.M.
3536
LASKEY, A.
5505
LASSAU, J.P.
1183
LASSERRE, J.
8959
LASZLO, D.
2517
LASZLO, J.
1728, 4690*, 5429*
LASZLO, L.
2745
LASZLO, M.
2745
LASZLO, P.
2636
LATALSKI, M.
4460
LA TENDRESSE, C.
2708
LATHAM, H.C.
2991
LATHE, G.H.
3164*, 6339, 6772*
LATNER, A.L.
6309*
LATREILLE, J.P.
0058*
LATSINIK, G.F.
7617, 8351
LAUBE, J.
4235
LAUBSCHER, F.A.
3331
LAUBSCHER, N.F.
5385
LAUDER, N.H.
1211
LAUEN, O.
3398
LAUFENBERG, E.
4166
LAUFER, A.
8480
LAUGHREY, F.G.
2141, 5622
LAUGHTER, A.H.
0130*
LAUGIER, J.
1829
LAUMONIER, R.
3337, 5264, 5764*,
6683*, 6686*
LAUNIALA, K.
0356*, 3455
LAUNOIS, B.
1002, 2561, 4635,
5186
LAURENCE, B.H.
0150*
LAURENT, J.
0317, 2530, 2936,
4259, 5284
LAURENT, J.C.
3422
LAURIJSSENS, M.J.
0968
LAURINGER, P.
8394
LAUSCHKE, H.
6602
LAUSTELA, E.
4091*
LAUTER, F.H.
6276
LAUTSCH, E.V.
2993
LAUTT, W.W.
5632*
LAVARIAS, R.
3589
LAVAU, M.
3214
LAVELLE, J.S.P.
1855
LAVENSON, G.S., JR.
3491
LAVERDANT, C.
5269, 7608, 8362
LAVIGNE, J.C.
0447
LAVOIE, P.
5291, 6879*, 8371*
LAW, D.H., IV.
2766, 5859
LAW, J.H.
3843
LAWLER, M.R.
1142
LAWOYIN, V.L.
3508*
LAWRENCE, A.J.
2377
LAWRENCE, A.L.
8559*
LAWRENCE, A.M.
3435*
LAWRENCE, W., JR.
1393, 3495
LAWRIE, B.
4113
LAWS, J.
7570
LAWS, J.W.
4018*, 8301
LAWSON, D.F.M.
0916, 0920
LAWSON, R.A.M.
8018
LAWSON, T.C., JR.
6770
LAYCOCK, G.M.
3822*
LAYNE, D.S.
2447
LAYRISSE, M.
6353*
LAZAR, C.
0348
LAZAR, G.
0046
LAZARESCU, P.
0351
LAZAREVA, N.I.
7693
LAZAROVA, Z.
5993*
LAZARUS, L.
0080, 0084*, 3155*
LAZNICKOVA, K.
4627
LAZORTHES, F.
9008
LAZURKINA, V.B.
7287
LAZZARI, R.
4591
LEAMING, D.H.
3504, 5112
LEAND, R.M.
0629
LEAPE, L.L.
7309
LEAR, J.
7874
LEAR, P.E.
7415, 8152
LEARY, P.M.
6272
LEARY, W.P.P.
7143*
LEASE, F.J.
3777, 6276, 7294
LEATHER, R.P.
3594
LEBACQ, E.
0567
LEBAS, F.
4870
LEBEDEV, V.P.
8128
LEBEDEVA, G.A.
0914*
LEBENTHAL, E.
4261
LEBER, H.W.
7933
LEBLANC, L.
4073
LEBLANC, R.
3798*, 5479*
LEBLOND, C.P.
1567*, 1569*, 7794
LEBODIC, L.
1238

LEBODIC, M.F.
5148
LEBORGNE, P.
2089
LEBOUTON, A.V.
0111
LE BRAS, H.
4441, 6045, 6562
LEBREUIL, G.
5337*
LEBREUX, L.
5860
LE CANUET, R.
8752
LECCE, J.G.
6283*
LECCHINI, S.
0040*, 5506*, 5508*
LECH, J.J.
4846
LECHAT, P.
1742
LECHNER, G.
5674, 5781, 8075,
8705*
LECHNER, H.J.
4066
LECLAIR, M.F.
5527
LECLERC, M.
6021
LECOMTE, P.
5017
LE CORROLLER, Y.
3022
LECOUR, F.A.
3628
LEDAK, N.A.
1369
LEDDY, A.L.
1989
LEDERER, B.
7142*
LEDINGHAM, J.
6957
LEDINGHAM, J.G.G.
7143*
LEDOUARIN, N.
4736
LEDOUX-LEBARD, G.
5023
LEDUC, J.
1894
LEE, C.C.
3794*
LEE, F.D.
1199
LEE, H.M.
1345*, 7508
LEE, J.
2978
LEE, J.C.K.
6813
LEE, J.S.
0027*, 0766*
LEE, K.M.
0307
LEE, N.M.
7968
LEE, P.
2754
LEE, P.V.
0221, 0474
LEE, R.H.
5315
LEE, S.W.
0037
LEE, Y.B.
3158, 3221
LEE, Y.S.
3158
LEELAVATHI, D.E.
7798*
LEENDERS, F.
8192
LEENDERS, F.L.
5777
LEENEN, F.H.H.
1666*
LEERS, W.D.
2729
LEEUWIN, R.S.
8622*
LEEVY, C.M.
0557, 1420, 2940,
5242, 6454*, 6768*,
7112*
LEFEBVRE, F.
5402
LEFEBVRE, P.
1314
LEFFALL, LAS.D.
2775, 3796
LE FOULON, Y.
4635
LEFRANC, J.
5042
LE FUR, J.M.
9213
LEGARE, A.
6872*
LEGENDRE, M.
3497
LEGER, E.
8451
LEGER, F.
1065
LEGER, L.
0193*, 2655, 3366,
3372, 6007, 6069,
8044, 8469, 8732,
9031, 9062, 9063,
9085, 9176
LEGG, M.A.
8202
LEGG, P.G.
3576, 4747
LEGGERI, A.
6579
LEGIEWSKI, A.
0702
LEGRAND, M.
0244
LE GUILLY, Y.
8519
LE HAO-DONG
8675
LE HENAND, F.
5079
LEHMAN, J.S.
5626
LEHMAN, J.S., JR.
3702*, 8487*
LEHMANN, G.
2186
LEHMANS, F.
7735
LEHNERT, P.
0799*, 7880*
LEHR, H.D.
2290*
LEHTONEN, T.
1082
LEHY, T.
5455
LEIBINA, E.K.
1159
LEIBMAN, K.C.
7022*
LEICHTLING, J.J.
4221
LEIGH, R.
6094
LEIGHTON, J.
1754, 8270
LEIKINA, E.M.
5592
LEINATI, F.
1924
LEININGER, R.J.
3316, 4970
LEINWEBER, B.
0562, 5255*, 9104
LEITHAUSER, U.
0243
LEIVA, J.C.V.
2009
LEJEUNE, L.P.
5321
LEJEUNE, M.F.
4641
LEJMAN, W.
0283
LEKAGUL, S.
5370, 7718
LEKIC, S.
2792
LELOIR, L.F.
6307*
LELONG, M.
9038*
LEMAIGRE, G.
2655, 3366, 3372,
5346, 6069, 8469,
9062, 9063, 9085,
9176
LEMAITRE, G.
5348, 8073
LE MAO, G.
4643
LEMARCHAL, P.
8011*
LEMBECK, F.
0779
LEMBERG, A.
7154

LEMCKE, A.
0090*, 0605*
LEMCKE, M.
0090*, 0605*
LEMCFANDE, R.O.
4269
LE MEN, J.
4013
LE HENN, G.
1145
LEMONNIER, F.
2061, 5995*
LEMPINEN, M.
2659*
LE-NA-HOA
6251
LENARDUZZI, G.
2514, 4026
LENART, I.F.
5203
LENCZYK, M.
8127
LENGHEL, A.
0517
LENGLET, J.P.
3786
LENG-PAO, NAM-CHHEM
5289
LENHARD, J.
8459
LENHART, A.
6736
LENNARD-JONES, J.E.
0399, 4028
LENNE, Y.
0319
LENOACH, F.M.
1946
LE NOC, P.
3476
LENOIR, P.
8519
LENRIOT, J.
6069
LENRIOT, J.P.
0193*, 2655, 6007,
8044, 8732, 9024,
9031, 9085
LENT, H.
0190*
LENTHALL, J.
2130*
LENTINI, J.
2725, 2726, 3501
LENYUSHKIN, A.I.
0256
LENZ, H.
4090
LENZ, J.
5941
LENZ, P.
0420
LEO, F.
8853, 8962
LEODOLTER, I.
3959, 4433
LEOGRANDE, G.
4147
LEONARD, C.
2454
LEONARD, J.P.
1144
LEONARD, J.R.
0993, 7304
LEONARD, P.
3680, 8879*
LEONARDI, L.S.
0464
LEONARDI, M.
8747
LEONARDS, J.R.
1071
LEON-BARUA, R.
1062
LEONE, F.
4675
LEONG, G.F.
4879
LEONHARDT, L.
4872*
LEONI, S.
3970
LEONIDAS, J.C.
3417*
LEON MORENO, A.
0461
LEONOVICH, N.V.
7670
LEONTIEVA, N.S.
7367
LEOPARDI, F.
4612
LEOPOLD, J.G.
6832
LEOUTSAKOS, B.
7535
LEPOFF, R.B.
7355
LEPORDA, G.
3186
LEPORE, M.J.
2834*
LEQUERLER, Y.
5736
LEQUESNE, L.P.
1029
LEQUINT, A.
3422
LE QUINTREC, M.
8099
LE QUINTREC, Y.
4942, 5817, 6523*,
8099, 8140
LERAT, J.L.
6012
LERICHE, B.
2087
LERMAN, R.H.
7756
LERNER, A.G.
6903
LERNER, J.
4776
LESAGE, R.
0299, 1065, 5293
LESAGE-FOVET, A.M.
0299
LESBROS, M.F.
0174
LESCANO-RIOS, M.
1062
LESCH, R.
2352*, 4969, 6376*,
6845, 7827*
LESCHINSKY, L.A.
2325
LESCUT, J.
0244, 0380, 9737
LESHER, J.
7313
LESHER, S.
1571*, 3029*, 7778*, 79
LESHER, S.W.
0976*
LESLIE, R.A.
5402*
LESMAN, J.A.
4750
LESNICHY, A.V.
1404
LESNOY, N.G.
1047
LESSER, G.T.
6219
LESTRADET, H.
2846
LETAC, R.
3950
LEUNG, P.Y.T.
4723, 4748
LEUSCHNER, U.
6054*
LEUTSKY, K.M.
3178
LEV, R.
3342*
LEVACHEV, M.M.
3451
LEVANDER, O.A.
3216
LE-VAN-HOA
6278
LEVASSEUR, J.C.
4994
LE VEEN, H.H.
1913, 6579*, 8131*
LEVELILLE, G.A.
0128, 7111*
LEVENDIUK, A.M.
1537
LEVENSON, S.M.
7829*, 8227*
LEVEQUE, J.
6367
LEVERE, R.D.
0839*, 1601
LE VERGER, J.C.
2089
LEVEY, S.
1575*
LEVI, A.J.
0098*
LEVI, G.C.
2263
LEVI, J.
0882

EVIN, A.A.
7283
EVIN, B.
3119, 6691
EVIN, J.
1821, 6130
EVIN, J.M.
7665
EVIN, R.J.
0902*, 1787*
EVIN, V.N.
7334
EVIN, W.
6449*, 6452*
EVIN, Y.R.
5705
EVINA, S.I.
7661
EVINE, D.S.
3188
EVINE, L.
0137
EVINE, M.M.
8463
EVINE, P.H.
5467
EVINE, R.A.
4478*
EVINE, R.J.
6214, 7796*
EVINE, R.R.
3121, 3798*, 5479*
EVINE, S.M.
3434*, 5931, 6214
EVINE, W.G.
3165*, 4860
EVINSON, J.D.
7416, 8118
EVINSON, R.A.
4794, 7162, 8554*
EVITAN, I.B.
1759, 3076
EVITAN, M.KH.
2764, 8212
EVITAN, R.
1507*, 3709*, 4756*,
5069, 7196*
EVITT, D.G.
4001, 4002
EVITT, M.D.
5649*, 8010*
EVITT, S.H.
1825*, 3315
EVI-VALENSI, P.
9090
LEVRAT, M.
2798, 2939, 3530,
5979
LEVY, C.
3372
LEVY, E.
1257, 2208, 4585
LEVY, F.
7800
LEVY, G.
2037*, 3099*, 5502,
7063*
LEVY, J.
4743, 4744
LEVY, J.J.
3114
LEVY, J.L., JR.
6962
LEVY, L.S.
6515
LEVY, M.
1936, 7931
LEVY, M.J.
8078
LEVY, R.I.
3991*
LEVY, R.S.
2864
LEVY, S.B.
5983*
LEVY, V.G.
0103*
LEW, V.L.
2341*
LEWALLE, L.
0390, 2212, 5160
LEWICKI, I.
8839
LEWIN, M.
2631*, 3919
LEWIS, E.A.
0439, 4634, 9272
LEWIS, G.W.
4584
LEWIS, P.D.
0559
LEWITUS, Z.
4871*
LEY, H.
9137
LEY, I.
6687
LEYA, JU.YA.
1043
LEYDA, H.
3307
LEYMARIOS, G.
5664
LEYMARIOS, J.
0707, 6243, 8045
LEZNOFF, C.C.
7196*
L'HERMINE, C.
5349, 8073, 8288,
8471, 9227
L'HERMINE, C.L.
0249, 0592
LI, L.F.
2418*, 3963
LIANG, H.
8317*
LIAPIS, M.A.
5912
LIAVAG, I.
1512, 1670*
LIBAUDE, H.
0247, 2948
LIBBY, P.R.
6459
LIBERTI, J.P.
0091*, 4838*, 5442*
LIBMAN, E.
0303
LIBRA, S.
3765
LICHTENAUER, F.
2906*
LICHTENSTEIN, H.
5275, 7028*
LICHTER, E.A.
0606*
LIDDELOW, A.G.
1683*
LIDSKY, I.
3466*
LIE, T.S.
1388, 6767*, 8285
LIEB, G.
3307
LIEBELT, A.
8268*
LIEBELT, R.A.
7885*, 8268*
LIEBER, A.
1809*, 5098, 5129
LIEBER, C.S.
0406*, 3166*, 3929*,
5236, 5590*, 7125*,
7126*, 7127*, 9094
LIEBERMAN, F.L.
2150, 2189*, 6894
LIEBERMAN, I.
4831*
LIEBERMAN, M.M.
7570
LIEBERMAN, P.H.
0292
LIEBERMANN, J.
1306
LIEBERMANN-MEFFERT, D.
1035, 8516
LIEBESKIND, R.
8458
LIECHTY, R.D.
8941*
LIEDBERG, G.
1265, 1649*, 3486,
5414*, 5513*, 6382*,
7858
LIEDEL, K.
8536
LIEHR, H.
5255*
LIEM, C.F.
9016
LIEN, C.N.
2241
LIEN, F.I.
1634
LIEN, W.M.
6365, 8243*
LIEN-HUONG, BUI-THI
6251
LIEPA, E.V.
2733
LIESE, W.
5428*
LIEW, C.C.
7140*
LIFRANCE, M.
0384

LIFSON, N.
4001, 4002
LIGHTNER, D.A.
8499
LIGNY, G.
1680
LIGUORY, C.
6885
LIKHACHEV, A.A.
1359
LIKHACHEV, V.A.
5979
LILIENFELD, A.
1301, 3507*
LILJEDAHL, S.O.
3695*
LILLEHEI, R.C.
3182, 6740
LILLEMEIER, F.
9050
LILLIE, R.D.
3695, 7895*
LILLY, J.
4665
LILLY, J.D.
0983
LIM, L.
4693*, 4699*
LIM, T.C.
1870
LIM, T.W.
2971
LIMA, E.W.
1840
LIMA, J.P.
4430
LIMAKHINA, M.A.
7766
LIMBRICK, A.R.
8502*
LIMON, J.N.
2005
LIMOND, R.V.
3347
LIN, G.
7888*
LIN, J.S.
4515, 4685, 7007
LIN, M.F.
7159*
LIN, S.R.
2034*
LIN, T.Y.
8310
LINARELLI, L.G.
5562*
LINARES, C.A.
3147
LINARI, G.
7852*, 7878*
LINCHENKO, I.F.
9094
LIND, I.
3457
LINDAHL, U.
2303
LINDALL, A.W.
0542
LINDBERG, F.F.
2169, 4114
LINDBERG, K.
7904*
LINDBERG, T.
3446*, 8929*
LINDEMANN, J.
1735*
LINDEMANN, R.
4364*
LINDEN, L.W.F.
1166
LINDENAUER, S.M.
2714
LINDENBAUM, J.
0406*
LINDENBRATEN, L.D.
2918, 5721
LINDENSCHMIDT, W.
1173
LINDER, J.H.
5908
LINDER, L.H.
6962
LINDER, M.M.
8377
LINDER-HOROWITZ, M.
3222
LINDGREN, F.T.
3991*
LINDHOLM, K.
3486
LINDNER, A.E.
5857
LINDNER, H.
4062
LINDQUIST, B.
2686*, 5371
LINDROS, K.O.
0838*
LINDSAY, J.W.
4995
LINDSTEDT, F.
3430, 3486
LINDSTEDT, G.
3486
LINDSTRAND, K.
2376, 5414*
LINDSTROM, B.
3212
LINDSTROM, C.G.
2676
LINE, F.G.
7605
LINETSKAYA, L.M.
2738
LINEVSKY, YU.V.
1296, 6194
LINFORS, O.
3212
LINGAAS, H.
3403
LINHART, J.
4424
LINKE, P.G.
8561
LINN, T.C.
0881
LINNEWEH, F.
8754
LINQUETTE, M.
8250, 8471
LINS, W.
0086, 3923
LINS, Z.C.
7202
LINSCHEER, W.G.
3650*, 5081
LINSELL, C.A.
2528
LINSS, W.
0004*, 0756, 8517
LINTCHEVSKAYA, A.A.
2822
LINTHE, H.
8596
LIPITZ, L.
5240, 6088
LIPKIN, M.
1784*, 4692*
LIPPEL, K.
3803*
LIPPMANN, W.
2373*
LIPTON, S.D.
2950*
LIS, M.T.
1624*
LISBOA, B.P.
2410*, 5412*, 6445*,
7132*, 8613*
LISCIANI, R.
7863*
LISCIO, A.
2437, 3208
LISEWSKI, G.
8844
LISO, V.
0273*
LIST, W.F.
0992
LISTA, D.
4481
LISZKA-KOPEC, B.
8541
LITCHFIELD, M.H.
3861
LITCHFORD, R.G.
2490, 3023
LITSIOS, B.
6853
LITTENBERG, G.D.
1306
LITTLE, J.M.
1938, 2153, 6073
LITTLE, M.J.
7703
LITTLEFIELD, J.W.
0233
LITTMAN, A.
5828*
LITTMAN, M.
5828*
LITTMANN, R.
1315
LITVAK, J.
3111

LITVINOVA, S.L.
2641
LITWACK, G.
2314, 3070, 3810*
LIU, I.K.M.
9261*
LIU, K.
7159*
LIVADITIS, A.
6591, 7432
LIVET, H.
6640
LIVINGSTON, A., JR.
4188*
LIVSTONE, E.M.
6930*, 6932*
LJALJEVIC, J.
3511
LJUNGBERG, S.
3170*, 3171*
LLEDIAS, T.
0751*
LLOMART, J.
0159
LLOPIS, B.
1109
LLORENTE, P.
3191
LLOYD, A.
3454
LLOYD, J.B.
1622
LLUBERES, R.
3770*
LO, H.H.
2346
LOBKO, A.F.
3676
LOBO-PARGA, G.
4498
LOCALIO, S.A.
0357*
LOCATELLI, A.
3787
LOCHER, D.
6739
LOCHER, J.
4888*
LOCHER, J.T.
8706*
LOCKER, J.
8278
LOCKHART-MUMMERY, H.E.
1229, 7487
LOCKWOOD, F.A.
6423*
LOCKWOOD, K.
6642
LOCOCO, G.
2176
LODGE, D.F.
0947*
LODIGIANI, E.
6922
LODINOVA, R.
3040*
LODOLA, E.
7331
LOEB, H.
2059
LOEB, J.N.
4824*, 5431*
LOEHRY, C.A.
7058*
LOEPER, J.
3972
LOESCHKE, K.
4759*, 6351*
LOEWE, K.R.
5339
LOFDAHL, E.
2223
LOFT, P.M.
8322*
LOGAN, A.
7503
LOGAN, W.D., JR.
1851
LOGINOV, A.S.
6108, 7649
LOH, W.S.
0221
LOHRS, U.
0910*, 6248, 7853*
LOHS, K.
5226
LOIODICE, L.
4319
LOISEAU-MAROLLEAU, M.L.
1927, 2229
LOIZEAU, E.
1233, 9000
LOJACONO, L.
0165, 0168, 0174
LOJDA, Z.
7031*, 8931
LOKEN, A.C.
4364*
LOKSHINA, K.A.
1045, 1102
LOMAKO, V.V.
5710
LOMANTO, B.
2876
LOMBARD, R.
9223
LOMBARDI, A.R.
0995
LOMBARDI, B.
0008*, 7798*
LOMBARDI, C.
9204
LOMBARD-PLATET, R.
5123
LONDON, W.T.
5268, 7607, 7622
LONG, J.M., III.
2713
LONG, J.P.
2360
LONG, W.R.
6961
LONGBERG, B.
3791*
LONGHI, L.
8544
LONGMAN, E.S.
4838*
LONGMIRE, W.P., JR.
6150, 9185
LONGMORE, W.J.
0840*
LONSDALE, D.
8308
LOOK, D.
6573
LOONEY, W.B.
2322, 3159*
LOPATA, YU.M.
0042*
LOPES, E.A.
0086
LOPES, J.D.
0537*
LOPES, V.M.
2196
LOPEZ, J.M.
4181
LOPEZ, O.
4646
LOPEZ, W.A.
3010
LOPEZ CORTES, M.
3990
LOPEZ GIBERT, J.
4038
LOPEZ Y LOPEZ, R.
2556
LOPEZ MERINO, V.
4089
LOPEZ POUMIAN, G.
3785
LOPEZ RODRIGUEZ, F.
4213, 4993, 8893
LOPUKHIN, YU.M.
8286
LORANSKAYA, T.I.
8130
LORBER, S.H.
2563, 6379*, 8090*
LORCA, F.
0514
LORCH, C.J.
2751
LORD, J.W.
3000
LORD, P.H.
1264
LORENTZ, K.
0852*, 0853*, 4065,
8777
LORENZ, W.
0007*, 5036
LORENZELLI, A.
2501*
LORENZO, E.G.
1148
LORENZO, J.
0238
LORENZONI, C.
1623
LORETO, N.
0019
LORI, R.
0510

LORIDAN, L.
3199
LORINCZ, A.B.
5910
LORING, J.
6453*
LORRIAUX, A.
1837, 2142, 4413,
5294
LORTAT-JACOB, J.L.
0251, 1002, 1003,
1010, 1067, 1382,
1834, 1835, 1838,
1955, 2101, 2561,
5079, 5757, 8894
LOSANA, O.
4343
LO SARDO, S.
9139
LOSEVA, A.G.
7691, 7731
LOSNER, I.
1223*
LOSOWSKY, M.S.
2054
LO SPALLUTO, J.J.
4004
LOSSIO, M.
8495
LOSSOW, W.J.
3991*
LOTERO, H.
4605
LOTH, J.
7577*, 7971
LOTH, P.
8939
LOTLIKAR, P.D.
7525*
LOTSPEICH, F.J.
1783*
LOTT, P., JR.
0789*
LOTTI, V.J.
3389*
LOUBEAU, J.M.
9073
LOUBIERE, R.
2857*
LOUGHRIDGE, B.
1746
LOUIS, L.N.
7122*
LOUISOT, P.
4742
LOURDES, M.
0722
LOURDES-SAMPAIO-XAVIER, M.
4059
LOUS, P.
6099, 7600*
LOUW, J.H.
5119
LOUYEST, J.
1895, 3678
LOUZA, W.
0086, 3923
LOVE, A.H.G.
3443*
LOVE, J.W.
7194*
LOW, H.
0909*
LOW-BEER, T.S.
7025*
LOWE, C.F.
0933*
LOWE, C.U.
4370*
LOWE, D.
1772
LOWE, W.C.
0620, 8465
LOWENBERG, E.
1362
LOWENTHAL, J.
1938
LOWMAN, R.M.
1014
LOWRY, P.T.
0414
LOWRY, R.B.
2845
LOWY, C.
2446, 6425*
LOWY, R.
1757, 3214, 3876,
8660
LOYGUE, J.
0472, 4299, 4585,
5903
LOYKE, H.F.
6124
LOZZIO, B.B.
0106
LOZZIO, M.L.
0106
LU, A.Y.H.
4716
LUBBERS, F.J.C.
4245
LUBBINS, F.J.C.
0294
LUBCKE, P.
8474
LUBERT, H.
3464*
LUBETZKI, J.
8240
LUBIN, E.
4891*
LUCA, N.
0351
LUCAS, C.
9194
LUCAS, C.F.
7417
LUCAS, C.R.
4473*
LUCCHINI, A.
0230
LUCCIONI, L.
2231
LUCIAK, M.
0334
LUCKING, T.
2171
LUCKS, P.
6580*
LUCY, J.A.
5436*
LUDANY, G.
3891*
LUDCKE, J.B.P.
8596
LUDEMANN, W.
8079
LUDERS, D.
5220
LUDEWIG, P.M.
5630*
LUDIN, H.
4058
LUDWICK, J.R.
3370
LUDWIG, J.
2144, 5072*, 6905
LUECK, J.D.
3837, 8616*
LUEDERS, K.K.
5177*
LUENGO, M.D.
1146
LUEZ, J.
9227
LUGO-DE-RIVERA, C.
8167*
LUI, S.
7578*, 9095
LUISADA-OPPER, A.V.
7112*
LUISI, P.L.
1753
LUKACS, I.
0142, 3816*
LUKASH, W.M.
5687
LUKE, C.G.
5071*, 5980*
LUKES, R.J.
5921
LUKINA, T.N.
7427
LULU, D.J.
1900*
LUMB, G.
3028*
LUMBERS, J.
0964
LUNA, C.A.F.
4419
LUND, E.E.
6260
LUND, F.
1313
LUND, I.
3593*
LUNDGREN, O.
1627*, 3246, 3258,
4003, 4868
LUNDQUIST, A.
6531
LUNDSGAARD-HANSEN, P.
0579
LUNDVALL, O.
2802*

LUNDY, R.S.
2290*
LUNEL, J.
2000
LUNSETH, J.G.
3392*
LUPIEN, P.J.
8644
LUST, G.L.
9271
LUTHARDT, T.
5257
LUTSEVICH, E.V.
7224, 7715
LUTTICHAU, F.
9175
LUTZ, F.
3203
LUTZ, J.
7999
LUTZE, G.
5428*
LUUKKAINEN, T.
5448
LUYCKX, A.
1314
LYASHEVA, A.P.
7619
LYCZEWSKA, J.
0595
LYDON, R.J.
5517*
LYNCH, H.A.
2448
LYNCH, S.R.
6945*
LYNEDJIAN, P.B.
8697
LYNEN, F.K.
8764
LYNFIELD, J.
7362
LYNFIELD, Y.L.
2886
LYNGSTADAAS, S.
5946
LYNN, H.B.
2719
LYNN, R.B.
0259
LYNRAVEN, G.S.
0950*
LYS, P.V.
3413
LYSAK, Z.A.
1145
LYSKOVTSEV, M.M.
6097
MAAS, C.W.
2949*
MABUCHI, Y.
6288*
MACALLISTER, R.
4129*, 4976*
MACARIF, O.
0351
MACCHINI, M.
2019

MACCHIONE, C.
4046
MAC DONALD, A.J.
6852, 7728
MAC DONALD, R.A.
6009
MAC DONALD, W.C.
1090
MAC DONALD, W.E.
7124*
MACEK, M.
4229
MAC GREGOR, A.B.
6681, 6713
MAC GREGOR, A.M.C.
1196
MACHADO, E.
0106, 3101*
MACHADO, G.
0939*
MACHADO, I.D.
5406
MACHADO, M.C.C.
7090
MACHALSKI, M.
0334, 4198
MACHIEJEWSKI, J.
2396
MACHOVICH, R.
4345*, 6303*
MACINNIS, A.J.
1547
MACINOT, C.
0317, 6677
MACK, F.
0724*, 2404*
MACKAY, C.
1151*, 7034*
MACKAY, I.P.
3641*
MACKAY, L.A.
0462
MAC KENZIE, D.A.
3970
MACKEVICIUS, F.
3826
MACKEY, W.A.
3583
MACKH-KAUFFMANN, G.
5821
MACKIE, J.A.
7326*
MACKINTOSH, D.
3059
MACKMAN, S.
3492
MACKRELL, T.N.
1681
MAC LAREN, N.K.
3119
MAC LAURIN, C.H.
2173
MAC LEAN, L.D.
3196
MAC LEAN, N.
3514, 8226*
MAC LEOD, D.A.D.
2667

MAC LEOD, I.B.
8089*
MAC LEOD, J.H.
5108
MAC MAHON, H.E.
7554, 8372*
MAC MAHON, M.T.
3438*
MAC MAHON, R.A.
0442
MAC NAMARA, F.N.
6273
MAC NORLAND, R.H.
6225
MAC PHEE, I.W.
2050
MAC PHERSON, A.I.S.
6522*
MAC PHERSON, R.I.
4914
MAC QUEEN, J.
7124*
MACRIS, G.
6662
MAC VAUGH, H., III
3322
MADALINSKI, K.
2947*, 5454
MADANAGOPALAN, N.
7680*
MADAPPALLY, M.M.
7935, 7949
MADDEN, J.J., JR.
5630*
MADDEN, J.L.
2923
MADDING, G.F.
7571
MADDOCKS, I.
5219
MADDREY, W.C.
2188*
MADEDDU, A.
4455
MADGE, D.S.
2340*
MADGE, G.E.
8069
MADHAVAN, M.
1091
MADHAVAN, T.
4600
MADI, K.
1150*
MADIFF, M.M.
7636
MADIGAN, M.R.
1971*
MADON, E.
0524
MADSEN, B.
7343
MADSEN, N.P.
5568*
MADSEN, S.
6999, 7545
MADULI, S.
7218*, 7749

MADZAROVOVA-NOHEJLOVA, J.
0161*
MAE, A.
3659
MAEDA, R.
4633
MAEGRAITH, B.G.
6275
MAENO, H.
1699*
MAENZA, R.M.
6247
MAESS, J.
6955
MAESTRACCI, D.
4703*
MAEVSKY, V.A.
5474
MAFART, Y.
4642, 5340
MAFFIOLI, C.
6242
MAGALHAES, N.M.
2102
MAGANINI, R.J.
5117
MAGDALENA CASTINEIRA, C.
8866
MAGEE, D.F.
0081, 1677, 2369*,
3135*, 5535*, 5552*,
7879*
MAGER, J.
0835*
MAGGI, U.
1204
MAGGI, V.
7454*
MAGNANI, L.
3747
MAGNENAT, P.
8631*, 9160, 9167,
9214
MAGOMEDOV, A.Z.
7769
MAHADEVAN, S.
5582*
MAHADEVAN, V.
5280*, 5281*
MAHAJAN, S.K.
8378
MAHALANABIS, D.
2001, 3754
MAHARAJSARAN, B.
2079
MAHER, F.T.
3651*
MAHLO, A.
0214
MAHLUM, D.D.
3619
MAHMOUD, S.
6966
MAHONEY, W.D.
5793
MAHORNER, H.
3757
MAHOUDEAU, D.
5217
MAIDA, H.
8910
MAIDANOVA, N.V.
7963
MAIER, B.R.
8701
MAIER, J.
9002*
MAIER, K.P.
9132
MAILLARD, A.
3407
MAILLARD, J.N.
1002, 1382, 3657,
5150, 5152, 5153,
5186, 5297, 5757,
6780*
MAILLARD, J.P.
0249, 5348
MAILYAN, A.G.
7227
MAINBRIDGE, J.N.
5409*
MAINETTI, J.M.
0320
MAINGOT, R.
1140, 2776
MAINGUET, P.
0047, 0428*, 1656,
1906, 4212, 4731*,
7212*, 8734, 8873,
8826
MAINWARING, A.R.
7422, 8145
MAIOLO, A.T.
1665, 5282*
MAIRA, J.
4646
MAISANO, A.
0165, 0168, 0174
MAISIN, J.R.
2486
MAITROT, B.
9010
MAIZEL, H.
5087
MAJESKY, I.
4078
MAJEWSKI, A.
1173
MAJIMA, Y.
7176
MAJOR, T.
1650*
MAJUMDAR, G.C.
3961
MAKARENKO, T.P.
7315
MAKAROV, F.D.
6048
MAKAROVA, E.I.
7732
MAKAROVA, N.A.
7285
MAKELA, V.
1399, 3665
MAKHLOUF, G.M.
3908*
MAKHMIDOV, A.B.
7370
MAKHMUDOV, O.S.
7693
MAKHMUDOVA, K.H.M.
7695
MAKHOV, N.I.
3673
MAKI, T.
1075
MAKI, Y.
1406
MAKINO, K.
6637
MAKOS, R.P.
8129
MAKOVICKY, V.
2597
MAKSIMENKOVA, A.N.
7081
MAKSUDOVA, D.K.
7672
MAKSUM, M.
3488
MALAEV, B.N.
7459
MALAFOSSE, M.
4585
MALAGUTI, P.
3756, 8998
MALAIYANDI, M.
5582*
MALAKHOVSKY, YU.E.
1369
MALARET, G.
3001*
MALATESTA, P.
1054, 1106, 1867,
1902*, 1944, 1905,
2218, 2916
MALATHY, K.
7181
MALCOM, G.T.
2407*
MALDAGUE, P.
9073
MALDONADO, N.
0412*, 2687*, 3001
MALDONADO, P.
6729
MALEJKA-GIGANTI, D.
2397*
MALENDOWICZ, L.
3622, 4444*
MALETTE, L.E.
7951
MALHOTRA, S.L.
5832
MALINOW, M.R.
7948
MALINS, J.M.
1203
MALIZIA, A.
0669
MALLET, R.C.
1347*
MALLET-GUY, P.
1962, 4746, 4874,
7539*

MALLET-GUY, Y.
4746, 7539*
MALLIA, A.K.
7210
MALLIK, K.K.
2649, 3020
MALMQVIST, E.
0909*
MALONEY, A.J.
0435
MALT, R.A.
2075, 3198
MALTHUR, V.P.
6909
MALVY, P.
1238
MALYI, B.K.
1477
MAMAMTAVRISHVILI, D.G.
3386
MAMCHICH, V.I.
2910
MAMMUCARI, R.
2231
MAMONT, B.
5688
MAMOUN, S.
6585
MAMYKIN, S.N.
5904
MANCHESTER, K.L.
4745
MANCHON, P.
5231, 5455
MANCIA, A.
0377
MANCIA, G.
4611
MANCINI, A.
6859*
MANCINI, A.F.
9134
MANDELSTAM, P.
1809*
MANDIOLA, S.
9185
MANDZIUK, E.N.
5715
MANDZIUK, V.D.
7462
MANECAN, N.
2797
MANELLI, J.C.
8068
MANEVICH, A.Z.
3546*
MANEVSKA, B.
2827
MANFREDI, D.
8852
MANGAN, F.P.
4821*
MANGHISI, O.
2807*
MANGIANTINI, M.T.
3970
MANGIWA, J.
6748, 7253
MANGLA, J.C.
2390
MANGOLD, H.K.
3960
MANI, J.C.
7973
MANIER, J.W.
8030
MANINI, G.
4557
MANITZ, G.
6054*
MANKINA, N.S.
7689
MANKO, V.I.
1371
MANN, A.
5911
MANN, C.V.
0054, 3128, 4804,
7855
MANN, J.G.
1153*, 4249*
MANN, K.G.
6336
MANNEL, G.
8601
MANNERING, G.J.
4858
MANNING, J.P.
0167
MANOCCHIO, G.
0016
MANOEROENG, S.M.
3741
MANOUILOFF, J.
1680
MANOWITZ, P.
4735
MANRIQUE, J.
0674
MANSFIELD, C.M.
2034*
MANSOUR, K.A.
1851
MANSOURI, H.
6822
MANSOURI, R.
6822
MANSSON, T.
3446*
MANTECON, R.L.
4946
MANTELLINI, E.
3682
MANTERO, R.
0199
MANTOUDIS, S.M.
1789
MANTOVANI, R.A.
0922
MANUBENS, R.
0675
MANZ, C.W.
2708
MANZOLI, F.A.
3180
MAO, C.C.
6364
MAO, W.L.
7087
MAPPES, G.
5916, 6696
MAQUIERA, N.
0510
MARABINI, A.
5671
MARAN, A.G.D.
7304
MARANGONI, L.
2876
MARANO, R.
2807*, 4636
MARATKA, Z.
2523, 4310, 8210,
8219, 8220
MARC, M.
4101
MARCARIE, D.
0351
MARCEAU, M.
2353
MARCER, V.
7443
MARCH, W.H.
0748*, 0749*
MARCHAL, G.
1143, 9086
MARCHAND, C.
7061*
MARCHAND, P.
2557
MARCHAND, R.
3051
MARCHE, C.
1733, 1887, 4609,
4777, 5229, 5230,
5264, 5346, 5665,
5764*, 6683*, 6696*,
6911*, 8933, 9172
MARCHE, J.
1733, 5229, 5230
MARCHE, M.
4609
MARCHESIN, G.
2593
MARCHETTI, M.
2392*, 2426, 2856*,
4827*, 8635*
MARCHI, A.G.
3442*
MARCHI, N.
4741
MARCHIO, F.
2176
MARCHISIO, P.C.
5620*
MARCHIS-MOUREN, G.
7030*
MARCIACQ, Y.
7018
MARCIANO, S.
2431
MARCINSKI, A.
0460
MARCO, R.
3191

MARCOLONGO, R., JR.
6107
MARCONI, M.
3873
MARCOS BECERRO, J.M.
2592
MARCUS, N.
5531*
MARCUSSEN, H.
3297, 7268
MARCZYNSKA, A.
0283, 1055
MARD, R.D.
0323
MARDASHEV, S.R.
5593
MARELLA, M.S.
6674
MARENCO, G.
4033, 5896
MARES, P.
8593
MARGARETTEN, W.
5238
MARGARIDO, N.
7099
MARGNELLI, M.
4350
MARGOLESE, R.
6151
MARGOLIS, G.
7005*
MARGOLIS, S.
8168*, 8523
MARGULIS, A.R.
6714, 8068
MARIANI, A.
6051
MARIANI, L.C.
4035
MARIE, L.
0673
MARIN, A.W.
0157
MARIN, E.
4199
MARIN, L.A.
3346, 4121, 7348
MARINESCU, C.
3544*
MARINETTI, G.V.
2416*, 6428*, 6447*
MARINI, D.
3835
MARINO, P.
1104
MARION, J.
4645
MARION, P.
5213
MARIOTTI, M.
7443
MARK, A.L.
2482*
MARK, I.
7604
MARK, J.B.D.
2562
MARKGRAF, F.
5015
MARKHAM, N.P.
6274
MARKHERTENE, I.A.
2826
MARKHOLEV, Z.
2821
MARKI, H.H.
4938
MARKO, O.P.
2764, 7208, 7473,
8212
MARKOFF, N.
0310
MARKOV, I.N.
7383
MARKOWITZ, A.M.
5917
MARKOWSKA, A.
0300
MARKS, I.N.
1605, 2513*, 2540
MARKS, J.
7437*, 7439*, 7440*
MARKS, M.I.
7610
MARKUSSEN, J.
5614*
MARKWARDT, F.
6415
MARLEAU, D.
8371*
MARLETTA, F.
2333
MARLISS, E.
1712*
MARNIEMI, J.
2436
MAROTTA, A.A.
4194
MARQUAND, J.
4985, 5957, 8256
MARQUEZ, H.S.
1511
MARQUEZ-MONTER, H.
8514*
MARQUIE, G.
6307
MARSCH, W.
6875*
MARSDEN, P.D.
1549, 3017, 4667*
MARSELOS, A.
0115
MARSH, F.
2237
MARSH, H.H., III.
3230
MARSH, M.N.
1569*
MARSH, W.H.
2365, 4701*, 5553*
MARSHAK, R.H.
5857
MARSHALL, J.N.
7721
MARSHALL, T.R.
0970
MARSHALL, W.J.
2135
MARSILII, G.
1711*
MARSTON, A.
8206
MARTALOCK, D.L.
0640
MARTEL, A.J.
2904*
MARTEL, W.
3347
MARTELLI, C.F.
4224
MARTENS, L.A.
7978
MARTI, M.C.
5833
MARTIN, A.
1225*, 3902
MARTIN, A.D.
2445
MARTIN, C.
2203
MARTIN, CL.
4457
MARTIN, C.E.
2861
MARTIN, D., JR.
0097*
MARTIN, E.
9032
MARTIN, E.D.
0522
MARTIN, F.
0139*, 0990, 2388,
8039*
MARTIN, G.
0592
MARTIN, G.B.
9644
MARTIN, H.F.
4852, 8009*
MARTIN, J.F.
0767*, 2863, 4132*
MARTIN, J.H.
3555*
MARTIN, P.
3925
MARTIN, R.
0333
MARTIN, S.
0676
MARTIN, V.
3851
MARTIN, W.G.
0899
MARTIN, W.T.
6249
MARTIN, Y.
3878
MARTINEK, K.
9040*
MARTINELLI, G.
8801, 9197
MARTINELLI, M.
9144
MARTINEZ, D.M.A.R.J.
4275

MARTINEZ, L.O.
1359
MARTINEZ, V.
4498
MARTINEZ-MANAUTOU, J.
8514*, 8515*
MARTINEZ MARANON, R.
4669
MARTINEZ-TORRES, C.
6353*
MARTINI, G.A.
4404, 6854*, 6875*,
6976, 7736, 8991,
9113
MARTINI, N.
3329
MARTINI, R.B.
0325
MARTINOTTI, A.
0335, 0681, 1374,
1375, 1486, 4156,
4241, 4501, 4563,
4582
MARTINSON, J.
4003
MARTTILA, A.
1085
MARTULA, M.
8406
MARTUSCELLI, Q.
0720
MARTY, A.T.
0480
MARTY, C.
9088
MARTYN, L.J.
1095
MARUBBIO, A.T.
5219
MARUTA, M.
7322*
MARUTHI, V.
2976
MARUYAMA, M.
0479, 1874, 6516*,
8004*
MARZI, M.
1106, 1286, 1903*,
1944, 2095, 2174,
2218, 3368
MARZO, A.
2441, 7634*
MARZOTKO, D.
8536
MASADA, M.
2542
MASALA, C.
0274*
MASAR, J.
4487
MASARONE, M.
8936
MASCHETTI, G.
1320
MASCHIO, G.
2899
MASELLI-CAMPAGNA, G.
3144
MASERA, N.
4316
MASI, C.
1282, 1621, 2019,
6626
MASIELLO, O.
3911
MASKIN, M.
1862
MASLENNIKOVA, L.D.
8002
MASLO, P.
0674
MASON, A.M.S.
2684*
MASON, A.Y.
2712
MASON, D.
0542
MASON, G.R.
0803*, 3127
MASON, H.S.
4822*, 5458
MASON, M.C.
1613
MASON, P.H.
0267
MASON, R.
2451
MASSAIOLI, N.
8246
MASSARELLA, G.R.
1024*
MASSART, N.
3082, 6491, 7934,
8786
MASSARO, E.J.
2283*
MASSARRAT, S.
0907*
MASSE, R.
9213
MASSEYEFF, R.
4073
MASSIDDA, B.
9267
MASSIMO, C.
1484. 1890
MASSION, J.
0457
MASSON-BORAS, F.
4854
MASSOTTI, D.
0127
MASTELLA, G.
7443
MASTERS, C.J.
7722
MASTRANGELO, U.
9194
MASTRYUKOVA, V.M.
0687*
MASUDA, K.
6080
MASUDA, M.
5863, 6545
MASUDA, T.
6828
MASUMOV, S.A.
6141, 7333
MASUYA, T.
1750, 4505*
MASYUKOVA, E.N.
7366
MATA, L.J.
1529*, 2190*
MATACHINER, J.T.
5437*
MATEEV, A.A.
8350
MATEEV, B.
4894*
MATHAI, N.M.
6264
MATHEWS, H.B.
8647
MATHEWS, J.D.
3641*
MATHEWS, R.S.
3734
MATHIAN, D.
2388
MATHIAS, A.P.
0867
MATHIEU, G.
0450, 9069
MATHIEU, M.
3524
MATHIEU, O.
7936
MATHIEU, P.
4100, 4103, 4513
MATHIS, P.
5149
MATHOV, E.
0510
MATHUR, S.N.
1129
MATIASHIN, I.M.
2746
MATRAY, F.
6861, 8876, 9089
MATSUBARA, T.
9244
MATSUDA, H.
2770*, 3269*
MATSUDA, M.
6990, 7166
MATSUDA, S.
0308, 6489, 6975,
7461
MATSUDA, T.
8283
MATSUDAIRA, H.
4371*
MATSUHISA, T.
3590
MATSUI, E.
4856
MATSUKA, G.KH.
3089
MATSUMOTO, M.
0108, 5009, 5010,
5320, 5378
MATSUMOTO, T.
6637, 8087*, 8584*

MATSUMURA, C.
9256, 9257, 9258
MATSUMURA, Y.
3025*
MATSUNAGA, F.
5922
MATSUO, Y.
3592*
MATSUOKA, Y.
0815
MATSUSHITA, T.
5758
MATSUURA, K.
2493, 2494, 2495,
7054*
MATSUYAMA, M.
6304*
MATSUZAKI, M.
5994*
MATSUZAKI, S.
6199
MATTAR, A.R.
1843
MATTAR, J.A.
4355
MATTEI, M.
9742
MATTENHEIMER, H.
7609
MATTER, A.
0750*
MATTES DOS SANTOS, M.A.
0722
MATTHAES, P.
0597
MATTHEWS, D.M.
1626*, 8164*
MATTHEWS, J.L.
8555*
MATTHEWS, M.J.
1239
MATTHEWS, N.E.
5974
MATTHEY, M.
6541
MATTIG, H.
6912
MATTILA, M.J.
1899, 5855*
MATTIOLI, F.
0145, 0173, 3666
MATTOCKS, A.R.
6844
MATTSSON, G.
3212
MATUO, Y.
7042
MATVEEV, N.K.
5806
MATYASHIN, I.M.
7733
MATZANDER, U.
1446, 1721*, 4616
MATZNER, M.J.
1480
MAUER, B.
6127
MAUER, I.
5769
MAUER, S.M.
7610
MAUERHOFER, R.F.
8820
MAUR, M.
0678
MAURER, W.
8325*
MAURI, M.M.
5719, 8755
MAURICE-WILLIAMS, R.S.
1013
MAURTUA, L.C.
4196
MAUUARY, G.
2534
MAUVAIS-JARVIS, P.
6490
MAVLANOV, F.
7477, 8171
MAVRIDES, C.
1591
MAWER, G.F.
1963*, 4769, 5482*,
5483*
MAX, F.
4899
MAX, M.
3909*
MAX, M.H.
3027*
MAXAM, B.T.
1945
MAXIMENKO, I.D.
6048
MAXIMENKO, O.I.
6048
MAXIMENKOVA, A.N.
8147
MAXWELL, E.S.
2460
MAXWELL, J.D.
1570*, 1966
MAXWELL, J.G.
0095*, 0986, 1179
MAXWELL, N.G.
9115*
MAY, J.C.
4250*
MAY, R.E.
7552
MAYAT, V.S.
5937, 7404
MAYDAY, G.B.
2600, 8253
MAYER, R.J.
2470*
MAYERSOHN, M.
2328*
MAYES, G.R.
4926
MAYES, J.S.
6228
MAYNARD, J.H.
2839
MAYNE, N.
1203
MAYS, E.T.
7303
MAYSTON, P.D.
8605
MAZA, V.
3469
MAZAHERI, A.
6460
MAZAUD, R.
9274
MAZINGARBE, A.
8469
MAZURIN, A.V.
6001
MAZZACCA, G.
2488
MAZZACUVA, D.
9055
MAZZANTINI, G.
4674
MAZZARELLA, L.
4725
MAZZARIELLO, R.
3688, 4036
MAZZONE, D.
3281
MAZZONE, S.
4483
MAZZONI, G.
1108
MC ADAM, W.A.F.
1186, 1196
MC ADAMS, A.J.
4598, 5661*
MC AFEE, J.G.
8038
MC ALHANY, J.C., JR.
0938*
MC ALISTER, W.H.
1926*
MC ALLISTER, H.A.
6847
MC ALLISTER, R.A.
2809*
MC BAIN, G.C.
1333
MC BEE, J.W.
4990, 8121
MC BRIDE, C.M.
7477
MC BROOM, G.L.
4953
MC BURNEY, R.P.
1007, 3465*
MC CABE, R.E.
2673
MC CAFFERY, T.D.
3435*
MC CANCE, R.A.
8483
MC CARTHY, C.F.
0197*, 1811*, 2512*
MC CARTHY, D.M.
2025
MC CARTHY, J.D.
0489
MC CARTHY, L.J.
2500*, 6552
MC CARTOR, H.R.
3968

LIBRARY U. OF I. URBANA-CHAMPAIGN

MC CLAIN, M.I.
2182
MC CLEERY, J.L.
7985*
MC CLELLAND, R.N.
0297
MC CLENNAND, R.N.
8028
MC CLUSKEY, B.
5800
MC COLLUM, R.W.
0536*
MC CONN, R.
6903
MC CONNELL, E.
1555
MC CORD, J.R.
1700*
MC CORKLE, H.F.
3257
MC CORMACK, W.M.
4586
MC CORMICK, A.Q.
2845
MC CORMICK, J.R.
6365
MC CORMICK, W.C., III
2773
MC CORMICK, W.F.
9059
MC CRAY, R.S.
0189*, 0990, 4250*,
4924, 8037
MC CULLOUGH, F.S.
5742
MC CULLY, D.J.
7760
MC CURDY, W.C., III
7588
MC CUSKEY, R.S.
1572*
MC DANIEL, M.L.
0840*
MC DERMOTT, F.T.
6619*
MC DERMOTT, W.
4250*
MC DERMOTT, W.V.
6047, 6791
MC DERMOTT, W.V., JR.
3649*
MC DEVITT, J.B.
1317
MC DONALD, D.F.
5771
MC DONALD, G.S.A.
2530*
MC DONALD, J.K.
0876
MC DONALD-GIBSON, W.
7913*
MC ELLIGOTT, T.F.
3861
MC EVOY, F.
2280*
MC EWAN, A.B.
0352
MC FARLAND, J.O.
1357
MC FARLAND, L.Z.
6506
MC GEACHIN, R.L.
5567*
MC GEE, J.O'D.
1714*, 1715*
MC GILL, D.B.
7293
MC GILL, J.I.
1028
MC GOVERN, B.
1267
MC GUIGAN, J.E.
1669*, 2323, 2370*,
3253, 3968, 6393*,
7050, 7384*, 8506*,
8582*
MC HARDY, G.
4665
MC HARDY, G.G.
0983
MC ILPATH, D.C.
2724, 3704*
MC INTOSH, D.J.
0887
MC INTYRE, N.
1876
MC INTYRE, R.V.
2650
MC INTYRE, W.B.
2665
MC KAY, D.G.
8877
MC KAY, R.T.
8139
MC KEE, R.W.
7041
MC KEGNEY, F.P.
3434*
MC KELL, W.M., JR.
8342
MC KENNA, T.J.
1505*
MC KENNEY, J.R.
0768*
MC KENZIE, A.D.
9193
MC KENZIE, G.
2177
MC KENZIE, K.
5168*
MC KENZIE, R.G.
1629*
MC KIDDIE, M.T.
1333
MC KINLEY, W.P.
0877
MC KINLEY-MC KEE, J.S.
5445
MC KINNEY, A.S.
8375*
MC LACHLIN, A.D.
8970, 9184
MC LAUGHLIN, C.W.
8402
MC LAUGHLIN, C.W., JR.
3298
MC LAUGHLIN, P.
7948
MC LAUGHLIN, W.T.
2562
MC LEAN, A.E.M.
0140, 2135, 8341
MC LEAN, D.M.
6172
MC LEAN, D.W.
0187*
MC LEAN, K.H.
2841
MC LEAN, P.
7144*
MC LEAN, S.
7061*
MC MACKEN, M.L.
7896*
MC MAHON, J.F.
7767
MC MANUS, J.E.
2703
MC MANUS, J.P.A.
0496*, 2762*, 8987*,
8988*
MC MICHAEL, S.
7612
MC MILLAN, B.
3916
MC MINN, R.M.H.
6314
MC NAIR, T.J.
4550
MC NAMARA, H.
0194*, 2891*, 4711*,
6611*
MC NAMARA, J.J.
3491
MC NARY, W.F.
3790*, 5479*
MC NEILL, J.R.
6500
MC NEILLY, W.J.
4019*
MC NICHOLL, B.
2691
MC PHERSON, J.F,
7281
MC QUARRIE, D.G.
1643
MC QUILLAN, B.P.
2885
MC RAE, J.
5650*
MC SHERRY, C.K.
1455*, 1459*, 4287,
5317
MC SWAIN, B.
1081, 7475
MC TERMAN, M.B.
3049
MC VAY, C.B.
3399, 8819
MC WILLIAM, R.A.
4554
EAD, D.K.
2295
MEADE, R.C.
7852*
MEADOWS, J.A., JR.
6597

MEADOWS, J.S.
0895, 3192
MEARRICK, P.T.
0758*
MEDDA, A.
2239, 9267
MEDEIROS, L.O.
8544
MEDGYES, A.
8537
MEDICI, A.
5306
MEDINA, L.A.
0230
MEDINA, V.J.
7108*
MEDLINE, A.
4443*
MEDOFF, G.
2086
MEDVEDEVA, N.T.
5710, 7267
MEEKS, S.A.
3216
MEENAN, F.O.C.
0416
MEEROFF, M.
4539, 4624
MEEUWISSE, G.
5371
MEEUWISSE, G.W.
2686*, 3453, 5084
MEGHAL, S.K.
8627*
MEHDIRATTA, K.S.
6719
MEHNERT, W.H.
5228
MEHROTRA, B.K.
1064
MEHTA, A.
9273
MEHTA, A.J.
4686
MEHTA, A.R.
2705
MEHTA, J.B.
2901
MEIER, A.L.
2896, 6797, 7643
MEIER-RUGE, W.
3920, 6717
MEIGNIE, P.
1894
MEIJER, D.K.F.
5485*
MEIKLE, A.W.
7162
MEILHAC, B.
4982
MEINE, J.
6627
MEIRA, J.A.
4492
MEISSNER, D.
4494, 5628*
MEITUS, M.L.
9210
MEJBAUM-KATZENELLENBOGEN, W.
3854
MEJIA-VARELA, A.
1062
MEKATA, H.
7158*
MEKEL, R.C.P.M.
3664*
MEKHJIAN, H.S.
7060*
MEL, D.M.
3762
MELA, L.
2430
MELAN, F.
3830
MELANCON, M.J., JR.
3226*
MELARTIN, L.
2879
MELBY, E.C.
2862
MELCHER, D.H.
3335
MELCHIONDA, N.
0922, 4168, 8843
MELDOLESI, J.
3813*
MELENDEZ, J.R.
1292
MELGAR, A.
0277, 4929
MELICHAR, J.
4330*
MELIUS, P.
6413*
MELJNIKOV, R.A.
1244
MELLA, B.A.
2870*
MELLIFRE, D.
2235, 5145
MELLITS, E.D.
4829*
MELLMAN, W.J.
8273*
MELMAN, E.P.
8002
MELMED, R.N.
3153*
MELNICK, J.L.
3640, 6981
MELNIKOV, P.P.
1296
MELNIKOV, YU.L.
2830
MELNIKOVA, V.P.
5804
MELO, J.DEP., JR.
4674
MELO, J.R.DA C.
6700
MELONAS, J.
9285
MELZER, M.J.
2601
MEMTEANU, E.
0046
MENA, L.G.
1875
MENAGER, A.
9178
MENAGER, C.
9178
MENAKANIT, W.
0554
MENCIA, F.
4622
MENDA, R.K.
7476
MENDE, D.
7964
MENDELOFF, A.I.
1301, 3507*, 4185*,558
MENDELOFF, J.
5003
MENDENHALL, C.L.
0836*, 0837*
MENDEZ ROMERO, A.L.
4486
MENDIRATTA, S.
3599
MENDLER, N.
5615*
MENDOZA, C.B., JR.
5070, 5113, 7389
MENE, S.
0623
MENENDEZ-CORRADA, R.
3770*
MENENTI, A.
4207
MENG, C.H.
1807*
MENGE, H.
7827*
MENGUY, R.
2567, 3027*, 3909*
MENICK, F.
5047, 8462
MENICK, F.J.
5047
MENNINI, G.
2662
MENSHIKOV, F.K.
0946*
MENSI, E.
4239
MENSORIO, C.
0995
MENTOURI, B.
6201
MERANZE, D.R.
8086*
MERAVIGLIA, A.
5896
MERCADIER, M.
2235
MERENDINO, K.A.
7296*
MEREVEILLE, P.
0592
MERGNER, W.
9271
MERIKAS, G.E.
6087, 7630

MERILLON, H.
5346, 9075
MERKELBACH, J.W.
4165
MERKER, H.
0420
MERKLE, F.
4676
MERKOW, L.P.
1754
MERKULOVA, I.S.
3116
MERLEVEDE, W.
0732*
MERLO, G.
8235
MERMET, J.
7608
MERRITT, A.M.
6394*
MERRITT, C.B.
4574*
MERSHEIMER, W.L.
5900
MERSSERCHMITT, J.
5294
MERTENS, E.
8756
MERTON, B.
4364*
MERTZ, D.P.
3660, 4761*, 4805*,
6396*, 8591
MERVEILLE, P.
6803
MERZ, W.
5892
MERZEL, J.
1567*
MESCHISHEN, I.F.
3178
MESHALKIN, I.N.
7367
MESLIN, J.C.
8694
MESMACQUE, R.
8471
MESSERSMITH, J.K.
5793
MESSMER, E.
8830*
MESSMER, K.
5338
MESTER, E.
6927
MESTYAN, J.
2337*
METAIRIE-SIMON, P.
0374
METAYER, J.
5264, 5764*, 6683*,
6686*
METAYER, P.
8876, 9089
METER, H.M., JR.
2106*
METTON, A.
7745
METTRICK, D.F.
9289
METZ, G.
7564
METZ, J.
6945*, 7564
METZGER, L.E.
8672
METZGER, R.P.
6465
METZGER, S.A.
6465
METZL, J.
0445
MEULENDIJK, P.N.
0116
MEUNIER, P.
0410*
MEUWISSEN, H.J.
4130*
MEYER, B.
3523
MEYER, H.A.
9237
MEYER, J.H.
8597*, 8599*
MEYER, O.O.
1432
MEYER, R.R.
6474
MEYER, U.
5609
MEYER-BERTENRATH, I.G.
6326
MEYER-BURG, J.
0180*, 0207, 1824,
6869
MEYER-FURST, P.
6541
MEYER ZUM BUSCHENFELDE, K.H.
9148
MEYERS, H.I.
8142*
MEYERS, M.A.
3278, 3469
MEYERS, R.M.
1528*
MEYMANDI
8231
MEZA SEGURA, J.
4272
MEZZANO, A.
4392, 4560, 8803
MIA, A.S.
5205
MIALHE, C.
8656
MICANOVIC, V.
2792
MICARELLI, A.
9165
MICCOLIS, N.
3481
MICELI, R.
4023
MICHAEL, A.I.
2244
MICHAELS, M.
0288, 8112
MICHAILOV, V.
8716
MICHALIK, T.
0150
MICHALOPOULOS, S.
0115
MICHALSKA, L.
0034
MICHAUD, J.L.
0694
MICHEL, C.
5624
MICHEL, F.
6724
MICHEL, H.
2903
MICHEL, J.F.
8500
MICHEL, O.
3856
MICHEL, R.
3849, 3850, 3851,
8490
MICHEL, W.
6576
MICHELETTI, J.
5172*
MICHELETTI, P.C.
4631
MICHELI, E.
1621
MICHELL, R.H.
5430*
MICHELSEN, E.G.
2941
MICHETTI, P.
0421, 8937, 8994
MICHIELS, R.
4352
MICULINIC, T.
6495
MIDDLETON, A.W.
3016
MIDFORD, T.
0931
MIDTVEDT, T.
2191*, 4790*, 6608*
MIEDERER, S.E.
0185*, 2382, 4180,
8595
MIETKIEWSKI, K.
3622, 4444*
MIETTINEN, T.
0105
MIGAS, E.
4357
MIGASENA, P.
6275
MIGITA, T.
0224
MIGLIO, F.
8771, 8843
MIGLIORINI, R.H.
9003*
MIGNON, F.
5952
MIGNON, M.
2389, 4076

MIGUEL DE VELASCO, J.E.
8869
MIHAESCU, E.
4199
MIHAJLOVIC, N.
4227
MIHOV, HR.
1540
MIKAELOFF, P.
5213
MIKAT, B.
8861
MIKEL, U.
8505•
MIKHAIL, J.W.
3702•
MIKHAILOV, G.A.
5473
MIKHAILOV, M.M.
5724
MIKHAILOV, V.A.
5702
MIKHALCHUK, R.N.
8966
MIKI, Y.
9217
MIKIRTUMOV, S.M.
5803
MIKLASZEWSKA, J.
1475
MIKULECKY, M.
4039
MIKUNI, M.
7558
MILADINOVIC, T.P.
3762
MILANESE, J.C.
4630
MILCH, H.
2977
MILCZEWSKI, K.E.
0090•, 0605•
MILDSCHUH, W.
2152, 5234
MILENOV, K.
3887•
MILES, P.L.
0171
MILEWSKI, B.
8016
MILINE, J.
3902
MILITAREV, Y.M.
7458
MILLA, M.D.
0720
MILLAN, V.G.
4110
MILLARD, F.J.C.
5612•
MILLARD, P.R.
1583•
MILLBURN, P.
3165•
MILLER, C.G.
5168•
MILLER, D.L.
1632•
MILLER, D.S.
1728
MILLER, E.C.
0931, 6433•
MILLER, G.
8709•
MILLER, H.W.
4708•
MILLER, H.L.
7419
MILLER, J.A.
6433•
MILLER, J.H.
7093•
MILLER, L.H.
1556
MILLER, L.L.
2390, 6473, 8616•
MILLER, L.R.
6228
MILLER, M.J.
8021
MILLER, N.L.
3011
MILLER, R.E.
0369, 2673
MILLER, R.F.
8941•
MILLER, R.H.
0254
MILLER, R.N.
1707•
MILLER, S.A.
6440•
MILLER, T.B., JR.
7951
MILLER, T.R.
4377
MILLER, W.A.
5099
MILLER, W.J.
1800•
MILLER, W.L.
2075, 8649, 8654
MILLER, W.T.
2006
MILLISER, R.V.
5906
MILLMAN, I.
5268, 7607, 7622
MILLONIG, G.
9138
MILLS, J.N.
5538
MILLS, R.R.
3114
MILNE, M.D.
5475•, 8166•
MILNER, G.
0848•
MILONOV, O.B.
2914, 7286
MILOSLAVSKY, V.A.
0219
MILSTOC, M.
0285
MILTENYI, M.
4637
MILTON-THOMPSON, G.J.
0399, 4186•
MILUNSKY, A.
0233
MILUSEV, G.
1540
MILYUTINA, V.N.
7086
MIMURA, H.
6786, 7596
MIMURA, T.
7322•
MIMURO, K.
3058
MINCEV, M.
1403
MINCIS, M.
4104
MINDELL, H.J.
1889
MINDER, R.
7944
MINERVINI, R.
4921
MINETTI, A.
3361
MINICH, O.T.
0735•
MININ, V.V.
8150
MINKOWITZ, S.
4474•
MINTS, V.Y.
0219, 5842
MINVIELLE, L.
0493
MIR, L.
2726
MIRAGLIA, R.J.
0889
MIRAND, E.A.
2862
MIRANDA, G.
3855
MIRANDA, M.
4659•, 5403
MIRANDA, N.E.
0705
MIRANTI, P.J.
3847
MIRAVET, L.
5159
MIRCHEFF, A.K.
7836•
MIRIZIO, A.
0570
MIRKHODZHAEV, A.KH.
6040
MIRO, P.G.
0376
MIROSHNICHENKO, I.V.
7205
MIR PALLARDO, J.
8901
MIRSKY, A.F.
0832•
MIRZA, A.M.
2863

MIRZAEV, A.P.
7334
MIRZOYAN, S.I.
0073
MISAKI, F.
0269*, 2542, 6545,
7342
MISCALL, B.G.
4287
MISHALANY, H.
0361*
MISHKIN, S.
2339*
MISIEWICZ, J.J.
0427*, 4264*, 5090*
MISITI, G.
1054, 1867, 1909,
1911, 1985, 2095,
2174, 2916
MISK, R.
0568
MISRA, N.C.
7696
MISRA, P.
7125*
MISRA, R.C.
6280
MISSEN, A.J.B.
8968
MISSMAHL, H.P.
9166
MISTERKA, S.
0300
MISTILIS, S.P.
0758*, 4502
MISTRY, S.P.
4836*, 5569*, 7935,
7949
MISUGI, K.
2780
MISZPUTEN, S.J.
7565
MITASOV, I.G.
8254
MITCHELL, A.V.
5344
MITCHELL, C.G.
6766*
MITCHELL, D.N.
0398*, 8157*
MITCHELL, J.R.
3056
MITCHELL, M.P.
0850*
MITCHENKO, I.K.
5712
MITCHINSON, M.J.
0696
MITIN, K.S.
7232
MITJAVILA, S.
4780, 5233
MITOV, F.
1209
MITRA, N.K.
3236
MITRA, R.
2192*, 2193*
MITRA, R.C.
1212*, 4571*, 4575*,
4587, 8928*, 9201*
MITRA, R.S.
3069, 7147*
MITRA, S.K.
1499
MITROFANOFF, P.
8793
MITROPOLSKAYA, A.N.
1310
MITSUHASHI, S.
2224
MITSUNO, Y.
6043
MITSUYUKI, A.
0308
MITTMANN, W.
9124
MITTY, W.F., JR.
2007
MITUS, A.
2836, 7984*
MITYUSHOVA, N.M.
3091
MITZKAT, H.J.
5609
MITZNEGG, P.
5166*
MIYA, T.S.
3102*, 7062*
MIYACHI, M.
3269*
MIYAI, K.
8330
MIYAKE, T.
4049, 8632*, 8711*,
8887
MIYAKUNI, T.
3198
MIYASHITA, M.
3245*, 4633
MIYATA, K.
8632*
MIYAWAKI, H.
4988
MIYAZAKI, F.
3231
MIYOSHI, A.
4593, 5787, 8727,
8887, 8888
MIYOSHI, T.
7054*
MIZANUR RAHMAN, A.S.M.
6973
MIZGIREVA, M.F.
7755
MIZON, J.P.
2142, 4413, 5294
MIZOULE, J.
8675
MIZSPUTEN, S.J.
3539
MIZUNO, N.
2327*
MIZUNO, T.
4697*, 7158*
MIZUOKA, S.
1078
MIZUTANI, H.
9217
MIZUTANI, S.
7162
MJOLNEROD, O.K.
2585
MOCHMANN, H.
8720, 8721, 8722,
8723
MOCHULSKY, A.S.
7288
MOCK, J.A.
3292
MODAI, M.
3637, 4475*, 5273
MODENA, J.L.P.
8870
MODIANO, C.
1484
MOERTEL, C.G.
1222*, 2246, 3472,
8443
MOFFA, D.J.
1783*
MOGENA, H.G.
1898
MOGOS, M.
9183
MOGUCHEV, V.M.
7662
MOHADJER, S.
2228
MOHAMADI, M.
2665
MOHAN, G.R.
2227
MOHAN, M.
6414
MOHANTY, S.K.
1952
MOHIUDDIN, A.
0028*
MOHME-LUNDHOLM, E.
7854*
MOHR, J.R.
7609
MOHR, P.
8993
MOHR, W.
4676
MOHSENIN, H.
4668
MOINE, D.
3371, 9266
MOIR, N.J.
8525
MOISEEV, S.G.
7688
MOLANDER, D.W.
4016*, 4362*, 4380
MOLAS, G.
9039*
MOLDAVE, K.
1618
MOLES, J.B.
4146, 8899
MOLFINO, F.
0360*

MOLIMARD, R.
4835*, 4851, 4852,
6803
MOLINA, E.
1308, 2202
MOLINARI, F.
2149
MOLLA, A.
2948*
MOLLARD, P.
0436, 1012, 4956
MOLLER, C.
5960*, 8184
MOLLER, N.
8714
MOLLIN, D.L.
6184
MOLLO, F.
3992*
MOLNAR, J.
1652
MON, A.
1297
MONACO, G.
2598
MONACO, M.
8912
MONANGE, C.
8956
MONCH, E.
8741
MONCKEBERG, F.
6934*
MONDAL, A.
1212*, 3754, 4571*,
4575*, 8928*, 9201*
MONDINO, H.
1415*
MONDON, C.E.
4837*
MONG, F.N.
2396*
MONGA, P.M.
3761
MONGES, H.
1729, 3125, 4796*,
6346
MONGUIDI, G.
5051
MONIF, G.R.G.
8482
MONK, M.
1301, 3507*
MONNERON, A.
3817*
MONNET, P.
6166
MONOD-BROCA, P.
4901, 5351
MONSAINGEON, A.
0816*
MONSALLIER, F.
6069
MONSBOURGH, M.J.
2968
MONSON, R.R.
4182*, 5029, 5838,
5839
MONTAGNANI, M.
3918
MONTAGNINI, R.
0377
MONTALBAMO, M.
4238
MONTANEZ, O.
6729
MONTASIR, M.
1526*
MONTEIL, R.
5347
MONTERO, C.
9144
MONTESSORI, G.
2733
MONTET, J.C.
3175
MONTGOMERY, C.
8055*, 8079
MONTGOMERY, D.A.D.
3443*
MONTI, M.
4123, 8797
MONTINI, T.
2820
MONTORI, A.
4557
MONTRONI, M.
4500, 6874, 9145
MONTZ, R.
5251*
MOODY, A.J.
5614*
MOODY, F.G.
1904, 7833*
MOODY, G.D.
3761
MOOLTEN, F.L.
2455, 8620*
MOON, H.W.
2945*
MOONEY, C.S.
1791
MOORE, E.W.
0191*, 3908*, 8548*
MOORE, F.D.
2069
MOORE, F.T.
3922
MOORE, G.T.
4880
MOORE, J.P.
5934
MOORE, M.
1581*
MOORE, M.R.
5563*
MOORE, R.B.
2344*
MOORE, T.C.
2670, 3479
MOORE, W.S.
3737
MOR, G.
7028*
MORA, L.O.
8342
MORALES, R.
5184, 5456
MORALEZ, T.
2743
MORALI, A.
4409
MORAN-RODRIGUEZ; E.
1062
MORATO, J.M.A.
2778
MORAVA, E.
6350*
MORAWIEC, H.
0513
MORAWSKI, S.G.
3094*
MORDIA, M.
4228
MOREAU, C.
5187
MOREAU, J.
8140
MOREAU, J.F.
5023
MOREAU, P.
6166
MOREAUX, J.
0511*
MORECKI, R.
3420*
MOREL, C.J.
3147
MORELLE, J.
9073
MORERE, P.
9089
MORETTI, A.
0831*
MORETTI, G.
3653, 5181, 591
MOREY, K.S.
3070
MORFIT, H.M.
0988
MORGAN, A.
1330, 8187, 8252
MORGAN, J.C.
7579*
MORGAN, J.P.
6506
MORGAN, O.S.
0804
MORGAN, R.
5505
MORGAN, R.G.H.
4248*
MORGAN, W.W.
3357
MORGANO, G.
4483
MORGANROTH, J.
8162
MORGANTHALER, F.R.
6852, 7728
MORGENSTERN, L.
2934
MORGENTHALER, F.
5198

MORGER, R.
4094, 6717
MORGNER, K.D.
0560
MORI, K.
3946•
MORI, T.
7083
MORIARTY, D.J.
3427
MORIGA, M.
5787, 8887, 8888
MORIN, G.
0959, 2532
MORIOKA, T.
7054•
MORIOKA, W.
8832
MORISAKA, K.
2350, 5503
MORISAWA, T.
9203
MORISOT, P.
9092
MORISSET, J.A.
7882
MORISSETTE, J.J.
2624
MORITA, E.T.
4032
MORITA, M.
0729•
MORITSUGU, Y.
9217
MORITZ, K.U.
8634•
MORITZ, M.
1507•
MORIUCHI, S.
6355•
MORIWAKI, K.
4850
MORIYA, M.
5875
MORIYAMA, Y.
3245•, 3659
MORK, F.E., JR.
3358
MORLAND, J.
6075, 7155•
MORON, K.
0200
MORONI, J.M.
0679
MOROSI, H.J.
6127
MOROSINI, S.
1485, 9007
MOROTOMI, I.
6448•
MOROWITZ, D.A.
0498•, 8921•
MOROZ, I.M.
5871
MOROZOVA, I.V.
1123
MORPIN-ALLERON, M.
2849
MORRA, L.
4150
MORRE, D.J.
1615, 2297, 5432•
MORRIS, C.H.
3102•
MORRIS, D.L.
5445
MORRIS, G.K.
6249
MORRIS, H.P.
0764•, 1353•, 1766,
2322, 3181, 3810•,
3935•, 6287•, 6762•,
6816, 7033•, 7537•,
8636•
MORRISEY, W.J.
8900
MORRISON, A.R.
5583•
MORRISON, G.R.
2885
MORRISSEY, J.F.
4927
MORRISSEY, S.M.
5537, 5549
MORROW, A.G.
0608•, 2104•
MORROW, R.H.
2198
MORSE, W.H.
4954
MORSON, B.
5882
MORSON, B.C.
1971•, 3769•, 4028,
8160, 8207
MORTENSON, R.A.
5650•
MORTIMORE, G.E.
4837•
MORTINEZ TORO, N.
3990
MORTON, A.L.
0545
MORTON, D.L.
3714
MORTON, D.M.
3210
MORTON, J.H.
6185
MORUZZI, G.
8635•
MOSBACH, E.H.
7133•
MOSCARELLO, M.A.
1592
MOSCATELLI, P.
3442•
MOSCATI, L.
2178
MOSCHINSKI, D.
4955, 8060
MOSCHOUTIS, N.
5397•
MOSCOWITZ, A.
8699
MOSELEY, R.V.
3585
MOSER, R.
6196, 6985
MOSES, H.L.
6059•
MOSES, I.
1967
MOSHER, W.F.
2605, 3397
MOSHYEDI, A.
8067
MOSLANDER, V.
4143
MOSLEY, J.M.
6865
MOSLEY, W.H.
3706•, 3726, 4568•,
4570•, 4586, 7697
MOSS, G.S.
7683•
MOSSAKOWSKI, M.J.
8272•
MOSSE, A.
4408, 4435, 5187,
8383
MOSSINI, A.
3747, 5051
MOTIN, J.
3598
MOTOCU, M.
1474
MOTOKI, T.
6024
MOTSAY, G.J.
3182
MOTT, R.
0588
MOTTA, L.
5685
MOTTET, N.K.
7297
MOUCHET, A.
4536, 4985, 5957,
MOULE, Y.
5600, 8534
8256
MOULIN, G.
6724
MOULINIER, B.
2798, 3530, 5979
MOULLE, P.
0671, 6020, 8451,
8733
MOUNIER-KUHN, P.
8805
MOUNTAIN, J.C.
3462•
MOURET, P.
4407
MOURIDSEN, H.
1020•
MOURIQUAND, C.
0206
MOURIQUAND, J.
0206
MOUTAFFIAN, J.J.
5016
MOUZAS, G.I.
7905•

MOVASSAGHI, N.
2928
MOVCHUN, A.A.
2914
MOYLAN, J.P., JR.
7296*
MOYNIHAN, B.
1272
MOYSON, F.
8796
MOZHAYEV, G.A.
6066
MOZO, M.R.
4621
MOZOLEWSKI, E.
0239
MOZSIK, G.
1022*, 1023*, 3914,
5529*, 6405
MSUYA, P.M.
1737
MUCKLOW, E.S.
8437
MUELLER, K.
5333
MUELLER, R.A.
1781
MUHAMMAD, S.
3646
MUHE, E.
4529, 9155
MUHLENBERGER, G.
6297*
MUIR, K.M.
2512*
MUIR, R.W.
6134
MUIS, L.F.
6995
MUJAHED, Z.
0957
MUKERJFE, A.B.
8393, 9128
MUKERJEE, P.
1925*
MUKERJI, A.C.
1303
MUKHERJEA, A.K.
1552, 6258
MUKHERJEE, C.L.
2813
MUKHERJEE, S.P.
8565
MUKHERJI, A.K.
7423
MUKHERJI, J.P.
1349*
MUKHERJI, S.
3710
MULCARE, D.B.
8178
MULDOWNEY, F.P.
1505*, 7436*
MULEER, R.
2042
MULET, J.
1693
MULHOLLAND, D.D.
8030
MULINOS, M.G.
0435
MULL, R.L.
2452
MULLANE, J.F.
7573, 7638
MULLEN, D.C.
2704
MULLENS, J.E.
2729
MULLER, C.A.
6520*
MULLER, E.
3607, 4955, 8076
MULLER, H.A.
6345
MULLER, H.O.
5657*
MULLER, J.M.
0627
MULLER, K.H.
9292
MULLER, M.
6747
MULLER, S.
4417
MULLER, S.A.
0640
MULLER, U.
8596
MULLER, W.
6196
MULLER, W.A.
8493
MULLER-OERLINGHAUSEN, B.
6153
MULLER-RUCHHOLTZ, W.
7823, 7983*
MULLER-WIEFEL, H.
9235
MULLER-WIELAND, K.
0204, 7512, 8557*
MULLIGAN, W.
3002*
MULLOCK, B.M.
0855*
MULTANI, J.S.
7785*
MULTARI, G.
1104
MUNAKATA, M.
7222*
MUNASINGHE, D.R.
6750
MUNAWER, N.
1524
MUNCK, B.G.
5480*
MUNDAY, K.A.
1633*, 7834*
MUNIZ GONZALEZ, J.
2664
MUNIZ RUIZ, C.
4420
MUNKACSI, I.
1325
MUNN, E.A.
5434*
MUNOZ IBANEZ, M.
8901
MUNRO, A.I.
8025
MUNRO, H.N.
3222, 5561*
MUNSCH, N.
6461
MUNSTER, A.M.
7480
MUNTENER, M.
8846
MUNTWYLER, F.
0893
MURAD, H.
3781
MURAKAMI, F.
6023
MURAKAMI, K.
0269*
MURAKAMI, M.
3863
MURAKAMI, Y.
7342
MURALI, D.K.
7035*
MURAMATSU, M.
0856*
MURASE, K.
1886
MURASHEVA, Z.M.
6039, 7427, 7692
MURASHIMA, R.
2367*
MURAT, J.
4645, 5014
MURAT, J.E.
3922
MURATA, F.
0737*, 8087*
MURATA, I.
5388
MURATA, T.
0059, 5547
MURAVIEVA, N.K.
7252
MURDOCH, J.L.
3699*
MURET, G.
8857
MURIKAMI, K.
2542, 6545
MURIKAMI, S.
6863
MURISON, G.
0892
MURLAGA, S.E.
8046
MUROYA, K.
6959
MURPHREE, T.
6276
MURPHY, G.M.
6764*
MURPHY, G.P.
2862
MURRATORE, A.
4483

MURRAY, D.
1966
MURRAY, G.M.
0409*
MURRAY, J.
2329*
MURRAY, J.E.
7305
MURRAY, J.F., JR.
2450
MURRAY, T.S.
7623
MURRAY-LYON, I.M.
0967, 8301
MURTHY, K.S.
4477*
MURTHY, L.
1740
MURTY, D.K.
3718
MURUA, L.W.
1323*
MUSABAEVA, L.I.
8791*
MUSAEV, A.
5551
MUSAEV, A.M.
0074
MUSATI, C.C.
7099
MUSCATELLO, U.
6313
MUSHINA, L.N.
0974
MUSHINSKI, J.F.
1777
MUSIATOWICZ, B.
2789, 2791
MUSNITSKAYA, E.N.
7399
MUSSA, G.C.
5719, 8755
MUSSELMAN, D.L.
8553*
MUSSO, M.
8235
MUSTAFA, M.G.
0841*
MUSTAFA, S.J.
3818*
MUSTALA, O.
2659*, 3098*
MUSTALA, O.O.
2900
MUSTARD, R.A.
5747
MUSTE, H.
6842
MUSUMECI-BELFIORE, S.
3281
MUSUMECI-TUTTOBENE, S.
3281
MUSZBEK, L.
7200
MUTA, N.
6959
MUTABAKANI, H.
2598
MUTALIK, G.S.
8494
MUTIG, D.
0531*
MUTING, D.
9053
MUTO, H.
1609
MUTO, T.
4565*, 4566*, 5785,
8881
MUTT, V.
7095*
MUZAFAROV, A.I.
3003
MUZQUIZ SOBERON, R.
3603
MUZZANA, F.
1375, 4156, 4501
MYAGKOV, A.V.
7227
MYANT, N.B.
8570
MYERS, F.K.
6228
MYERS, M.B.
5658*
MYERS, R.N.
7568, 8401
MYERS, R.S.
3519, 3527
MYERS, R.T.
5836, 5908
MYERS, S.L.
6260
MYLLARNIEMI, H.
3663*
MYNORS, J.M.
7002
MYREN, J.
1207*, 1294*, 1512,
7327*
MYSHKIN, K.I.
7234
MYSIK, M.
4519
MYSZKA, S.
0508
NAAS, W.
4494
NABIH, A.E.
1356
NABSETH, D.C.
2793
NACCARATO, R.
7599*, 8387, 9044,
9117, 9133
NADAI, T.
4778
NADAL, C.
8520
NADAL, M.
4537
NADAR, S.A.
7680*
NADEL, J.
2500*
NADEZHINA, I.M.
7225
NADJAFI, A.
4530
NAEF, A.P.
5739, 8798
NAESS, P.O.
7424
NAFRADI, J.
4807*
NAFSTAD, I.
5827*
NAGAI, K.
7916*
NAGAI, N.
6958
NAGAKAWA, H.
0134
NAGAKUBO, I.
8507*
NAGANT DE DEUZCHAISNES, C.
8925
NAGASAKO, K.
6559
NAGASAWA, D.
6959
NAGASE, K.
1596
NAGASHIMA, H.
5669
NAGATA, T.
2380
NAGAYO, T.
7534*
NAGEL, C.B.
7393
NAGEL, M.
1516
NAGELE, E.
5012, 5881
NAGY, G.S.
0366
NAGY, L.S.
2977
NAGY, M.
5750
NAGY, T.
0375
NAHON, M.
8495
NAHRA, K.S.
3571
NAHRWOLD, D.L.
2907*
NAHUM, H.
4408, 4435, 5187,
6808
NAIDU, S.
3410
NAIKEN, V.S.
8432
NAIR, K.P.R.
1554, 6263
NAIR, P.P.
5587*
NAIR, V.
0842*, 2401*
NAISH, J.M.
3508*
NAITO, C.
0825*

NAITO, S.
5964
NAJARIAN, J.S.
6740
NAJJAR, F.
0361*
NAJJAR, S.S.
6965
NAJMAN, A.
0591
NAKACHE, J.P.
3652
NAKADA, Y.
7597, 8316*
NAKAGAWA, E.
1814
NAKAGAWA, M.
4565*, 4566*
NAKAGAWA, S.
5388
NAKAGAWA, Y.
6516*, 6848, 8004*
NAKAHAMA, S.
1597, 1598, 1599
NAKAI, A.
3269*
NAKAJIMA, H.
9060
NAKAJIMA, K.
6479
NAKAJIMA, N.
4979
NAKAJIMA, S.
2369*, 3135*, 4809,
5535*, 5552*, 6666
NAKAMOTO, Y.
2350, 5503
NAKAMURA, A.
3994*, 4607
NAKAMURA, K.
1874
NAKAMURA, M.
4979, 6592
NAKAMURA, N.
2103
NAKAMURA, S.
2509*, 3148, 3300,
8321*
NAKAMURA, T.
2509*, 3300, 5006,
7042, 8321*
NAKANISHI, K.
3572
NAKANISHI, M.
4856
NAKANISHI, S.
0823*
NAKANO, H.
8004*
NAKANO, K.
7893*
NAKANO, T.
4565*
NAKAO, C.
9217
NAKAO, Y.
5954
NAKASHIMA, K.
6290*
NAKATA, H.
1814, 2224, 7054*
NAKATA, K.
0100*
NAKATAMA, F.
1770
NAKATANI, Y.
2289*
NAKAYAMA, K.
3272, 6645
NAKAZATO, Y.
5518*, 5520.
NAKAZAWA, S.
5617*, 6169, 7118*
NALIN, D.R.
6973
NAM, Y.H.
6030
NAMBIAR, B.
6267
NANBA, R.
6384
NANCE, F.C.
8837
NANCE, S.I.
1586
NANDA KUMAR, N.V.
8659
NANDI, R.L.
3711, 7020
NANDRUP, CL.
2575
NANNELLI, U.
8710*
NANU, T.
0046
NAOE, S.
8910
NAOME, J.
5402
NAPALKOV, P.N.
1327
NAPOLI, D.
4023
NAPOLITANO, A.
4538
NAPOLITANO, D.
9204
NAQVI, M.A.
4218
NARAY, A.
6303*
NARAYAN, A.S.
5358
NARAYAN, K.A.
6295*, 6762*
NARAYANAN, A.S.
1590
NARBONA, B.
2202, 2782
NARCESSIAN, P.
8685*
NARCETTI, L.
0530*, 2832
NARDELLA, P.
1766
NARDI, G.L.
6916, 7516, 9172
NARDI, R.D.
0323
NARDUCCI, P.
3985, 3988
NARTSISSOV, T.V.
7692
NARYCHEV, A.A.
7459
NASAROV, L.U.
0055
NASHAT, S.
0533*
NASIO, J.
2958, 4625
NASJLETTI, A.
4504*
NASR, K.
3435*
NASRALLAH, S.M.
8168*
NASSAL, J.
8000
NASSAR, I.
1356
NASSER, S.S.
3351
NASSIM, J.R.
5612*
NASTA, A.G.
8403
NASU, T.
5043
NATALE, C.
0345, 1892
NATARAJAN, K.
7613, 8348*
NATELSON, E.A.
1450
NATELSON, S.
2869*
NATH, M.C.
0129, 0866, 8664
NATH, N.
0129
NATHAN, H.
6946, 8444
NATHANSON, D.S.
4218
NATZSCHKA, K.
8782
NAUDIN, G.
1514, 5292
NAUMIK, A.
6647
NAUPERT, C.
4653
NAVAB, F.
5475*, 8164*, 8170
NAVARRO, V.
2842
NAVATEL
5016
NAVERT, H.
0802*
NAVON, R.S.
4838*
NAVRATIL, H.
9086

NAWA, S.
2078
NAYAK, N.C.
0635*
NAYAK, P.K.
0846*, 1717*
NAYLOR, H.G.
8201
NAYUDU, P.R.V.
0171
NAZLI GAD-EL-MAWLA, A.A.
0534*
N'DOYE, M'B.
6623
NEAFIE, R.C.
3014
NEAL, C.J., JR.
0484
NEAL, G.E.
4821*
NEAL, J.
3340*
NEAL, R.A.
3769*
NEALE, G.
3438*, 3709*
NEBESAR, R.A.
0958, 3560, 7220*
NECHAI, A.I.
1476, 7669
NECHELES, H.
0789*, 1862, 5521
NEDBAL, J.
4310
NEDKOVA-BRATANOWA, N.
3509*
NEDOVESOVA, Z.P.
0873, 3088
NEEDHAM, C.D.
1132
NEELAKANTAN, C.
3703*
NEELY, J.
3701*
NEESGAARD, I.
1020*
NEGISHI, M.
6315
NEGRET, J.P.
9221
NEGRI, L.
9195
NEGRI, M.
2115
NEGRI, S.
3082, 7934, 8786
NEGRONE, G.
2663, 9204
NEIDERHISER, D.H.
1698*
NEIKO, E.M.
3568
NEIKOV, G.N.
1163, 1243, 6144,
7223
NEILSEN, J.
3475
NEIMAN, B.H.
5906
NEIMANN, N.
8954
NEIRA PAVON, O.A.
4672
NEKLYUDOVA, E.A.
6011
NEKRASOV, L.P.
7754
NEL, W.
5457
NELSEN, T.S.
0803*, 4911
NELSON, A.
5799
NELSON, D.P.
2190*
NELSON, K.M.
4776
NELSON, P.
3956
NELSON, R.A.
3257, 5489*
NELSON, R.J.
3586, 5762
NELSON, R.S.
4448*, 4912, 5237,
7237, 8436
NEMANICH, G.J.
4201
NEMECHEK, C.
3095*
NEMESCH, W.W.
8736
NEMETH, P.
6753
NEMETH, P.E.
1325
NEMTEANU, G.
0046
NEMYKH, V.N.
6013
NENIKOVA-BOGDANOVICH, A.I.
5712
NEOGY, K.N.
2001, 2192*, 2193*,
6181, 7737
NERAD, V.
0109
NERSTROM, B.
5086
NESCHIS, M.
5649*
NESMOZ, J.
2378, 7323*
NESTEROVA, V.B.
0689
NESTOR FLORES, W.
0463
NETAKHATA, Z.N.
7406
NETO, A.D.P.
1147
NETO, C.A. DAS.
3915
NETO, C.A.H.
1509
NETO, J.M.
2905
NETO, V.A.
2263, 4492
NETTERVILLE, R.
0264
NETTLETON, J.
1261
NETTO, A.C.
7099
NEUFELD, E.F.
6211
NEUHAUS, G.A.
9238
NEUHAUS, O.W.
2330*
NEUHAUSER, E.B.D.
7488
NEUMAIER, F.
0421, 8994
NEUMAN, H.W.
5790
NEUMANN, H.H.
2972
NEUMEISTER, K.
1795
NEUTJENS, F.
5944
NEVADO-RINCON, M.
1511
NEVALAINEN, T.J.
8543
NEVES, J.
0217
NEVILLE, E.D.
7148*
NEVILLE, W.E.
3316
NEVIN, N.C.
2930
NEWEL, K.W.
5357
NEWEY, H.
4760*, 5491*
NEWMAN, G.
0368
NEWMAN, J.
1457*
NEWMAN, P.H.
3586
NEWTON, L.H.
4880
NEWTON, W.T.
1130, 1136, 2370*,
6393*, 8506*, 8582*
NEYA, T.
3129, 6383
NEZAMIS, J.E.
5830*
NEZELOF, C.
7482
NG, E.
2656*
NIAZI, S.P.
6778*
NICEV, V.
1372
NICHELATTI, T.
0284
NICHOL, W.D.
3697*

NICHOLLS, M.R.
3163*
NICHOLSON, C.P., JR.
7668
NICK, W.V.
7702
NICKS, R.
1845
NICOARA, G.
8020
NICOLAE, D.
2206
NICOLAESCU, T.
4040
NICOLAS, F.
8792
NICOLAS, J.P.
3150
NICOLATO, A.
2736
NICOLE, L.
2313
NICOLO, G.
7347
NICOLOFF, D.M.
3392*, 4201
NICULESCU, E.
1474
NIEDERLAND, T.R.
0888
NIEDERMEIER, K.
0085*
NIEDNER, R.
8995
NIELSEN, F.H.
6076
NIELSEN, J.
1981, 8182, 8971
NIELSEN, J.O.
6050
NIELSEN, N.C.
0121
NIELSEN, P.E.
6050, 8085
NIELUBOWICZ, J.
2362
NIEMAN, R.
6862
NIEMANN, E.
0853*
NIEMANN, H.
0252, 2554, 6601
NIESSING, J.
6451*, 7915*
NIETHE, C.M.
0840*
NIETZSCH, W.
4963
NIEWAG, H.O.
2620
NIGRI, G.
6921
NIGRIN, G.
0552, 1355*
NIIJIMA, A.
0923*
NIILO, L.
4884, 5396
NIKAIDO, N.
5786
NIKI, K.
7054*
NIKIFOROV, B.I.
7236
NIKKILA, E.
0105
NIKOLAEV, N.O.
5806
NIKOLENKO, I.S.
5872
NIKOLIC, B.D.
3762
NIKOLSKY, A.D.
6039
NIKULA, T.D.
7549
NILSSON, A.
0087, 0917, 5616*
NILSSON, G.
0795*, 7955
NILSSON, I.M.
4365*
NILSSON, L.H.
5076, 5779
NILSSON, L.H.S.
7245
NILSSON, S.
0102*, 0847*, 6129
NILSSON, T.
5068
NIMMO, J.
4347*
NINI, N.
5097
NINI, W.
5097
NINO, H.
0941*, 0955
NINOMIYA, K.
3269*, 6863
NIOSI, P.
5240, 6088
NIRMALA, L.
5868
NIRZAMUKHAMEDOV, M.R.
7695
NISHI, K.
4778
NISHIDA, H.
5875
NISHIDA, T.
5043
NISHIHARA, H.
6289*
NISHIHARA, T.
6399
NISHIKAWA, K.
7042
NISHIMURA, F.T.
7957
NISHIMURA, H.
8589
NISHIMURA, S.
6341
NISHIMURA, T.
6488
NISHIMURA, Y.
8910
NISHIOKA, S.
2247
NISHISHITA, A.
1640
NISHIUCHI, M.
6828
NISHIZAWA, M.
2542
NISHIZUKA, Y.
7022*
NISIMARU, Y.
3254
NISKANEN, E.
6503, 6504
NISSAN, S.
1257
NISSEN, R.
1920
NISTICO, G.
0780, 7965
NITKIN, A.M.
5937
NITSCHKE, M.
8153
NITULESCU, I.
0077
NITZAN, M.
4261
NIXON, D.A.
6456
NIXON, E.
1963*
NIXON, H.H.
4320
NIXON, J.E.
5442*, 5459; 5460
NIXON, S.E.
4769, 5482*; 5483*
NKWO, A.
8777
NOACH, E.L.
2348
NOAKES, D.E.
8687*
NOBREGA, F.G.
1616
NOCITI, V.
3525
NOCITO, J.
4630
NOCTON, F.
5190
NODA, Y.
1597, 1598, 1599
NODOT, A.
3523
NOFTLE, K.A.
3998
NOGAMI, H.
3122
NOGUCHI, T.
3025*
NOGUERAS, F.M.
2727
NOHARA, H.
4697*

NOIR, B.
3101*
NOIR, B.A.
5241
NOLAN, D.J.
8036
NOLIN, L.E.
3689
NOLL, F.
7809
NOLL, W.E.
7796*
NOMBALLAIS, F.
1238
NOMBALLAIS, G.
0694, 9130
NOMBALLAIS, M.F.
0694
NOMOTO, K.
3026*
NOMURA, K.
8910
NOMURA, Y.
0924*, 8632*
NOONAN, S.M.
6455
NORBACK, D.H.
6058*, 8322*
NORBERG, B.
1935
NORDEN, A.
3446*, 8929*
NORDEN, J.G.
1348*, 2035*,
8696*
NORDENFELT, E.
1430, 2133*, 6101,
6860*
NORDENSTRAND, A.
4920
NORDGREN, H.
7773*
NORDGREN, L.
2376
NORDIP, S.
3442*
NORDLIE, R.C.
3837
NORDMANN, Y.
1703*, 5662
NORDSTROM, C.
3024*, 3103*
NORELLI, M.T.
8359
NORGAARD, F.
6693*
NORGAARD, R.P.
6612*
NORICO, A.P.
1989
NORIKI, H.
5271
NORKUNAS, P.I.
7353
NORKUS, E.P.
7353
NORMAL, A.W.
7836*
NORMAN, A.
0765*, 2191*, 5254*,
6419*, 6608*
NORMAN A.W.
1563*
NORMANN, E.
5820, 8081
NORMANN, T.
1220*
NORO, M.
2247, 5758
NORRED, W.P.
3189
NORTH, L.B.
4990
NORTHAM, J.I.
5830*
NORTHFIELD, T.C.
8425*
NORTHRUP, R.S.
4572*, 4573*
NORTHRUP, S.
5000
NORTON, R.
0262
NORTON, S.J.
3953*
NORUM, K.R.
5167*, 5422*
NOSANCHUK, J.S.
7566
NOSENKO, A.G.
6041
NOSSLIN, B.
1348*, 3268*, 3301
NOTARIO, A.
2431
NOUJAIM, A.A.
7003
NOUR, V.
2797
NOURSE, L.D.
1756
NOVAK, V.
3219, 3224
NOVAKOVICH, R.
0337
NOVARO, S.
2180
NOVELLO, F.
2305, 6317
NOVEROSKE, R.J.
3505
NOVGORODSKAYA, E.M.
7731
NOVIKOFF, A.B.
3115
NOVIKOV, K.V.
1476, 8041
NOVITSKII, A.A.
2439
NOVOSELTSEV, A.E.
7335
NOWACKI, P.E.
1723*
NOWICKI, T.
0508
NOWILL, W.K.
6074
NOWOSLAWSKI, A.
2947*, 5454
NOWOTNY, K.
8859
NOWOTNY, P.
9099
NOYES, D.H.
6390
NOZAWA, F.
1709*
NOZICKOVA, M.
2071
NUGENT, F.W.
3512, 4324
NUGENT, R.G.
2569
NUKI, G.
5206
NULSEN, F.E.
0372
NUMA, S.
0823*
NUMAGUCHI, Y.
1814
NUMANN, P.J.
6876*
NUMISOVICH, B.
0510
NUNES, G.
5238
NUNEZ, J.A.
1362
NURET, R.
6147
NURITDINOV, B.
5551
NUSBAUM, M.
0966, 7752, 8883
NUSSBAUMER, A.
5328
NUSSELT, L.
6053
NUSSLE, D.
2940
NUZZACI, G.
0594
NYGAARD, K.
2191*, 5753, 6608*
NYGAARD, R.T.
3791*
NYHUS, L.M.
2568, 4116, 5733*,
7683*
NYLANDER, G.
1348*, 1389, 3301,
8696*
NYMAN, D.
7717
NYOTH, J.
6756
NYQVIST, A.
1535, 1994
NYQUIST, S.E.
5432*
NYSTROM, B.
0613
NYSTROM, E.
0723*

OAKMAN, N.J.
3940*, 8620*
OANA, A.
0321
OARSHENKOVA, O.I.
5807
OATES, J.A.
3056
OATES, M.D.C.
7772*
OATES, R.K.
1190
OBERHAUSER, E.
0018
OBERHELMAN, H.A., JR.
7874
OBERLEAS, D.
6002
OBIGLIO, H.
3275
OBOSHI, S.
8088*
O'BRIEN, G.F.
5210
O'BRIEN, M.T.
1865
O'BRIEN, R.F.
6675
O'BRIEN, T.F.
4132*, 7611
O'BRIEN, T.F., JR.
2863
OCANA LOSA, J.M.
4581
OCHIAI, H.
5875
OCHSNER, A.
6660
OCKERMAN, P.A.
4253, 4365*, 4440,
6531
OCKLITZ, H.W.
8720, 8721, 8722,
8723
OCKNER, R.K.
5417*
O'CONNELL, F.X.
1855
O'CONNELL, T.J., JR.
3324
O'CONNOR, J.F.
0543
O'CONNOR, P.J.
8643
O'CONOR, G.T.
5651*
ODA, T.
2269*, 5668
O'DELL, B.L.
1708*
O'DELL, G.B.
7072
ODIEVRE, M.
5190, 9038.
ODINA, K.M.
7540
ODINOKOVA, V.A.
0946*
ODORI, Y.
1677
OEHLERT, W.
5326, 8376*
OELSSNER, W.
5628*
OESTREICH, R.
8517
OETLIKER, O.
2052
OEY, H.B.
4165
OFSTAD, E.
2026*, 4358
OGANDZHANYAN, L.K.
7748
OGATA, E.
5573*
OGATA, K.
1607, 7910*, 7911*,
7916*, 8642
OGATA, T.
0737*, 8087.
OGATA, Y.
6738
OGAWA, H.
3999*, 4158,
4607
OGAWA, K.
2616
OGAWA, T.
0479
OGAWA, Y.
2132*
OGDEN, WM.W., II
6630
OGER, A.
9012
OGILVIE, B.M.
7009
OGLESBY, J.E.
5793
OGLY, P.E.
1479
OGRA, P.L.
6931*
O'GRADY, F.W.
6184
OGURA, H.
5447
O'HARA, E.T.
1441*
O'HARA, N.
0101*
O'HARA, Y.
6294*
O'HEA, E.K.
0128
OHGA, A.
5518*, 5520*
OH-I, R.
2062
OHIRA, S.
6805
OHLMEIER, J.
5504
OHLNE, J.
9187
OHLSSON, E.G.
0925*, 1348*, 1389,
1440*, 7675, 8696*
OHM, W.
1723*
OHMAN, U.
6629
OHMART, R.D.
6506
OHNISHI, N.
4633
OHRT, D.K.
0266
OHSAWA, T.
0059
OHTA, A.
8575
OI, I.
0192*, 3272, 6517*,
6519*, 6553, 6645
OI, S.
6485
OISHI, R.H.
4992
OJALA, K.
1033
OKABE, H.
6487
OKABE, M.
6400
OKABE, S.
1019*, 5824*, 5829*
OKADA, T.
6786, 7596
OKAMOTO, M.
6637
OKAMOTO, T.
3592*
OKAMOTO, Y.
5374
OKAMURA, J.
6023
OKAZAKI, M.
1814, 3269*
O'KEEFE, D.D.
2499*, 5107
O'KELL, R.T.
1513
OKITA, A.
5477*
OKITA, H.
6828
OKMIAN, L.
6591
OKOCHI, K.
6863
OKOLICSANYI, L.
2940, 8631*
OKPAKO, D.T.
0905*, 5053
OKUDA, H.
3846
OKUDA, K.
3659
OKUDA, M.
7624*
OKUDA, Y.
8589, 8727

OKUDAIRA, M.
6366
OKULOV, A.B.
0256
OKUMURA, M.
6777*
OKUMURA, Y.
0101*, 8316*, 8638*
OKUN, K.V.
2635
OKUN, R.
3720
OKUNUKI, K.
7092
OLATUNBOSUN, D.
5072*
OLAVARRIETA, L.
2202, 2782
OLBERT, F.
8824
OLBRICH, E.
5325
OLD, J.M.
0296
OLDHAM, S.
4822*
OLDING, L.
6914
O'LEARY, W.M.
0618
OLEKSY, J.
0270*
OLESCH, K.
4092*
OLESEN, H.
6099, 7600*
OLESZKIEWICZ, L.
1444, 1471
OLIVA, H.
2842
OLIVE, D.
4056
OLIVECRONA, T.
3550*, 7065*
OLIVER, CL.
2229
OLIVER, G.
9086
OLIVER, I.
2021
OLIVER, I.T.
0731*, 1577*, 4727
OLIVER, R.I.
8903
OLIVER-GONZALEZ, J.
1794
OLIVERI, M.
0199
OLIVIER, B.
1929
OLIVIER, C.
1951, 5336, 8200
OLIVIER, CH.
1927, 1928, 1929,
2205, 3234
OLIVIER, CL.
1928, 3477, 5880,
8427
OLIVIER, G.
1143
OLIVIER, J.P.
9291
OLIVOTTO, M.
2064, 2079
OLKOWSKI, Z.
8406
OLLENDORF, P.
7743, 7744
OLLER, L.A.
2778
OLLIVIER, R.
8413
OLMER, J.
5016
OLOMOUC, J.S.
4154
OLOVSON, T.
0290
OLSEN, D.D.
1383
OLSEN, J.
7642
OLSEN, S.
6999, 7545
OLSEN, T.G.
4019*
OLSEN, T.S.
6657*
OLSEN, W.R.
3349
OLSNES, S.
6311
OLSON, R.E.
2418*, 3201, 3963
OLSSON, R.
9161
OLSZEWSKI, K.
2362
OLTEANU, C.
9183
OLTMANNS, D.
0853*
OLURIN, E.O.
1319
OLURIN, O.
1319
O'MARA, R.E.
8038
OMATA, S.
4834*
OMOLE, A.A.
5530*
OMORI, Y.
3954*
OMURA, I.
6828
OMURA, T.
6315
OMURA, Y.
3846
ONAI, Y.
6581
ONAJOBI, F.D.
3223, 7141*
ONDA, M.
3245*
ONDETTI, M.A.
3232
O'NEILL, J.A.
2680
O'NEILL, J.A., JR.
2584*, 8448
O'NEILL, J.P.
2931
ONG, G.B.
2547*, 8418
ONISHCHUK, V.F.
6195
ONISHI, C.
1874
ONISHI, S.
1937, 8932
ONISHI, T.
3538, 4702*
ONO, T.
6343, 7145*, 9218
ONODA, K.
5559*, 7967
ONODERA, A.
8321*
ONODERA, A.A.
2509*
ONOE, T.
0729*
ONOGAWA, T.
1798
ONORI, L.
2317, 2477
ONSTAD, G.R.
3545*
OOMEN, H.A.P.C.
9151*
OOSHIRO, T.
6023
OP DEN ORTH, J.O.
3693
OPITZ, K.
2083*
OPOLON, P.
2815, 3179, 3556,
3558, 3597, 4072,
5216, 9092
OPPER, A.
6768*
ORAVEC, M.
8645
ORATZ, M.
3980, 6902
ORBAN, F.
9013
ORBAN, J.C.
9073
ORCEL, L.
5263
ORCI, L.
0740*, 0750*
ORD, M.G.
5553*
ORECCHIA, C.
0330, 1846, 1902*,
1903*, 1909, 1911,
3368, 3396, 3431
O'REILLY, K.
2922

ORESHENKOV, M.M.
7520
ORFEI, E.
0735*
ORGA, J.C.
0704
ORIGONE, A.
0324
O'RIORDAN, J.B.
7478
ORLANDINI, I.
4534
ORLENKO, Y.M.
7407
ORLOFF, M.J.
2245, 3964, 6392*,
6906, 8370*
ORLOV, V.A.
5728
ORLOVA, L.V.
7954
ORLOVA, T.A.
0870
ORLOWSKA, J.
0653
OROZCO, A.
4782
ORR, K.B.
4223
ORR, W.
8386
ORRENIUS, S.
2420*, 2456, 2457,
4732, 5566*
ORSINI, L.
9139
ORTIZ, A.
3969
ORTIZ, H.
3101*, 3501
ORTMANS, H.
0604*, 7524*, 7538*,
8367
ORTONA, L.
9065, 9116, 9118,
9119
ORVIS, A.L.
1702*
ORY, E.M.
2795
OSA, T.
2356*
OSBORN, S.B.
0546
OSCHMAN, J.L.
3117
OSELLADORE, D.
4312
OSHIBA, S.
2395*, 3936*
OSHIMA, H.
0203, 4923, 6549,
6571, 8861
OSHIMA, T.
7128*
OSIPKOVA, T.A.
7233
OSIPOV, B.K.
5711
OSKERA, J.
0501
OSMAN, M.Z.
5777
OSNOS, M.
8270*
OSOGOE, B.
3946*
OSTASHKOV, K.V.
7206
OSTERGAARD, A.H.
7466
OSTROVERKHOV, G.
5312
OSTROVERKHOV, G.E.
6039
OSTROVSKAYA, I.M.
0318
OSTROW, J.D.
1724*
OSTROWITZ, A.
8395*
OSTROWSKI, K.
7037*
O'SULLIVAN, D.D.
1251
O'SULLIVAN, J.P.B.
1197
OSZACKI, J.
0283, 1055, 8127
OTA, Y.
6106
OTAKA, T.
0857
OTANI, S.
8695*
OTHERSEN, H.B., JR.
7761
OTNES, B.
1220*
OTREMBA, P.
0566
OTSUKA, H.
4371*
OTT, C.
6857*
OTT, G.
2011
OTTANI, V.
2392*, 2856*
OTTAVIANI, O.
3367
OTTE, J.B.
9073
OTTE, M.
5666
OTTENI, J.C.
5007
OTTENJANN, R.
0800*, 2382, 2887,
2990, 3362, 4180,
5368, 5854, 6622,
6641, 8064, 8104,
8595
OTTO, H.F.
8091*
OTTO, P.
9101
OTTOLENGHI, A.
0901
OTTOLENGHI, C.
4842*, 8665
OTTOLENGHI, G.
0213
OTZEN, J.
7743, 7744
OUSTERHOUT, D.K.
2454
OVCHININSKY, N.N.
7367
OVE, P.
4690*
OVECKA, M.
2363, 4813
OVERBECK, W.
6577
OVERHOLT, B.F.
0259, 0971, 1859*,
7294
OVERHOLT, E.L.
6213
OVERWEG, N.I.A.
5510*
OVLISEN, B.
3280
OVNATANIAN, K.T.
9232
OVNATANOV, R.S.
6011
OWEN, C.A.
1702*
OWEN, O.E.
1719*
OWENS, J.A.
1747
OWMAN, C.
2376, 3793*, 3913,
6299*
OWOLABI, T.
5469
OYRI, A.
3447*
OZA, G.G.
7637, 8377
OZAWA, H.
6478
OZAWA, K.
0059
OZAWA, T.
6325
OZER, A.
4797*
OZKARAGOZ, K.
8574
OZOLS, J.
1741
PABST, R.
6344
PACAS, G.R.
2556
PACHTMAN, E.
3995*
PACK, G.T.
4016*, 4362*, 4369*,
4378, 4380, 4385
PACKER, L.
6437*

PADALKIN, V.P.
1162
PADAYATTY, J.D.
7185
PADIS, N.
7568, 8401
PADMA, M.C.
1532
PAE, Y.S.
2359*
PAES, A.
4285
PAES, I.C.
2331*
PAGANI, A.
3857
PAGANO, G.
0692
PAGES, A.
9088
PAGLIANI, G.
8801
PAGLIANO, F.
0210, 0211, 8758
PAGLIARO, L.
9138, 9141
PAGLIUCA, V.
0396
PAGNAN, A.
4411
PAGNI, I.
2662
PAGNIEZ, G.
9031
PAI, K.N.
1275
PAI, M.L.
1434
PAI, S.T.
4889*
PAILLET, R.
4642, 5340
PAILTHORP, K.G.
7842
PAINTER, N.S.
0478, 6715
PAIRENT, F.W.
2943*, 3528*
PAJEWSKI, M.
2506*
PAKHOMOVA, G.V.
7402
PAKTORIS, E.A.
7586
PAL, S.C.
3718
PALA, A.M.
0274*
PALACIOS, D.A.
4291
PALADINO, A.M.
0332
PALEOLOGOS, G.
0893
PALESTRO, G.
3992*
PALIARD, P.
3598
PALITZ, S.
1967
PALIWAL, Y.D.
7479
PALKOSKA, F.
4176
PALL, G.
2977
PALLAVICINI, F.B.
2431
PALLOTTA, R.
4395
PALMA, F.
6727, 8980
PALMADE, G.
8469
PALMARI, V.
9007
PALME, G.
6680
PALMER, D.H.
0228
PALMER, E.D.
1192, 6635, 6907,
8071, 8465
PALMER, H.E.
7842
PALMER, J.R.
0715
PALMER, L.S.
0728*
PALMER, V.
3264*
PALMER, W.L.
1210, 2671
PALMO, A.
0468, 2623, 3276,
3282, 4343
PALMU, A.
4527*
PALOMBA, V.
4391
PALTAUF, F.
5416*
PALUMBO, L.T.
1900*
PALVA, I.P.
7444
PALVOLGYI, L.
8718
PAL'YANTS, T.G.
7725
PAN, C.M.
6718
PANARES, R.R.
5986*
PANARO, V.A.
2601
PANAYATOPOULOS, F.
4409
PANAYOTOV, B.N.
8340
PANCALDI, G.
8666
PANDEY, C.M.
3761
PANDIAN, P.I.
1180
PANDIT, C.G.
3718
PANEBIANCO, A.C.
5967
PANKOV, V.I.
7085
PANNELL, G.
3594*
PANNETIER, A.
2541
PANNUTI, F.
4022
PANOSSIAN, A.M.
0482
PANSU, D.
0410*, 2803*, 8563
PANTAZELOS, H.H.
1316
PANTEA, R.
8354
PANTIN, R.
5347
PANTSYREV, J.M.
5842
PANTSYREV, Y.M.
7404
PAOLAGGI, A.
4908
PAOLAGGI, J.
6387
PAOLAGGI, J.A.
8578
PAOLETTI, C.
3787
PAOLINI, A.
0669
PAOLINI, E.
8403
PAOLINI, F.A.
2736
PAOLUCCI, G.
4591, 9134
PAOLUZI, P.
2317, 8772
PAP, Z.
4628
PAPA, B.
9174
PAPA, S.
4725
PAPACHARALAMPOUS, N.X.
6853
PAPADIMITRIOU, J.M.
0744*, 0754*, 0755*,
1453*, 1564*, 4770
PAPADOPOULOUS, N.M.
8266*
PAPAIOANNOU, A.N.
5313
PAPALIA, D.
5685
PAPAPOSTOLOU, M.G.
4211
PAPAZOVA, M.
0048, 0050, 0051
PAPENBERG, J.
3160*
PAPI, A.
1949

PAPI, J.A.
8495
PAPP, J.
0518
PAPP, J.P.
0400
PAPP, M.
1325, 4345*, 6753
PAPPER, S.
6127
PAPPO, E.
4045
PAQUET, K.J.
1388, 5676
PARADIES, G.
1779
PARAF, A.
4851, 4855, 5185,
9009, 9178
PARASHCHAK, A.P.
8133
PARC, R.
9062
PARDO, M.
1754
PARE, W.P.
4188*
PAREDES, A.S.
4420
PARENTI, C.
8964
PARETSKY, D.
4372*
PARIETTI, R.
0246, 0401, 0458,
4101, 4135, 4412
PARIKH, N.K.
3512, 7758
PARIS, J.
0144, 0438, 0580,
0592, 4309, 6803,
8093, 8100, 8250,
8905, 9290
PARIS, J.C.
0438, 0580, 0592,
4309, 8093, 8158,
8288, 9290
PARISII, I.M.
3045
PARK, C.H.
2511*
PARK, C.R.
7951
PARK, C.Y.
2359*
PARK, H.
7417
PARK, W.C.
6017
PARKE, D.V.
7841
PARKER, A.M.
2528, 8294
PARKER, B.M.
2885
PARKER, E.F.
5746
PARKER, J.
5649*
PARKER, J.C., JR.
2814
PARKER, J.G.
1983, 2270*, 5694
PARKER, J.O.
0258
PARKER, L.S.
0989
PARKES, M.W.
3899
PARKHILL, U.A.
4200
PARKINSON, S.W.
4552
PARKS, M.E.
7041
PARKS, P.F.
7138*
PARKS, R.E., JR.
4862
PARKS, T.G.
2002, 2003, 4268*,
5681, 7487
PARKS, W.P.
3640
PARMA, A.
2744
PARODI-BOSIO, F.
1062
PARONETTO, F.
8326*
PARR-BURMAN, H.B.A.
0296
PARRISH, R.A.
6216
PARRISH, R.A., JR.
2100
PARROT, J.
6911*, 9192
PARROTT, M.W.
3763
PARRY, E.W.
6286*
PARRY, T.E.
6802
PARSA, I.
0748*, 0749*, 2365,
4701*
PARSONS, J.M.
4287
PARSONS, M.E.
6309*
PARSONS, V.A.
8301
PARSZEWSKI, M.
4544
PARTENSKY, C.
2904
PARTIN, J.C.
0358*
PARTRIDGE, R.
7953
PARTURIER-ALBOT, M.
0313, 0452, 1999,
2000, 3477, 4232,
5880, 8159
PARVERY, F.
9245
PASCAL, J.P.
0271*, 4306, 4935,
7987
PASCAUD, A.
4707*
PASCAUD, M.
4707*
PASECHNIK, I.K.
0872, 7585
PASERO, L.
7030*
PASETTO, M.
1616
PASHKOVSKAYA, A.Y.
7725
PASINI, G.
1105, 1435
PASQUALE, A.
2884
PASQUALI, F.
2426
PASQUALI, P.
4827*
PASQUALICCHIO, A.
2107*
PASQUIE, M.
2617, 8795
PASQUIER, J.
3530, 5979
PASSAMANI, E.
8636*
PASSARO, E., JR.
1063, 6209, 7679*,
8433
PASSERA, M.
0771
PASTORE, G.
2807*, 4636
PASTORINI, J.M.
4419
PATACQ-CROUZET, J.
8356
PATAT, F.
3054
PATEL, D.D.
6852, 7728
PATEL, H.C.
5797
PATEL, J.C.
0250, 1833, 8807
PATEL, L.R.
0697
PATEL, M.S.
4836*
PATEL, U.T.
5797
PATEL, V.
3799*
PATHAK, H.Y.
6265
PATHAK, I.C.
5943
PATHAK, M.A.
8269*
PATIL, P.N.
7020
PATOMAKI, L.K.
3299

PATRASSI, G.
2853, 4323
PATRICK, R.S.
1714*, 1715*
PATRON, R.M.
1918
PATRONE, E.
4483
PATSIORA, M.D.
7540, 7648
PATTERSON, D.S.P.
0404*
PATTERSON, H.C.
5208
PATTERSON, J.H.
3439*
PATTERSON, M.
5791
PATTON, J.F.
3947*
PATTON, J.J.
3479
PATZELT, C.
8509*
PAUGAM, B.
2992
PAUL, F.
3362
PAULET, P.
0448, 4331
PAULINO, F.
4139, 7747; 8831
PAULUZZI, S.
9123
PAULY, H.
5166*
PAUMGARTNER, G.
2082, 6454*, 8394
PAUN, R.
0351
PAUNIER, L.
3420*
PAUTKIN, YU.F.
2914
PAVARI, E.
0625
PAVEL, I.
2123, 2296, 4476*,
4491
PAVLAS, J.
8116
PAVLICA, D.
6806
PAVLICA, P.
4022, 4023, 8119
PAVLOV, A.S.
7463
PAVLOV, V.G.
0978
PAVLOV, V.V.
5755
PAVLOVA, I.I.
7595
PAWLACZYK, J.
4626
PAWLOTSKY, Y.
4635
PAWLOWSKA, A.
4460
PAWLOWSKI, Z.
3780
PAYARD, J.
8228
PAYARD, J.M.
2183, 8228
PAYEN, J.
2183
PAYET, M.
3782
PAYKOC, Z.
2767
PAYNE, J.E.
7013
PAYNE, W.D.
1393
PAYNE, W.J.
4218
PAYNE, W.S.
7306
PAYUMO, I.V.
2703
PAZ, R.A.
7657
PEACOCK, H.
3316
PEAGLE, R.D.
3047
PEARSE, A.G.E.
3037*, 3437*
PEARSON, J.G.
3336
PEARSON, T.A.
3708*
PEBAY-PEYROULA, F.
5232
PECHATNIKOVA, E.A.
5805
PECHET, L.
2453
PECK, O.C.
5315
PECORA, L.
4485
PECOUT, C.
6147
PEDERSEN, A.B.
3303
PEDERSEN, G.
1175
PEDERSEN, P.L.
1579*
PEDERSEN, S.A.
5019*
PEDERSON, R.A.
7095*
PEDERSON, T.
2479
PEDINIELLI, L.
1864
PEDRIDIS, G.
7505
PEDROZA-MARTINEZ, L.
7310
PEETERS, J.P.
8926
PEETERS, R.
8012*
PEGG, C.S.
7418
PEIPER, H.J.
6602
PEIRANO, D.
1896
PEIRATO, J.P.
1541
PEISACH, J.
7801
PEKUR, S.V.
5545
PELAEZ HERNANDEZ, A.
4089
PELC, S.R.
1786*
PELIKAN, V.
1678, 2880
PELISSIER, E.
4197
PELISSIER, G.
5401
PELKONEN, P.
6689
PELLATI, M.DEV.
4535
PELLEGRINI, R.
3609
PELLEGRINO, A.
0345
PELLEGRINO, E.D.
5077
PELLEGRINO, J.
0711*
PELLER, P.
8460
PELLERIN, D.
5093
PELLIZON, S.
4355
PELOUX, Y.
5887*
PELTIER, L.
5121
PELTOKALLIO, P.
1996, 3463*
PEMBERTON, L.B.
2613
PENA, J.R.
1583*
PENA CHAVARRIA, A.
7014
PENATI, M.R.
3857, 3873
PENA Y DE LA PENA, E.
1135
PENCEV, J.
7621
PENDEFUNDA, C.
0046
PENE, P.
9281
PENEDA, T.
3610
PENFOLD, E.
8006*
PENG, M.T.
7087, 7088

PENIN, F.
4298
PENN, I.
1225*, 2068, 6792
PENNA, D.O.
7581*
PENNELL, T.C.
0931
PENNINGTON, F.
0867
PENNINGTON, S.N.
3181, 3595*
PENNISI, V.
8853, 8962
PENNOIT, H.
6204
PENNOIT-DE COOMAN, E.
9268
PENTCHEV, P.G.
2349
PENTEADO, J.F.
2594, 4193
PENTIKAINEN, P.
2900
PENTTILA, A.
1033, 2659*, 6285*,
8327*
PENTTILA, H.
2633*
PENZES, L.
2345, 5443
PEON, F.C.
1954
PEOPLES, S.A.
2452
PEPPERS, G.F.
3968
PEQUIGNOT, F.
8920
PERA, A.
3276
PERACCHIA, A.
9007
PERAINO, C.
3807*, 3839, 3842,
4396, 4700*
PERALA, A.
5502
PERCIVAL, G.S.
5558*
PERCY-ROBB, I.W.
7153*
PERDOMO, R.
1905, 2249
PERDUE, G.D., JR.
3746
PEREDA, F.P.
1133
PEREDA, T.
9154
PEREIRA, A.A.
2015
PEREIRA, E.
1942
PEREIRA, V.G.
7581*
PEREMITINA, A.D.
8339
PEREPELKIN, B.G.
1290
PERERA, D.R.
7010
PERERA GUIARDINU, J.
4420
PERES, G.
0316, 3878
PEREZ, J.
4194
PEREZ, M.D.
3006
PEREZ DE NEUMAN, P.
7164
PEREZ-INIGO, C.
0017
PEREZ-SANTIAGO, E.
0412*
PERFETTI, P.
3367
PERIER, E.A.
6998
PERIERA, S.M.
2692
PERIS BONET, R.
4089
PERISIC, Z.
2792, 3630
PERISSAT, J.
7735, 8015
PERKINS, E.G.
7828*
PERKINS, H.A.
7552
PERKINS, J.R.
7903*
PERLAK, G.J.
6378*
PERLEY, A.
7948
PERLMUTTER, A.
4867
PERNA, A.M.
1891
PEROL, C.
5031, 5737
PEROL, R.
5200
PEROTTI, F.
0212, 1060
PEROZZI, A.
7746
PERRARO, F.
4535
PERREAU, G.
5663
PERREAU, P.
1828
PERRELLI, L.
4314, 9276
PERREN, S.M.
6627
PERRENOUD, J.P.
8731
PERRET, J.P.
4885
PERRIN, J.
3875, 6371
PERRIN, J.E.
8733
PERRISAT, J.
4171
PERROT, E.
4353, 4618
PERROT, J.
5288
PERROTIN, J.
2573, 5031, 5105,
5300*, 6155
PERROTTA, P.
3750
PERROTTI, E.
1892
PERRY, G.T.
5828*
PERRY, J.
0921
PERSKY, L.
0372, 7507
PERSONA, G.
7528*
PERSSON, C.G.A.
5513*, 7858
PERSSON, E.
3506*
PERSSON, M.
2223
PERTAALA, Y.
3286
PESCE, R.
2750
PESCH, H.J.
5998
PESCHAUD, R.
0449, 4407
PESCHL, L.
5629*, 5644
PESENDORFER, F.
2882, 4945
PESHERSTNYAK, T.B.
6104
PESKIN, G.W.
2758
PESSEREAU, G.
5347
PESTANA, A.
5585*
PETA, G.
0215, 0322
PETASNICK, J.
5359
PETCHKLAH, S.
8496
PETEL, B.
2617, 8795
PETER, B.
4950
PETER, M.A.
5328
PETER, M.Y.
0235, 9179
PETEREIT, M.R.
2168
PETERING, H.G.
1740
PETERKOFSKY, B.
5463

PETERMAN, M.
0514
PETERMANN, H.D.
6801
PETERMANN, J.
5653*
PETERMANN, M.L.
7784*
PETERS, C.M.
0069*
PETERS, G.
8697
PETERS, H.A.
1481
PETERS, M.A.
3072, 6420*
PETERS, R.F.
2438
PETERS, R.L.
2189*, 8035
PETERS, R.M.
1006
PETERS, T.J.
3441*, 8551*
PETERSEN, H.
0786* 1207*, 1512,
3228*
PETERSEN, P.
7576*
PETERSON, B.E.
5823
PETERSON, H.C.
8900
PETERSON, L.H.
3064
PETERSON, M.J.
5557*
PETERSON, S.C.
8549*
PETHER, J.V.S.
9140
PETIT, D.
3611
PETIT, P.
8793, 8810
PETITE, J.P.
4045, 8679
PETIY, S.I.
5850
PETKANESKOV, AN.
1018
PETKOV, G.
5207
PETKOVA, L.
1053
PETRELLI, M.
0757
PETRESCO, C.
9033
PETRESCU, C.
8455
PETRI, C.
3916
PETRI, S.
3916
PETROV, B.A.
3379, 6142
PETROV, V.P.
2520
PETROVIC, S.
8641
PETROVICI, A.
1574*, 2123, 2296,
4476*, 4491
PETRUC, G.
2242
PETRUCCI, F.
1890
PETRUM, L.M.
3087
PETRUN, A.S.
3600
PETRYKA, Z.J.
8699
PETTAVEL, J.
5198, 6747
PETTE, D.
0883
PETTERSON, G.
6596
PETTIT, F.H.
0881
PETTY, A.M.
5003, 7677*
PETUA, J.
4645
PETZOLD, H.
8682
PEVCHIKH, V.V.
2955
PEVERETOS, P.
0686, 4679, 9282
PEVNY, I.
7564
PEVTSOV, I.L.
7368
PEVZNER, G.I.
7291
PEVZNER, I.S.
7291
PEYCELON, R.
6678
PEYDRO, A.
0159
PEYPOCH AQUSTI, J.A.
0242
PEZZIMENTI, J.F.
2096
PFEFFER, E.
4877
PFEIFER, I.
6164
PFEIFER, K.
5228
PFEIFER, U.
6774*
PFEIFFER, C.J.
0069*, 3149, 5070*
PFEIFFER, R.R.
7843
PFISTER, R.C.
0964, 7488
PFLEIDERER, T.
8392
PFLIEDERER, A.
5092
PFORDTE, K.
6369
PFRIENDER, H.
9035
PHEILS, M.T.
2022, 2600, 8253
PHELAN, J.
2280*
PHELAN, J.J.
2316, 3427
PHELIP, E.
2798, 2939
PHELIP, X.
4351
PHILIBERT, H.
5260, 8356
PHILIP, H.M.
6685*
PHILIPPART, A.I.
2615
PHILIPPON, F.
3169*
PHILLIPS, G.T.
5442*, 5459, 5460
PHILLIPS, J.
3719
PHILLIPS, J.C.
4995
PHILLIPS, J.F.
5052
PHILLIPS, J.P.
5830*
PHILLIPS, L.D.
5085
PHILLIPS, L.J.
4714
PHILLIPS, M.J.
3196, 3806*
PHILLIPS, P.A.
1453*
PHILLIPS, R.
6017
PHILLIPS, R.F.
5196
PHILLIPS, S.F.
1662, 3698*, 3705*,
7060*, 7845, 8573*
PHILLIPS, T.J.
3461*, 4592
PHILLIPSON, R.F.
9288
PHILPOT, J.
5102
PIANCASTELLI, A.
9007
PIANCONE, R.M.
2115
PIANTADOSI, C.
4387
PIASCO, D.
6568
PIASECKI, Z.
2647
PIAZZA, M.
4481, 4485
PICACHE, R.
2068
PICACHE, R.S.
2834
PICARD, J.
5310

PICARDI, N.
0195.
PICARD-LEROY, G.
8229
PICAZO, J.G.
0489
PICCHIONI, A.L.
5639
PICCINELLI, D.
8132.
PICCININI, A.
4392
PICCININO, F.
3636, 3836, 7248,
7614
PICCIOLI, R.
8473
PICCONE, V.A.
6579.
PICCOTTO, G.
2740
PICHLER, H.
6538
PICHLMAIER, H.
4093
PICK, A.I.
4891.
PICK, R.
6864
PICKARDT, R.
0644
PICKETT, M.J.
4005
PICKREN, J.W.
6186
PICOFF, R.C.
1392
PICOT, A.
4962, 9291
PIERANGELI, A.
9080
PIERART, A.
9011
PIERCE, G.E.
5379
PIERCE, N.F.
1212., 3754, 4008,
4571., 4575., 4584,
4587, 8928., 9201.
PIERCE, W.A.
6206
PIERCE, W.S.
0265, 3322
PIERON, R.
9032
PIERRO, M.
0904.
PIERSON, D.J.
1989
PIERSON, W.E.
2949.
PIERZYCKI, J.
4357
PIET, R.
9011
PIETANERA, P.
3983
PIETRA, P.
6361
PIETRI, P.
4312
PIETROBONO, P.
1204
PIETRON, K.
6647
PIETRUSZKO, R.
7973
PIETU, R.
0747.
PIGGOTT, J.
3014
PIGLIACAMPO, J.
1297
PIGNEUX, A.
6562
PIGNOL, F.
4680
PIHL, A.
6340
PIHL, B.
1389, 2035., 3268.,
3301, 8696.
PIHL, E.
8505.
PIK, A.
1936
PILCH, Y.H.
3719
PILCHMAYR, I.
8361
PILCZYK, R.
3948.
PILIP, A.M.
2588
PILLERI, G.
4391
PILLON, D.
5408
PILLOT, J.
9245
PILLOT, M.F.
2378
PILZ, W.
3092
PIMENTEL, J.R.
2015
PIMPARKAR, B.D.
1548, 3510, 6265,
8052
PINCHUK, V.G.
3567, 7974
PINCUS, T.
5983.
PINELLI, V.
4119
PINELLO, V.
9138
PINHEIRO, Y.
1840
PINK, I.J.
5433.
PINKERTON, P.H.
4251.
PINKHAS, J.
2021
PINNA, C.D.
0437
PINO, M.E.
9154
PINOTTI, H.W.
0086, 3915, 3923
PIOVESAN, J.B.
7099
PIPAT, C.
0552, 1355.
PIPER, D.W.
4910, 6613., 8879.
PIPER, W.N.
8612.
PIPIYA, V.I.
0241
PIPPI, L.
9105
PIQUARD, B.
0471, 1982
PIRANI, A.
2019
PIRAZZOLI, P.P.
4024
PIRE, J.C.
3540
PIRK, F.
4799
PIROLA, R.C.
1683., 2117, 3154.,
5436., 5969
PIROMYAN, ZH.N.
1118
PIRONTI DI CAMPAGNA, G.
0279
PIROTTE, J.
6115.
PIROZZI, V.
0157
PIRVU, C.
0393
PISANI, W.
3577
PISANO, E.
0692
PISANO, J.C.
6427.
PISANO, M.
3894, 3895, 4280
PISCICELLI, I.
0667
PISI, E.
0620, 3084
PITCHFORD, R.J.
6277
PITELKA, D.R.
1751
PITOT, G.C.
1353.
PITOT, H.C.
1735, 2412., 3941.,
8265.
PITRE, D.
8677
PITTALUGA, F.
4168
PITZLER, K.
5015
PIVA, A.
4152

PIVA, R.
4207, 4522
PIVIKOVA, M.I.
7672
PIZA, F.
8431
PIZZIGALLO, E.
9065, 9116, 9118,
9119
PIZZOLATO, G.P.
0502
PIZZOLATO, P.
3685, 7895*
PLAA, G.L.
0581*, 1387, 1765,
7061*, 7119*
PLACANICA, A.
3368
PLACER, Z.
5991*
PLAGEMANN, P.G.W.
5989*
PLANCE, N.E.
5314
PLANCQ, J.M.
9013
PLANT, M.
3736
PLAQUET, R.
9090
PLAS, C.
6483
PLASEVSKI, A.
0596
PLASSART, H.
3476
PLASTININA, R.A.
5888
PLATE, C.A.
5423*, 5441*
PLATNER, W.S.
3947*
PLATONOV, O.M.
3567, 7974
PLATONOVA, V.I.
0328
PLATT, D.
0562, 9104
PLATT, R.R.
3650*
PLATZER, E.G.
2259
PLAUCHU, M.
5296
PLAUT, A.G.
2685*
PLAYFORTH, R.H.
5876
PLEASANTS, J.R.
0031*
PLEASURE, J.
2928
PLEDGER, H.G.
2010
PLEIDERER, TH.
4507
PLESSIER, J.
9010
PLESSIS, J.L.
6332
PLESTED, W.G.
8083
PLETYNOV, V.M.
0627
PLEWE, D.
8596
PLIKH, M.B.
7043
PLISKEVICH, A.P.
6195
PLISS, M.B.
0851*, 3600
PLIUYKO, M.E.
6041
PLOCH, D.R.
8748
PLOCHL, E.
9047
PLOCKA, K.
4545
PLORIN, M.
4124
PLOTKIN, G.R.
6247
PLOUSSARD, J.P.
2846
PLUMEAU, R.
9279
PLUSDEC, J.
3232
POCH, R.P.
4326
POCHEDLY, C.
6540
POCHIACZEVSKY, R'.
1315
POCHINI, M.
3927
POCHYLSKI, T.
2638
PODDA, M.
8611*
POEY, S.H.
3488
POGE, A.W.
2381
POGGI, F.
9137
POGGLITSCH, H.
6105
POGO, A.O.
3804*
POHL, V.
4228
POHOWALLA, J.N.
2131*
POILLEUX, F.
0452, 5322
POILLEUX, J.
5142, 8453
POINER, A.
0451
POINER, J.P.
0451
POINTNER, H.
5629*, 5644
POIRIER, J.P.
5352
POIROT, J.P.
8895
POIS, A.J.
7704
POJAN, Y.M.
0201
POJER, J.
4373
POKA, L.
2946*, 3816*
POKIESER, H.
8075, 8431, 8705*
POKORNY, J.
0578
POKS-SKIBA, E.
2268
POLAK, T.
3690
POLASKOVA, A.
5122*
POLCAK, J.
8214
POLCAKOVA, J.
5122*
POLCAN, M.
5782
POLCYN, R.E.
8747
POLDVERE, E.
4432
POLEY, F.
6923
POLEY, J.R.
5893, 7184
POLHEIM, O.
5416*
POLIKARPOV, S.N.
1040
POLIN, S.G.
6725
POLISHCHUK, A.S.
3567, 7974
POLIT, M.O.
2111
POLK, J.W.
1952
POLL, P.
6693*
POLLACK, S.
5484*
POLLAK, J.K.
5434*
POLLARD, H.M.
0971, 1088, 1137,
8005*
POLLIACK, A.
8480
POLLMER, W.
1092
POLLYCOVE, M.
6114*
POLONOVSKI, J.
8615*
POLONSKY, L.
4972
POLOTSKII, YU.E.
8475

POLTER, D.E.
6612*
POMELOV, V.S.
7237
POMERANTSEVA, I.I.
3451
POMERRI, G.
2783, 5825*
POMPUCCI, G.
3831
PONCE, L.C.
7311
PONCELET, T.K.
9115*
PONG, R.S.
3789*
PONKA, J.L.
0491, 4666, 8197
PONOMARENKO, V.N.
7369
PONOMAREVA, T.V.
6190
PONS, J.E.
0089, 1685*
PONS, R.
2541
PONTES, J.F.
2056
PONTHIEU, A.
1864
PONTICH, G.
4441
PONTREMOLI, S.
6290*
PONY, J.C.
2089
PONZ, F.
1587, 3052
POOLE, B.
3824, 5610
POORT, C.
0808*
POPANDOPULO, G.D.
9232
POPE, C.E., II.
2549*, 5507*, 8070,
8808
POPIELA, T.
0281
POPITAN, M.
4629
POPOV, N.P.
0979
POPOV, S.D.
5474
POPOVA, E.A.
7869
POPOVA, P.A.
2461
POPOVA, T.B.
8336
POPOVA, Z.P.
5707
POPOVIC, O.
2964
POPOVIC, S.
6768*
POPOW, J.
2789, 2791
POPOWICZ, J.
3388*, 4187.
POPOWITZ, L.
7573
POPP, W.
6219
POPPE, W.
4805*
POPPER, H.
0555, 1420, 2908*,
3694, 4443*, 6846,
6895, 7901*, 8326*,
8386
PORCHERET, J.
3051
PORRI, A.
5782
PORRO, G.B.
1665
PORT, M.
1858*
PORTA, E.A.
2835, 5250
PORTA, G.
3525
PORTER, J.M.
1975
PORTER, J.W.
5442*, 5459, 5460
PORTER, K.A.
2070
PORTER, M.R.
4526*
PORTER, N.H.
3769*
PORTER, P.
8545, 8687*
PORTO, J.A.F.
1949
PORTUGAL, F.H.
7771*
POSCH, J.
8017
POSER, G.
4805*
POSSE, N.
7553
POSSENTI, B.
4392, 4560, 8812,
8814
POST, C.
2194*
POSTELLI, T.
0024, 4025
POSTELTHWAIT, R.W.
7388, 7389
POSTEPSKI, L.
1127
POSTLETHWAITE, R.W.
2704, 8111
POSTRELOV, N.A.
5708
POTAPOVA, A.T.
1161
POTCHEN, E.J.
2408*
POTEKAEV, M.A.
6010
POTEL, J.
4999
POTET, F.
5147, 5817, 6476,
8251, 9178
POTH, E.J.
1115*, 1155
POTHIER, M.A.
0231, 4059, 4075
POTNIS, P.R.
0787*
POTOCKY, V.
8992
POTSAID, M.J.
2346
POTTER, B.A.
5567*
POTTER, C.
4975
POTTER, V.R.
0764*, 1353*, 2043,
3621, 3935*, 6287*,
7114*, 7902*
POTUZNIK, V.
4620
POTVLIEGE, P.
8926
POTYAKINA, N.N.
7399
POTYK, D.
8154
POUILLART, P.
5217
POULIE, N.J.
0116
POULOSE, K.P.
1803*
POULSEN, H.
3601, 6776*, 6929*,
7652*, 8298
POUPON, R.
8519
POUSTI, A.
5021*
POUYET, J.
6337
POUYET, M.
6012, 9071, 9072
POVER, W.F.R.
3796*, 6685*
POWELL, C.
7774*
POWELL, D.W.
6247
POWELL, J.
0540
POWELL, K.C.
7739
POWELL, L.W.
2048, 6833*
POWELL, S.J.
7011, 7021
POWERS, J.J.
6532
POWIS, G.
3932*
POZNANSKI, A.K.
7566

LIBRARY U. OF I. URBANA-CHAMPAIGN

POZO, R.
1495
POZZI, M.
0663
POZZOBON, C.E.
1509
PRADAL, G.
0013*
PRAGER, W.
4986
PRAISSMAN, M.
3905*
PRAKASH, A.
5868
PRAKASH, O.
1551, 5868, 6261
PRAMANIK, A.K.
2692
PRANDI, D.
8894
PRANDO, R.
9046
PRASAD, A.S.
6002
PRASANNA, E.
1561
PRASANTHA MURTHY, D.
4328*
PRAT, J.
1248
PRATT, J.L.
8196
PRAUER, H.
8963
PRAWERMAN, A.
2044
PREAUX, A.M.
5495*
PRECHTEL, K.
2723
PREEDY, J.R.K.
1700*
PREISIG, R.
0861, 0868, 1467,
1496, 6471
PREKH, M.
2923
PRELLWITZ, W.
8780
PRENTICE, R.S.A.
5790
PRESCOTT, R.J.
0496*, 2762*, 8987*,
8988*
PRESTIA, A.E.
2886
PRESTON, F.W.
2982
PRETORIUS, H.E.
5457
PRETORIUS, P.H.
1214*
PREUSSNER, S.
5173*
PREVITE, J.J.
8461
PREVOST, A.G.
9030
PREVOST, Y.
9091
PREVOT, J.
6148, 8954
PREVOT, P.A.
3577
PREVOTAT, N.
8735
PREZIOSI
1367
PREZIOSI, M.
6049, 7746
PREZIOSI, P.
7965
PRIBILLA, W.
6651
PRIBYLOVA, H.
6240
PRIBYLOVSKY, S.L.
3672, 6271
PRICE, J.B.
5497
PRICE, J.B., JR.
1443*, 3739, 6128,
6897
PRICE, T.H.
6174
PRICE, W.E.
0703, 8111
PRICHARD, J.S.
7989
PRIEBE, C.J., JR.
6182
PRIEBUS, I.
9135
PRIEST, R.J.
3328
PRIESTLY, B.G.
1765, 7119*
PRIGGE, W.F.
3967
PRINCE, A.M.
5253*, 5695, 6100,
6518*, 6864, 9114*
PRINCIOTTO, J.V.
3995*, 5505
PRINGLE, R.
1916
PRINGOT, J.
7269, 8734
PRINSLOO, J.G.
1214*, 5384, 5385
PRIOR, C.
1307, 4300, 6535
PRIOR, P.
5877*
PRIOTON, J.B.
6825
PRITHAM, H.G.
6725
PRIVALOVA, N.V.
7626
PRIVETT, O.S.
8618*
PRIZONT, R.
7450, 8169
PROBST, H.
0179*
PROCA, E.
2674
PROCACCIA, S.
3082, 7934, 8786
PRODESCU, V.
3381
PRODI, G.
3981, 7563
PROFIS, A.
2506*
PROKHOROV, V.V.
0951*
PROKOPIEVA, ZH.F.
5843
PROLLA, J.C.
0293, 4890*, 5654*,
5780, 6534, 8118
PRONASZKO, A.
8272*
PRONI, G.
8457
PRONIN, V.I.
1016
PROPASTIN, G.N.
1031
PROSCHENKO, N.L.
5848
PROSKEY, V.J.
2885
PROSS, D.C.
6018
PROSS, E.
5916
PROTHEAU, G.
4352
PROTSENKO, V.A.
1326
PROVAN, J.L.
0261
PROVANA, A.
0146
PROVENZALE, L.
0904*, 3894, 3895,
4280, 7276
PROVOST, J.
4013, 9280
PROYE, C.
0232, 8073, 8916
PROYLE, C.
1917
PRUCHANSKY, V.S.
7243, 7264
PRUSOVA, F.
3759
PRYOR, H.
6522*
PRYPOCH AGUSTI, J.A.
0242
PRZYMANOWSKI, Z.
0239
PSTRUZINA, J.
0578
PSTRUZINOVA, H.
0578
PUCCINELLI, E.
3057
PUCEKOVA, G.
4487

PUDDU, P.
2392*, 2856*
PUDVAN, W.R.
6668
PUENTE, J.L.
4999
PUESTOW, C.B.
4970
PUGEDA, F.V.
0487
PUGH, D.
8690*
PUGLIA, C.A.
2905
PUGLIATTI, C.
7190
PUGLISI, C.
4583
PUGNO, V.
9276
PUIG, J.F.E.
5293
PUIG, J.R.
7738
PUIG, R.F.DE E.
5293
PUJOL, H.
1395
PULLAN, B.R.
5652*
PULLMAN, M.E.
0843*
PULVERTAFT, C.N.
5789
PUNTILLO, F.
2178
PURCELL, R.H.
0608*, 2104*, 286R*
PURCHASE, I.F.H.
6769*
PURDON, R.A.
3409
PURI, S.K.
3217, 8323*
PUROHIT, K.R.
2700
PURVES, J.K.B.
5108
PURVES, L.R.
0544, 7530*
PUSATERI, G.
4614
PUSCH, G.
8948
PUTNAM, C.W.
2068
PUTTER, J.
3784
PUTZKE, H.P.
7790*
PUVION, E.
4739
PUZIO, J.
0513, 4357
PYLDVERE, E.I.
7547
PYRTAKHIA, R.V.
5939
PYSZ, M.
2739
QADRI, M.U.N.
8558*
QUAADE, F.
0615, 3419*, 5885,
6888
QUAGLIA, S.
4355
QUAGLIARELLO, E.
1779, 3930*, 4725
QUAN, S.H.Q.
2707
QUANDALLE, P.
0267, 8456
QUAY, J.F.
7843
QUIJANO NAREZO, M.
3990
QUILICI, M.
5675
QUINCEY, R.V.
1602
QUINN, J.L., III.
1390
QUINT, J.
0928, 1931
QUINTERO, O.
8236
QUINTEROS-NIEBOR, C.J.
0323
QUINTON, A.
6019, 6045, 6118,
6119, 6562
QUINTYN, M.
8470
QUIRANTES HERNANDEZ, A.J.
4486
RAAB, K.H.
2435
RAAB, W.
0565
RAASCHOU-NIELSON, T.
7302
RABE, U.
7198
RABES, H.
3573
RABKIN, I.K.
7242
RABY, J.M.
1986
RACE, T.F.
2331*
RACEVSKIS, J.
4735
RACHAIL, M.
0206, 4681
RACHAIL-ARNOUX, M.
0206
RACHLIN, L.
2158, 3353
RACHMAN, R.
0288, 8112, 8432
RACOUCHOT, J.
6724, 7517
RADDATZ, K.
7633*
RADDE, I.
3420*
RADELSCU, D.
0672
RADEV, T.
0051
RADHAKRISHNAN, A.N.
1782*, 5410*, 7023*,
7024*, 7035*, 7074
RADICE, C.
2995
RADIN, S.
4388
RADLOFF, H.
8913
RADOJKOVIC, J.
6324
RADOMAN, V.
2205
RADOVANOVIC, M.L.
3762
RADU, D.
0672
RADUJKOV, Z.
0574
RADULESCO, S.
6254
RADULESCU, D.
1237, 5646*
RADULESCU, E.
0351
RADUSHKEVICH, V.P.
5724
RADZIALOWSKI, F.M.
1773
RAFAL, S.
3112
RAFFENSPERGER, E.C.
6231
RAFFENSBERGER, J.G.
0969, 1253, 8434
RAFFETTO, J.E.
4200
RAFTELL, M.
7774*
RAFTERY, E.B.
7570
RAGHAVAN, P.
8052
RAGNI, B.
4561
RAHBEK, I.
3303
RAHMAN, A.S.M.M.
4570*
RAHMAN, Y.E.
3815*, 3842
RAHMOUNI, D.
6822
RAIA, A.
0084, 0464
RAIA, A.A.
1292
RAIBAUD, P.
9220
RAICK, A.N.
8330
RAID, N.
3772

RAIHA, N.C.R.
5420.
RAIJMAN, L.
1775, 4733
RAILEANU, L.
8676
RAIMUNDO, J.J.
0679
RAIN, M.C.
0158
RAINA, A.
8655
RAINEY, C.H.
7156.
RAISFELD, I.H.
2908., 3966, 4832.
RAISONNIER, A.
8615.
RAITH, L.
6739
RAITHEL, D.
9155
RAITSIS, A.B.
1370
RAIVIO, K.O.
5211
RAJ, H.G.
7171
RAJAGOPOLAN, B.
6065
RAJAN, R.K.
0291
RAJAPPAN, P.N.
7757
RAJASEKAR, R.
2973
RAJASEKARAN, G.
6002
RAJASURIYA, K.
6750
RAJU, P.K.
2428
RAJVANSHI, V.S.
8744
RAJYALAXMI, K.
2227
RAKE, M.O.
0967, 3594., 7570,
8301
RALPH, A.
7834.
RALSTON, G.J.
2653
RAMACHANDRA, K.
2074
RAMACHANDRAN, K.
0807., 1560, 4327.,
5360
RAMACHANDRAN, S.
2272.
RAMADAN, M.A.
1584, 2244
RAMADAN, M.I.A.
1584
RAMAIAH, A.
5438.
RAMAKRISHNA KURUP, C.K.
3083, 7185
RAMALINGASWAMI, U.
0635.
RAMASARMA, T.
0113, 3083, 3205,
7185
RAMASWAMY, K.
7074
RAMBAUD, J.C.
3696.
RAMBOUD, J.C.
5159
RAMCHAND, S.
1933, 5776, 7763,
9077
RAMELLA, R.
4315
RAMENOFSKY, M.L.
8434
RAMIREZ, J.
2842
RAMIREZ, J.L.
7892.
RAMIREZ, M.
5516.
RAMIREZ, M.R.
1511
RAMIREZ, V.
1146
RAMOT, B.
6229
RAMPAS, J.
7620
RAMPULLA, C.
2149
RAMSER, O.
5328
RAMSOE, K.
6471, 6880.
RAMWELL, P.W.
7913.
RANANAVARE, M.M.
1550
RAND, M.J.
7940
RAND, R.W.
8404
RANDALL, H.T.
0817., 2449., 5171.
RANDAZZO, A.
0681, 4563, 4582
RANDOLPH, J.
2928, 7738
RANDOLPH, M.M.
0110
RANDRIAMANANA, C.
8920
RANDRIANARIVO, P.
2996
RANEK, L.
0863, 4478., 6881.,
6890
RANEY, R.
4665
RANGANADHAM, M.
6643
RANHOTRA, G.S.
0822.
RANKE, E.
8849
RANNIKKO, S.
1082
RANQUE, P.
5675
RANSOME, G.A.
5899
RAO, A.N.R.
1561
RAO, A.V.N.
1428
RAO, C.K.
3718
RAO, G.
3410
RAO, G.S.
7783., 8532
RAO, K.S.
2700, 7920.
RAO, K.V.K.
2293
RAO, M.L.
7783.
RAO, N.R.
5358
RAO, P.
1618
RAO, S.L.N.
0877
RAO, S.V.
2227
RAO, V.G.
1532
RAPANT, V.
4305, 5751
RAPER, A.J.
3064
RAPIN, M.
9230
RAPISARDA, L.M.
7742
RAPISARDA, R.
2176
RAPO, S.
7656.
RAPOPORT, K.D.
1820
RAPOPORT, S.I.
7284
RAPP, W.
3795., 7822
RAPPAPORT, A.M.
6805
RAPPAPORT, H.
6734
RARENKO, A.S.
7364
RARIA, A.
3923
RASETTI, L.
3577
RASKIN, H.F.
8449
RASK-MADSEN, J.
5951
RASMUSSEN, B.L.
1179, 1408
RASSTRIGIN, N.N.
7315

RASTAN, H.
4470
RATHGEN, G.H.
2469
RATIU, C.
6636
RATNU, K.S.
0712
RATZENHOFER, M.
3860
RATZER, E.R.
0988
RAUBER, G.
4294, 4412, 5192,
8712
RAULE, M.
4315
RAUNIO, V.K.
7607
RAUSIS, C.
6738, 6744
RAUTUREAU, J.
5185, 9009, 9178
RAUTUREAU, M.
5159, 5256*
RAUX, P.
2044
RAVAL, D.
4755*
RAVEL, R.
0936*
RAVENEL, J.M.
5746
RAVENEL, R.
0938*
RAVITCH, M.M.
1342, 5837, 7726
RAW, I.
1616
RAWAT, A.K.
7972
RAWAT, D.S.
3761
RAWNSLEY, H.M.
6231
RAY, A.K.
1551
RAY, B.G.
0948*
RAY, T.K.
1619, 6428*, 6447*
RAYNAUD, P.
4886
RAYNOV, R.
4112
RAZEMON, P.
0267
REA, C.F.
0912*
READ, A.E.A.
0197*, 0642, 1811*,
2512*
READ, C.P.
5404
READ, J.B.
6328
READ, R.C.
8084
REALDI, G.
4323
REBA, R.C.
1803*
REBER, H.A.
6412*
REBEYROTTE, P.
9169
REBOUD, A.M.
8651
REBOUD, J.P.
8651
RECHATIN, J.
4974
RECKNAGEL, R.O.
7920*
RECTOR, F.C., JR.
3100*
RECZKO, E.
6955
REDDEMANN, H.
9135
REDDI, A.S.
4845
REDDI, T.G.
0129
REDDING, P.M.
3950*
REDDY, B.R.
6643
REDDY, B.S.
0031*
REDDY, C.R.R.M.
1559, 1561, 4328*
REDDY, D.B.
2099, 2157
REDDY, J.K.
3620
REDDY, M.R.
1559, 1561
REDDY, P.
1952
REDING, R.
6633
REDLICH, F.H.
8719
REDMAN, H.C.
1800*, 2497, 8703*,
8986
REDMOND, D.E., JR.
2795
REECE, R.L.
3485
REED, J.D.
7089*
REED, L.J.
0881
REED, L.S.
8176
REEDER, D.D.
7093*
REEFE, W.E.
2014
REES, J.R.
2578
REES, P.H.
3017
REES, R.J.W.
8157*
REEVE, T.S.
1938
REFAI, M.
1519
REGAN, J.F.
7420
REGAZZINI, A.E.
2149
REGENT, D.
2534
REGGIANI, R.
2824
REGY, J.M.
0476
REHBEIN, F.
6717
REHFELD, J.F.
3419*, 5865, 6882*
REHM, W.S.
3073, 6390
REHNER, M.
0181*, 4943, 7400,
8785
REIBSCHEID, S.
3539, 7565
REICH, J.
4400
REICHBACH, E.
3350
REICHLE, F.A.
1704*, 2993
REICHLE, R.M.
1704*
REICHMANN, M.E.
4750
REICHRATH, S.
4044
REID, E.
0855*, 1772, 2283*,
6832*, 7533*
REID, I.M.
6830*, 7788*, 8317*
REID-SMITH, A.
4913
REIF, W.
5164*
REIFFERSCHEID, M.
1036
REIGEL, D.H.
5536, 6408
REIHER, P.
9048
REIKOWSKI, H.
9053
REILLY, M.
1704*
REIMOLD, W.V.
5992*
REIMUND, P.
5105
REINAUER, H.
6422*
REINDELL, H.
0373
REINER, C.
7354
REINICKE, C.
7898*

REINICKE, V.
2133*, 5272, 6098*,
6101, 6860*
REINIKAINEN, M.
6692
REINLEIN, J.M.A.
2960
REINMILLER, E.
0485
REINSCHKE, P.
2112
REINSTEIN, H.
9207
REIS, D.D.
2196
REISER, R.
2428
REISER, S.
6348*
REISLER, D.M.
6865
REISLER, E.
6337
REISMANN, B.
5760
REISS, R.
0488
REISSMANN, G.
5202
REITEMEIER, R.J.
1222*, 2246, 8443
REITZIG, P.
8844
REITZUG, H.C.
8553*
REIZENSTEIN, P.
5779
REIZIS, A.R.
8365
RELLER, L.B.
6973
REMBADO, R.
4083
REMBEAUX, A.
0694
REMBERT, A.
8073
REMIGIO, P.
3686
REMINE, S.G.
5947*, 6730*
REMINE, W.H.
2607, 5109
REMMER, H.
6081
REMY-DEFRAIGNE, J.
7936, 7988
RENAUD, F.
4213, 4993, 8893
RENDTORFF, R.C.
2108*
RENE, A.A.
9093*
RENGER, F.
4494
RENIS, S.
0049
RENKAWEK, K.
8272*
RENNERT, O.M.
2833
RENSON, J.
4853
REPIN, Y.M.
5594
REPSHER, L.H.
1414*
RERAT, A.
8571
RERKASEM, R.
0554
RESHETOV, A.I.
7300
RESNICK, R.H.
6233, 7636
RESTREPO, A.
4623
RETTENBACHER, F.
5287
RETTENMAIER, G.
0205, 6008
RETTORI, R.
1928, 2848, 4232,
4589, 5336, 8427,
9029
REUBER, M.D.
3543*, 3606, 5277*,
6057*, 6818, 7560
REUNANEN, A.
0105
REUSSER, F.
6469
REUTER, A.M.
2486, 7936
REUTER, S.B.
8986
REUTER, S.R.
1800*, 2497, 3262*,
3285, 8703*
REUTER, W.
2859*
REUTTER, F.W.
4657
REUTTER, W.
6845, 8376*
REVEL, J.P.
3790*
REVIGNAS, A.
7276
REVILLE, P.
5341
REVOL, L.
9131
REY, J.
4773, 4863*
REY, M.
0453
REYERO, R.G.
0376
REYES, E.L.
6682
REYES, H.
0882
REYES FERRETTI, E.
7090*
REYNARD, A.
5603
REYNAUD, P.
0170
REYNES, M.
1951, 8200
REYNOLDS, C.H.
5445
REYNOLDS, H.Y.
4865
REYNOLDS, J.F.
3689
REYNOLDS, T.B.
2130*, 6788, 6894
REYNOLDS, V.H.
3489
REYNOLDS, W.A.
2678
REYNOLDS, WALKER, JR.
5120
REYNOUARD, F.
5574*
REZZONICO, A.
9082
REZZONICO, C.
0771
RHATIGAN, R.
3352
RHEAULT, M.J.
8592
RHODES, J.
1112*, 3765*
RHODES, J.M.
7839
RI, K.
8910
RIBEIRO, E.M.
4674
RIBERA, M.T.
1693
RIBET, A.
0271*, 2531, 4306,
6168, 8467
RIBET, M.
0244, 1832
RIBO, J.M.
3052
RIBOTTA, G.
0286, 1027, 1258
RICATTE, J.P.
8735
RICCI, G.
1487, 8800
RICCIARDIELLA, P.T.
1972*
RICE, F.A.H.
3193
RICHARD, C.A.
1002, 1003, 1838,
2101, 2561
RICHARD, J.
5663
RICHARD, M.
3845
RICHARD, N.F.
0355*
RICHARD, P.A.
1829
RICHARDS, A.J.
8166*

RICHARDS, D.A.
7685*
RICHARDS, R.C.
1029
RICHARDSON, B.D.
9270
RICHARDSON, J.D.
2987
RICHARDSON, M.C.
2438
RICHARDSON, S.H.
3998, 6513
RICHEY, D.
0430
RICHIR, C.L.
0649
RICHON, J.
4100
RICHSHOFFER, N.
3821
RICHTER, F.
5255*
RICHTER, G.
0999
RICHTER, G.W.
6813
RICHTER, H.
4983, 5092, 8394
RICHTER, M.
5641
RICHTER, M.E.
2448
RICHTER, R.M.
1315
RICHTER, S.
0559
RICHTERS, A.R.
1767
RICKETT, J.W.S.
0440
RICORDEAU, P.
5903
RICOUR, C.
4863*
RIDDELL, R.J.
1557
RIDDELL, W.G.
7502
RIDDERSTAP, A.S.
0809*
RIDDLE, J.
1647*
RIDGE, D.
0867
RIDLEY, D.S.
4660*
RIDOCCI, T.
4089
RIECHEN, E.O.
1606
RIECKEN, E.O.
4939, 7827*
RIEDWYL, H.
0579
RIEGEL, N.
3380, 5759
RIEGELMAN, S.
2355, 2473*
RIEHL, D.
2953
RIETBROCK, N.
3211
RIFAAT, M.A.
1193
RIFLE, G.
4352
RIGAMONTI, P.P.
5004, 5306
RIGDON, R.H.
3340*, 5184, 5456
RIGGS, S.
1450
RIGHETTI, A.
3661*, 4756*, 8930
RIGHINI, A.
4559, 9195
RIGILO, R.
1821
RIGLER, B.
4295
RIGNAULT, D.
3371
RIGO, G.P.
3361, 4319
RIIS, P.
0702
RIJ, A.M.
1647*
RIJNDERS, W.P.
0294
RIKER, W.L.
6586
RIMONDINI, C.
8813
RINALDI, G.
0527, 0670
RINALDI, M.
2938
RIND, H.
8177
RINDERKNECHT, H.
5970
RINECKER, H.
5615*
RINGERTZ, O.
0613
RIO, F.W.
7420
RIOS, G.
0676
RIPATTI, P.O.
2461
RIPERT, C.
2256
RISSANEN, P.M.
3299
RITA, G.A.
8518
RITCHIE, A.C.
8330
RITTER, H.
2887
RITTER, U.
4508
RITZ, E.
7059*
RIVAROLA, C.H.
8084
RIVERA, A.
7014
RIVERA, C.T.
0230
RIVERA, E.
3001*
RIVERA, R.A.
3292, 6063, 6847
RIVLIN, R.S.
7178, 8270*
RIZZI, D.
2053
RIZZO, A.
8803, 9044
RIZZO, F.
8788
RIZZO, V.
4392, 4560, 8794,
8803, 8812
RIZZONI, G.
8572
RO, J.S.
5283*
ROACH, J.A.
4218
ROBAYE, B.
4853
ROBB, C.A.
1701*
ROBBINS, M.
3840
ROBECCHI, A.
4027
ROBERT, A.
5830*, 7386*
ROBERT, D.
0246, 0401, 0458,
4101, 4135, 4298,
4412
ROBERT, J.
3408
ROBERT, L.
8788
ROBERT, P.
5289
ROBERTI, C.
0704
ROBERTO MARIN, V.
0463
ROBERTS, B.
2932
ROBERTS, C.J.
6027
ROBERTS, D.F.
7437*
ROBERTS, D.J.
7721
ROBERTS, K.B.
8657
ROBERTS, L.S.
2259
ROBERTSON, D.
4925
ROBERTSON, J.D.
6789
ROBERTSON, J.S.
5487*

ROBERTSON, K.
1658
ROBERTSON, R.D.
9180
ROBERTSON, R.P.
2974
ROBERTSON, S.
3016
ROBERTSON, T.A.
4770
ROBIN, H.
0058*
ROBINEAU
3408
ROBINOWITZ, M.
6847
ROBINSON, A.
2031
ROBINSON, B.H.
4843*, 7105*, 7106*
ROBINSON, F.W.
7274
ROBINSON, H.
1700*
ROBINSON, J.
3803*
ROBINSON, J.O.
8882
ROBINSON, J.W.L.
1639, 5478*
ROBINSON, L.A.
3157, 6521*
ROBINSON, M.
8333
ROBINSON, M.P.
7040
ROBINSON, N.M.
6981
ROBINSON, R.L.
4005
ROBLES, A.
1373
ROBLES OROZCO, F.
3990
ROBST, P.
6454*
ROCCHI, P.
7563
ROCCHI, V.
3765
ROCCO, G.
2598
ROCHA, A.
0577
ROCHANT, H.
3652
ROCHAT, R.
6973
ROCHE, A.C.
7840
ROCHE, C.L.
4540
ROCHE, G.D.
1077
ROCHE, J.
9213
ROCHE, P.
6201
ROCHEMONT, S.
5247
RO-CHOI, T.S.
6781*
ROCH-RAMEL, F.
8697
ROCKMAN, S.E.
4927
RODA, E.
0215, 0322
RODAT, D.
2139
RODENAS CERDA, J.
4038
RODGERS, J.B.
2690*
RODGERS, J.B., JR.
3867*
RODIC, S.
3511
RODINA, R.I.
7641
RODING, B.
1790*
RODING, M.
5034
RODIONOV, G.A.
8339
RODIONOV, V.M.
2463, 7954
RODIONOVA, A.P.
5703
RODKINA, M.V.
6084
RODL, W.
6726
RODOLICO, R.
2431
RODRIGUES, D.C.
0176
RODRIGUES DA CUNHA, M.A.
1117
RODRIQUEZ, A.
7896*
RODRIQUEZ, E.M.
0656
RODRIGUEZ, F.J.
3735
RODRIGUEZ, R.S.
8404
RODRIGUEZ-DE-CURET, H.
8167*
RODRIQUEZ DE LA VEGA, A.
4671
RODRIGUEZ GOROSTIZA, F.
2592
ROE, C.G.
8209
ROE, D.A.
1758
ROE, F.J.C.
6515
ROEDER, W.J.
5900
ROEHRIG, K.L.
5598
ROELS, H.
1217
ROEMER, G.B.
2952
ROESCH, W.
6641
ROESEL, R.W.
1251
ROGACHEVA, V.S.
7318
ROGE, J.
4609
ROGERS, A.F.
1228
ROGERS, J.B.
3528*
ROGERS, J.H.
2451
ROGERS, L.R.
7307
ROGERS, N.
3296
ROGERS, P.S.
3638
ROGERS, S.
8273*
ROGGENBACH, H.J.
4644, 9050
ROGGIN, G.M.
2682*
ROGISTER, C.
5402
ROHLING, S.
5605
ROHNER, A.
2651, 6052, 9022
ROHR, H.P.
3859
ROHR, J.
4499
ROHRER, G.V.
0703
ROIN, J.
8296
ROITT, I.M.
2091, 2817
ROJAS, G.
0018
ROJAS, L.
1059
ROKHLIN, E.A.
7238
ROKICKA-USIELSKA, J.
2790
ROKKANEN, P.
4578
ROLAND, C.
5756
ROLLAND, J.C.
1829
ROLLINS, E.L.
8508*
ROMANI, M.
3346
ROMANI, S.
4026
ROMANIUK, P.A.
4964, 4965
ROMANOV, A.I.
5974

ROMANOV, N.I.
7616
ROMANOV, P.K.
3671
ROMANTSEV, E.F.
1368
ROMANYCHEV, Y.A.
5706
ROMIEU, C.
1395
ROMMEL, K.
4503, 4653
ROMOLA, R.
2161
ROMUALDI, C.
4342, 4394
ROMUALDI, P.
4394
ROMVARI, H.
1650*
RONGEY, K.
8363
RONNBERG, A.L.
0798*
RONSKY, R.
2384
RONZINI, V.
3144
RONZONI, G.
0157
RONZONI, P.
8535
ROONEY, S.
2280*
ROOTWELT, K.
1174
RORSMAN, G.
7631*
RORSMAN, H.
3446*
ROSA, F.
4230
ROSA, H.
9159
ROSANELLI, K.
9067
ROSATI, G.
7826*
ROSATI, L.M.
3000
ROSATO, E.F.
2006, 2932
ROSATO, F.E.
1454*, 2006, 8181,
8208
ROSCH, J.
1806*, 7993*, 8420*
ROSCH, W.
2989, 5065, 5854,
8742, 8947
ROSCHER, A.A.
3497
ROSCHLAU, G.
2084*, 6086
ROSE, C.I.
7912*
ROSE, P.C.
7644
ROSE, T.F.
5330, 6697
ROSEAU, E.
9176
ROSELLI, A.
8831
ROSEMOND, G.P.
1704*, 2993
ROSEN, H.
2763*, 6392*, 8370*
ROSEN, P.J.
0543
ROSEN, R.G.
8248
ROSEN, S.I.
0120
ROSENAK, B.D.
8479
ROSENBAUM, K.D.
5653*
ROSENBERG, D.
0353, 5032
ROSENBERG, E.
9124
ROSENBERG, H.L.
1989
ROSENBERG, H.S.
7485
ROSENBERG, J.C.
7804
ROSENBERG, L.E.
3439*
ROSENBERG, P.
3212, 8442
ROSENBERG-ARATANGY, L.
0353
ROSENBLATT, M.S.
5745
ROSENFELD, D.D.
2031
ROSENFELD, J.
8871
ROSENGREN, F.
0796*, 3151
ROSENGREN, K.
5981*
ROSENLUND, M.L.
2652
ROSENOER, V.M.
1694*
ROSENOW, E.C., III
7280
ROSENQVIST, H.
3424
ROSENSWEIG, N.S.
3707*, 5427*, 5611*,
5613*, 5619*
ROSENTHAL, H.L.
2339*
ROSENTHAL, W.S.
2336*
ROSER, H.
8023
ROSI, P.A.
2719
ROSIEK, B.
1426
ROSILLON, J.
2535
ROSITO, P.
9134
ROSKOSKI, R.
0135
ROSKY, L.P.
8989
ROSLER, H.
9164
ROSLYAKOV, A.G.
1159
ROSS, C.A.C.
7612
ROSS, E.M.
5207
ROSS, F.G.M.
0197*, 1811*, 251
ROSS, F.P.
7480
ROSS, G.
8420*
ROSS, H.
7883*
ROSS, J.R.
7324*
ROSS, P.M.
4446*
ROSS, R.J.
6668
ROSSAN, R.N.
4660*
ROSSER, R.G.
7703
ROSSER, S.B.
5920
ROSSETTI, M.
1072, 4530, 8817,
8822
ROSSI, G.
3000
ROSSI, G.N.
7347
ROSSI, N.P.
0993
ROSSI, P.
6544, 7219*
ROSSIER, A.
8939
ROSSIPAL, E.
1965
ROSSLER, R.
2128, 6854*, 6871
ROSSO, P.A.
1488
ROSTAND, S.G.
5557*
ROSTOMOVA, L.T.
7629
ROSTOVTSEVA, I.D.
7290
ROSTUSLAVINA, O.A.
1239
ROSZKOWSKA-GIRYN, I.
8851
ROTH, F.J.
4949, 6576
ROTH, H.
6653, 8135, 885
ROTH, H.P.
1698*, 2525

ROTH, J.L.A.
3149, 5020*
ROTH, P.
2927
ROTHBERG, P.M.
0903*, 2311, 7985*
ROTHFIELD, N.
8748
ROTHMAN, S.S.
2276*
ROTHSCHILD, M.A.
3980, 6902
ROTHSTEIN, W.
7581*
ROTHWELL-JACKSON, R.
3224
ROTONDI, M.
8960
ROTSTEIN, J.
5649*
ROTT, H.D.
5138
ROTT, L.
3881
ROTTE, K.H.
4894*
ROTTER, S.
5255*
ROUCAYROL, J.C.
8044, 8732
ROUILLER, C.
0740, 0750
ROURKE, P.
0009*
ROUS, S.
5575*
ROUSSEAU, J.
0450, 4962, 9069,
9291
ROUSSELET, J.
7500*
ROUSSO, C.
1948
ROUX, G.
0415
ROUX, J.
1928, 2205
ROUX, M.
0385, 0673, 3372,
8752, 8799
ROVATI, A.L.
4149
ROVATI, V.
0346, 1863, 4315
ROVERSI, R.
3310
ROWE, B.
2187*
ROWE, D.J.F.
5156
ROWE, G.A.
1844
ROWE, R.J.
0485
ROWINSKI, J.
8510*, 8547
ROWLANDS, C.
0064*
ROWLANDS, E.N.
5090*
ROWLATT, C.
1594
ROY, A.D.
2809*
ROY, C.C.
3169*
ROY, M.
3748
ROY, P.H.
2679
ROY, S.N.
7765
ROYER, M.
3101*
ROZA, O.
8977
ROZAN, R.
4413
ROZANOV, I.B.
7241
ROZE, C.
2491, 3924, 4786*,
5554, 6387, 6416,
8578
ROZEN, P.
6858*
ROZENBERG, H.
4909, 5048
ROZENSTRAUKH, L.S.
5707
ROZOVA, E.I.
5525
ROZSIVALOVA, V.
8935
ROZSOS, I.
4048
RUA, S.
3992*
RUBALTELLI, F.F.
3973
RUBBO, S.D.
4279, 4881
RUBENCHIK, B.L.
0851*, 3600, 6079
RUBENSTEIN, B.
0829*
RUBENSTEIN, E.
8360
RUBERT, M.
8374*
RUBERTELLI, M.
0623
RUBERTI, A.
0570
RUBET, A.
8457
RUBIDGE, C.J.
7021
RUBIN, B.
3232
RUBIN, C.E.
4254
RUBIN, E.
2858*, 5222*, 7125*,
7126*, 7127*, 8653
RUBIN, M.
3995*, 5505
RUBIN, M.P.
0951*
RUBIN, P.
8209
RUBIN, W.
1025*
RUBINO, A.
0904*
RUBINSTEIN, A.
1436
RUBINSTEIN, D.
8606*
RUBINSTEIN, R.
0942*
RUBINSTEIN, Z.
2513*, 2540
RUBULIS, A.
8374*
RUCHTI, C.
6575
RUCKEBUSCH, Y.
6012, 9071
RUDAITENE, A.P.
8337
RUDDON, B.W.
4793*, 4801, 5466,
7156*, 7907*
RUDENKO, N.Z.
3116
RUDENKO, R.M.
3569
RUDENSKAYA, M.V.
7557
RUDERMAN, N.B.
2446, 6425*
RUDIGER, J.
8376*
RUDIGER, W.
6457
RUDIGIER, J.
6845
RUDLER, J.C.
1334, 6754
RUDMAN, D.
8375*
RUDNEV, G.P.
7617
RUDNEY, H.
6426*
RUDOLPH, N.
6446*
RUEDI, B.
9160
RUEFF, B.
1409, 5232, 5297,
6780*
RUETTINGER, R.T.
3222
RUFFIN, J.M.
2844, 5087
RUFINO, C.D.
1165
RUGGIERI, S.
2077
RUGGIERO, D.A.
6089
RUGGIERO, G.
3636, 7445, 7614

RUMBACH, W.
2634
RUHL, R.
5059
RUIGROK, T.J.
8511*
RUIZ, G.
9194
RUIZ, O.
3182
RUIZ-TORRES, A.
0072, 5504
RUKSTINAT, G.J.
5796
RULE, A.H.
5450
RUMEAU, P.
6167
RUMSEY, R.D.E.
0734*
RUMYANTSEVA, V.V.
6145
RUNCIE, J.
7913*
RUNCO, R.
4170
RUOFF, H.J.
3146
RUOZI, P.
6922
RUOZI-BERETTA, L.
3481
RUPE, C.E.
4600
RUPIEREZ POLO, S.
8869
RUPNIK, E.J.
7509
RUSAKOV, V.I.
7350
RUSANOV, A.A.
3318, 7233
RUSCA, J.A.
1100
RUSCHHAUPT, D.G.
2833
RUSCHKE, G.
7849
RUSH, B.D.
2987
RUSIN, Z.
2917
RUSSELL, D.H.
7108*
RUSSELL, J.G.B.
4873
RUSSELL, L.T.
0107
RUSSELL, R.I.
4129*, 4976*
RUSSELL, R.W.
3294
RUSSELL, V.
1696*
RUSSELL, W.J.
2181
RUSSO, E.
2265
RUSSO, G.
3281, 9138
RUSSO-SPENA, A.
0602
RUSU, I.
3852
RUTHERFORD, C.
5879*
RUTHERFORD, R.B.
0925*, 1440*, 7675
RUTISHAUER, I.H.E.
8483
RUTLEDGE, R.H.
1154
RUTTEN, A.P.M.
3570
RUTTER, W.J.
7780*
RUTTIMANN, A.
0209, 1038
RUVIDIC, R.
5189
RUYMANN, F.B.
6016
RUYTERS, L.
6115*
RUZICKA, F.F., JR.
6544
RYABSTEV, V.G.
5729
RYABYI, P.A.
3413
RYAN, L.
1710*
RYAN, M.L.
6658*
RYAN, P.
5101
RYAN, R.M.
0432
RYANG, J.Y.
0221
RYAZANSKAYA, G.V.
7594
RYBA, J.
1015
RYBARCZYK, A.
1128
RYBINA, A.O.
0874
RYDELL, W.B.
3500
RYDELL, W.R., JR.
6133
RYGAARD, J.
7642
RYGICK, A.N.
0055
RYLSKI, J.
0379
RYNICKI, P.V.
6756, 6758, 9021
RYPSON, L.
4153, 4546
RYSICH, V.G.
1425
RYTILA, A.
3286
RYTOMAA, T.
6503, 6504
RYTTER, D.J.
7962
RYVKIN, V.L.
5939
RYWLIN, A.M.
8333
RYZHIKOV, V.N.
7224
RYZHNEV, V.E.
6092
RYZHYKH, A.N.
7494
RYZKOV, E.V.
1510
SAAD, E.
0691
SAARMA, V.
4432
SABA, T.M.
2480*
SABATINI, D.
3060
SABATINI, D.D.
3063
SABAU, M.
4628
SABEL, M.
5166*
SABELLI, H.C.
4782
SABELNIKOV, G.I.
7241
SABINE, J.R.
3042
SACCHI, T.B.
2320
SACCONE, C.
7939
SACHAJDAK, Z.
1473
SACHATELLO, C.R.
6186
SACHDEVA, H.S.
5943
SACHS, F.
2358*
SACHS, G.
2808*
SACK, R.B.
1212*, 3416*, 4571*,
4574*
SACQUET, E.
8694
SACOMAN, N.
7821
SADEGHI-NEJAD, A.
3199
SADEK, A.M.
3767*
SADEK, I.M.
1519
SADKOVSKAYA, A.N.
6145
SADLIER, J.W.
1577*
SADLINSKI, C.
8406

SADUN, E.H.
3776
SADYK-ZADE, K.S.
3645
SAEED, A.M.
0593
SAEGESSER, F.
5740, 6745, 6747
SAEKI, Y.
5388
SAENKO, V.F.
7390
SAEV, IV.
1291
SAFFER, E.
1969*
SAFIRESCU, T.
2242
SAFONOVA, L.G.
3644
SAFONOVA, N.V.
7282, 7691
SAFRANY, L.
2801*
SAGAIDAK, V.N.
5822, 7356
SAGEAUX, J.J.
7270
SAGLIER, G.
4985
SAGNELLI, E.
3836
SAGNET, H.
4642, 4643, 5340
SAGREIYA, K.
0635*
SAHA, H.K.
7663
SAHA, T.K.
1527*
SAHAGUN, A.V.
1125
SAHBA, M.M.
7882
SAHMBAUGH, G.E., III
1764
SAI, F.T.
2198
SAIDI, F.
0486, 1184, 7361
SAILER, R.
4955, 8060
SAILER, S.
4511, 6550, 8767
SAINT-DIZIER
8806
ST. HEITLAND, R.C.
0007*
ST. JOHN, D.J.B.
3351, 6614*
SAINT-LAURENT, P.M.
5159
ST-MARTIN, J.
3523
SAINT-SUPERY, G.
8950
SAITO, H.
3247, 5982*
SAITO, K.
3378, 4720, 5518*,
5520*, 7278
SAITO, M.
4565*, 4566*
SAITO, S.
5009, 5010, 5320,
5378
SAITO, T.
4128*
SAKAGAMI, K.
6786, 7596
SAKAGUCHI, N.
8004*
SAKAI, K.
2422, 5994*
SAKAI, S.
1798, 7699
SAKAI, T.
3378, 8881
SAKAMOTO, K.
4175
SAKAMOTO, S.
0729*
SAKAMOTO, Y.
3590
SAKAZAKI, R.
4566*
SAKELARIDES, C.
0944*
SAKO, Y.
2708
SAKSELA, E.
8184
SAKU, M.
2132*
SAKUMA, R.
5596
SAKUMA, S.
2225
SAKURAI, M.
4514
SAKURAI, T.
6959
SAKURAI, Y.
7172, 7173
SALA, J.
0573
SALAS, M.
3785
SALASSA, M.R.
1973*
SALATI, R.
8607*, 9081
SALATINO, A.
9066
SALAZAR, H.
1576*
SALAZAR ARCE, A.
7385*
SALDUCCI, J.
1729, 3125, 4796*
SALEM, E.
8750
SALEM, H.H.
2252
SALEM, S.A.
1193
SALEMBIER, M.Y.
8230
SALEMBIER, Y.
0144, 0666
SALEMBIER, Y.A.
4638
SALEN, G.
4785
SALEN, S.
4359
SALETTA, F.J.
5796
SALI, A.
8315
SALINAS, A.G.
2727
SALINAS IZAGUIRRF, S.F.
3332
SALIOU, A.
5288
SALITSKY, S.
2066
SALKOV, G.I.
1110
SALMAN, M.M.
7239
SALME, A.
3575
SALMELA, H.
3373
SALMENKIVI, K.
4548
SALMI, H.J.
7329*
SALMON, C.H.
0103*, 3652
SALMON, D.
3652
SALMON, J.
6115*
SALMON, P.R.
7498*
SALOKANNEL, S.J.
7444
SALOM, R.
0577
SALOMON, P.F.
2673
SALOMONE, T.
0972
SALONEN, I.S.
1166, 4458
SALTERI, F.
4168
SALTI, R.
3574
SALTIEL, H.
9075
SALTMAN, P.
7785*
SALTZ, N.J.
5926
SALTZMAN, G.F.
3279
SALUENYA, A.I.
7285
SALVADOR, R.A.
5564*

SALVATO, G.
3053, 3832
SALVINO, M.
3868.
SALVIOLI, G.F.
8607., 9081
SALZBERG, A.M.
2670
SALZER, G.M.
5311, 5325
SAMA, S.K.
0807., 4327., 5360
SAMADASHVILLI, A.G.
7629
SAMADI, A.
2999
SAMAJA, U.
6491, 7934
SAMBIN, M.P.
2209
SAMBIN, M.S.
9226
SAMBIN, P.
4204
SAMLOFF, I.M.
0057., 0784., 2390,
3393.
SAMLOFF, M.
1202
SAMMARRO, L.
4252
SAMODUMOVA, G.A.
8407
SAMOILOVA, M.A.
5804, 6145
SAMOKHVALOV, V.I.
7381
SAMPAI, M.DEL.
4075
SAMPER, J.C.
0340
SAMPLINER, J.E.
8977
SAMPSON, D.
0533., 1872
SAMPSON, H.W.
8555.
SAMSON, E.I.
1121
SAMSON, R.R.
3363
SAMUEL, A.M.
2683., 3445.
SAMUEL, I.
6806
SAMUEL, J.R.
1583.
SAMUELS, H.H.
7900.
SAMUELS, L.D.
8280
SANADA, Y.
8527
SANADI, D.R.
5452
SANADIZADEH, S.M.
6852, 7728
SANATI, A.
9262
SANCES, A., JR.
5536, 6408
SANCHEZ, M.F.
4909
SANCHEZ, R.E.
1063, 1877, 6209,
8433
SANDBANK, U.
8380
SANDBERG, D.H.
7567
SANDBERG, J.S.
8429
SANDBLOM, P.
2017
SANDER, J.
5550
SANDERS, C.L.
3252
SANDERS, E.M.
6310.
SANDERS, I.
0947.
SANDERS, R.C.
5331.
SANDERS, R.J.
1131
SANDERS, S.S.
3073
SANDLER, E.
8823
SANDNER, H.
4876
SANDSTEAD, H.H.
5859
SANDSTROM, B.
6319, 7029.
SANER, G.
1213.
SANFORD, P.A.
5491.
SANGUIGNI, S.
2176
SANIDAD, P.
7419
SANJO, T.
8398.
SAN JUAN, F.
2102, 2850, 7442
SANKALE, M.
1169, 3782, 4703,
5183
SANO, I.
6829
SANOWSKI, R.A.
5391, 5759
SANS, J.V.
0340
SANTAMARIA, P.
0751.
SANTAMARIA GARCIÃ, J.L.
8869
SANTAMBROGIO, C.
3082, 6491, 7934,
8786
SANTANA, H.
1308
SANTANGELO, G.
0602
SANTIAGO-BORRERO, P.J.
2687.
SANTILLAN, V.
1107
SANTORO, E.
6207
SANTOS, M.A.
3781
SANTULLI, T.V.
3417., 6208, 7469
SANUI, H.
5449
SANYAL, M.C.
1421
SANYAL, N.N.
6298.
SANYAL, S.N.
4584
SANZ, C.
3502
SANZ SANZ, T.
5400
SAPACH, V.K.
7201
SAPKAS, A.
1469
SAPOZHKOVA, M.YA.
7996
SAPUTO, V.
8778
SARACCA, L.
0937.
SARAN, B.M.
2157
SARASIN, G.
8485., 8486.
SARAVIS, C.A.
7211.
SARCIONE, E.J.
4370., 6450.
SARDAK, G.A.
1017
SARDESAL, H.V.
6266
SARDINI, D.
2491, 7634.
SAREEN, K.
1732
SARGENT, T.
0763.
SARGENT, T.W.
5982., 6114.
SARI, B.
2843
SARIN, N.K.
1819
SARIS, N.E.L.
0875
SARKANY, I.
5285
SARKAR, N.K.
6462, 6468
SARKAR, S.K.
3703.
SARLES, H.
3531, 5182, 5314,
5887., 8750, 9020
9023

SARMA, K.P.
5028
SARNAT, W.
2869*
SARNITSKY, I.P.
8885
SARRADE-LOUCHEUR, C.
5288
SARTORELLI, C.
0364, 1487
SARTONI GALLONI, S.
8119
SARVAN, B.
4068
SARVELLO, D.
3564
SARZALA, M.G.
2286*
SASAGAWA, A.
0924*
SASAGAWA, T.
6284*
SASAKI, H.
1351*
SASAKI, J.
3320
SASAKI, S.
4633
SASAKI, T.
6816, 8522
SASAKI, Y.
3269*, 7222*
SASAME, H.A.
7918*, 7925
SASANO, N.
6749*
SASAYAMA, T.
8589
SASSA, S.
0839*, 1601
SASSE, D.
0738*
SASSEN, A.
2486
SASSI, A.
3873
SASSI, I.
0468
SASS-KORTSAK, A.
2353
SASSOON, H.F.
4737
SATAV, J.G.
3937*
SATEGNA-GIUDETTI, C.
3276, 3282
SATGE, P.
5349
SATO, S.
5175*, 6004
SATO, T.
6959
SATO, Y.
5621*
SATYANAND
6719
SAUBERLICH, H.E.
4712*
SAUBIER, E.
4974, 6594
SAUER, F.
5582*
SAUER, J.R.
3114
SAUER, W.G.
2679
SAUGER, F.
6861, 8876
SAUNDERS, S.J.
0772, 5223*, 8001
SAURY, R.
9008
SAUTIER, C.
1929, 3876, 8920
SAUVEGRAIN, J.
5731
SAVA, F.
0437
SAVA, G.
0314, 2996, 8906,
8914, 8915, 9028
SAVAGE, C.R.
5464
SAVAGE, L.E.
3399
SAVARY, M.
4123, 5739, 8797,
8798
SAVARY, P.
5625
SAVCHENKO, A.P.
1312, 5729
SAVCHENKO, E.D.
6192
SAVCHUK, B.D.
7428
SAVELIEV, V.S.
5843
SAVELJEV, V.S.
5841
SAVICH, L.V.
3412
SAVINO, L.
0668
SAVITHRI, P.
1428
SAVOLDI, E.
4170
SAVOYE, B.
5354, 8770
SAVOYE, M.B.
4414
SAVRAN, V.R.
2589
SAWA, A.
6572
SAWADA, M.
5497
SAWADA, S.
2181
SAWAE, G.
8316*
SAWAKI, S.
7189
SAWICKI, W.
8510*, 8547
SAWYER, B.C.
3579
SAWYER, R.B.
1181
SAWYERS, J.L.
1142, 6710, 6987
SAXENA, S.N.
0948*, 2195*
SAXENA, S.R.
6180
SAY, B.
2688*, 4216*
SAYERS, R.J.
2219
SAZIKI, R.
5829*
SBORALSKE, F.F.
2357*
SBRICCOLI, A.
4226, 4281, 5067,
8923, 9175
SBUELZ, B.
1867, 1902*, 1903*,
1909, 1985, 2095,
3396, 5304
SCAEFER, J.W.
5129
SCALA, R.A.
7197*
SCALI, P.
1248, 6676
SCALISE, G.
6107, 9105
SCALTRITI, F.
0284
SCANLON, E.F.
2566
SCARABELLI, L.
3682
SCARSELLI, R.
4921
SCARTH, L.
7275
SCHACHTER, A.
0600
SCHACHTER, H.
6734
SCHACK, P.
1753
SCHADE, S.G.
7832*, 8688*
SCHAEFER, J.W.
5077, 6809, 8243*
SCHAFER, D.E.
5626
SCHAFER, G.
2410*
SCHAFER, K.H.
8217
SCHAFER, P.K.
8861
SCHAFF, Z.
2801*
SCHAFFNER, F.
0555, 1420, 2908*,
3694, 3966, 4443*,
4832*, 6849, 7901*
SCHAGHOLI, H.
3971

SCHAISON, G.
3523
SCHALLER, J.
8267*
SCHALLER, K.H.
0800*, 7632*
SCHALM, L.
0116
SCHAMAUN, M.
1466, 6590, 6723
SCHAMBYE, P.
3962
SCHANKER, L.S.
0846*, 1717*
SCHANTZ, P.M.
9261*
SCHAPIRA, F.
6818
SCHAPIRO, H.
5522, 5541, 7100
SCHARER, L.
1358
SCHARF, J.H.
8536
SCHARLI, A.F.
4802
SCHAUB, J.
8460, 8753
SCHAUBLE, J.F.
3198
SCHAUER, A.
0007*
SCHAUMANN, W.
4779
SCHAUMLOFFEL, E.
7827*
SCHCOLNICOV, B.
1821
SCHECHTER, D.
0658
SCHEDL, H.P.
1631*, 1632*, 2471*,
3239, 7055*, 8560*
SCHEDRUNOV, V.V.
5849
SCHEFFLER, G.
6968
SCHEIFFARTH, F.
2887, 4434, 9097
SCHEIG, R.
5246, 8669, 9041*
SCHEIG, R.L.
2411*
SCHEIN, C.J.
2507*, 5932, 6149,
8416, 8828*
SCHEINBERG, I.H.
3314*
SCHEININ, T.M.
2609, 2951*, 2979,
3168*, 4117, 4606
SCHELINE, R.R.
3791*
SCHELLER, C.
7957
SCHENA, F.P.
0273*
SCHENARDI, C.
0093*
SCHENK, P.
7214*
SCHENK, R.K.
5892
SCHENK, W.B.
0164*
SCHENK, W.G., JR.
1790*, 2483*, 6510
SCHENKEN, J.R.
3668
SCHENKER, S.
6029
SCHENKMAN, J.B.
2908*
SCHENTKE, K.U.
4494
SCHEPARTZ, B.
1737
SCHEPENS, G.
9249
SCHEPINA, A.K.
1161
SCHERBA, M.M.
1021*
SCHERBATENKO, M.K.
5704
SCHERER, H.
8149
SCHERL, N.D.
2970
SCHERSTEN, T.
0102*, 0847*
SCHETTLER, G.
2865
SCHEUER, P.G.
6125
SCHEUER, P.J.
0733*, 2127, 2140,
5672, 6778*, 8387
SCHIANTARELLI, P.
7826*
SCHIAU, S.
5302*
SCHICHIJO, K.
0222
SCHICHOR, S.
1726
SCHICKEDANZ, H.
5050, 6624
SCHIER, J.
1111*, 3910, 6673
SCHIER, J.F.
4183*, 7866*
SCHILD, H.O.
2377
SCHILDBERG, F.W.
6824
SCHILDT, B.E.
7049
SCHILLER, C.M.
8503*
SCHILLI, W.
0420
SCHILLING, P.
3771
SCHILLINGS, P.H.M.
5057
SCHIMA, E.
6381*
SCHIMKE, R.T.
7899*
SCHIMMEL
4297
SCHIMMEL, R.J.
6486
SCHIMMELPFENNIG, H.B.
1438*
SCHIMMELPFENNIG, R.
6042
SCHIMMELPFENNIG, W.
0186*, 1438*, 2819,
6042, 9162
SCHIMPF, K.
4402
SCHINDLER, A.M.
7561
SCHINDLER, S.C.
8243*
SCHINKE, G.
6153
SCHIODT, T.
6880*, 6881*, 7556
SCHIRALDI, O.
4636
SCHIRAR, M.
0816*
SCHIRARDIN, H.
9084
SCHIRMER, H.F.
8746
SCHISTAD, G.
5820
SCHJONSBY, H.
4222
SCHLAGER, J.
8566
SCHLEGEL, J.F.
0043*, 3883*, 3889
4789*
SCHLEIFF, I.
5041
SCHLESINGER, E.R.
3397
SCHLESINGER, F.L.
8720, 8721, 8722,
8723
SCHLICHT, I.
3825
SCHLICKE, C.P.
7503
SCHLOSSARCZYK, K.
9048
SCHLOSSER, H.
8320*
SCHMAHL, D.
6837
SCHMAHL, F.W.
6421*
SCHMAUSS, A.
6923
SCHMERLING, ZH.G.
0138
SCHMID, A.
3176, 5623
SCHMID, E.
6814
SCHMID, M.
2052

SCHMID, R.
4825*
SCHMID, W.C.
3698*
SCHMIDT, A.
6362
SCHMIDT, D.
7204
SCHMIDT, E.
3220, 4933, 8063
SCHMIDT, E.F.
8720, 8721, 8722,
8723
SCHMIDT, F.H.
1700*
SCHMIDT, F.W.
3220, 4933, 7609
SCHMIDT, G.
2697
SCHMIDT, H.
0252, 0814, 2554,
5971, 6601, 8245,
9015*
SCHMIDT, H.A.
6875*, 8886
SCHMIDT, H.D.
5144
SCHMIDT, J.
5194
SCHMIDT, M.
0202
SCHMIDT, P.J.
2104*, 7230
SCHMIDT, R.
5641
SCHMIDT GOFFI, F.
4355
SCHMIDT-KESSEN, W.
4652
SCHMIDTMANN, W.
6838
SCHMIDT-MENDE, M.
5338
SCHMIEGE, S.K.
4793*
SCHMIFTMANN, W.
2465
SCHMITERLOW, C.G.
0891
SCHMITT, G.
8656
SCHMITT, J.
5677
SCHMITT, W.
8390
SCHMITT-KOPPLER, A.
8827*
SCHMITZ, W.
2816
SCHMITZ-MOORMANN, P.
1304*, 1305*, 6976,
7736
SCHMUTZER, K.J.
7420
SCHMUZIGER, P.
4657
SCHNABEL, K.
7214*
SCHNACK, H.
2082, 4433, 5215,
7924, 9152*
SCHNAITMAN, C.
5440*
SCHNEIDER, B.
2838
SCHNEIDER, D.I.
7919*, 8279
SCHNEIDER, E.
0154
SCHNEIDER, E.G.
1701*
SCHNEIDER, G.
0186*, 1438*, 2819
SCHNEIDER, H.E.
6751
SCHNEIDER, J.
5680
SCHNEIDER, K.M.
5945
SCHNEIDER, K.W.
6198
SCHNEIDER, R.
4967
SCHNEIDER, R.E.
7025*
SCHNEIDERBAUR, A.
5265, 5287
SCHNEITER, R.
1907
SCHNELL, R.C.
7062*
SCHNIGER, N.U.
1242
SCHOCHET, S.S.
9059
SCHOENEMANN, J.
2364
SCHOENFIELD, L.J.
2395*, 3545*, 3626*,
3936*, 7184
SCHOFFENIELS, E.
5488*
SCHOFIELD, G.C.
0746*
SCHOFIELD, P.
8999
SCHOLCH, C.
5752
SCHOLES, V.E.
3953*
SCHOLLER, K.L.
3607
SCHOLTE, H.R.
2321
SCHOLTHOLT, J.
7994*, 7995*
SCHOLZ, R.
0869
SCHOLZ, R.W.
8625*
SCHOLZE, H.
2779
SCHOLZE, P.
3573
SCHON, E.
2036*
SCHONBACH, G.
1339
SCHONBUCH, C.
9222
SCHONDORF, H.
1721*
SCHONENBERG, H.
7452*
SCHONLAND, M.
2944*
SCHONUNG, W.
8698
SCHOOR, W.P.
6413*
SCHOPEN, R.D.
5165*
SCHOTT, H.C.W.
6274
SCHRADER, L.E.
4712*
SCHRAGER, J.
7772*, 7803
SCHREIBER, G.
1699*, 7890*
SCHREIBER, J.
8307
SCHREIBER, S.S.
3980, 6902
SCHREIBER, W.M.
6789
SCHREMMER, K.
5226
SCHRETLEN, E.
6077
SCHRETLEN, E.D.A.M.
2866
SCHRIEFERS, H.
3975
SCHRIEFERS, K.H.
1388, 1468, 4124,
6197
SCHROCK, T.R.
2455, 3940*
SCHRODER, G.
2871
SCHROEDER, D.H.
8546
SCHROEDER, E.
9136
SCHROEDER, E.T.
6876*
SCHROEDER, H.
5095
SCHROEDER, S.A.
6992
SCHROTER, W.
7776*
SCHRUB, J.C.
3337, 3467, 3468,
3751, 4649
SCHRUMPF, A.
1857*
SCHUBERT, G.E.
8848
SCHUBERT, W.
5063
SCHUBERT, W.K.
0358*, 7572

SCHUHMANN, R.E.
7182
SCHULLINGER, J.N.
6208
SCHULMAN, C.C.
2004
SCHULMAN, N.H.
6725
SCHULSINGER, G.
4537
SCHULTE, M.J.
0116
SCHULTE, S.
1761
SCHULTEN, H.J.
5074.
SCHULTHEISS, H.R.
6627
SCHULTIS, K.
4210, 5040, 5333,
6952
SCHULTKA, R.
5641
SCHULTZ, A.L.
0542
SCHULTZ, H.B.
0811.
SCHULTZ, M.G.
1549, 3019, 7010
SCHULTZ, P.E.
0492
SCHULTZ, S.G.
2325., 4771, 7844,
8550.
SCHULTZE, B.
8325.
SCHULZ, K.
5173.
SCHULZ, M.R.
8967
SCHULZE, H.J.
8536
SCHUMACHER, K.
5276
SCHUMAN, B.M.
4477., 8163
SCHUMANN, Z.
8576
SCHUMER, W.
7683.
SCHUPPEL, R.
8667
SCHUREK, H.J.
3976
SCHUSTER, G.
5941
SCHUSTER, H.
6605
SCHUSTER, M.M.
0260, 5002, 7194.
SCHUTZ, W.
9239
SCHWABE, C.W.
3015, 9261.
SCHWANITZ, G.
5138
SCHWARTZ, A.
2038., 6391
SCHWARTZ, H.
6589
SCHWARTZ, J.C.
0798.
SCHWARTZ, M.
1681, 5951, 6954,
7644
SCHWARTZ, M.Z.
2344.
SCHWARTZ, S.
6342
SCHWARTZ, S.E.
7358
SCHWARTZ, S.I.
6804, 7651., 8209
SCHWARZ, H.
6886
SCHWARZ, P.
6702
SCHWARZ, R.
6239
SCHWARZLOSE, W.
3616
SCHWARZMANN, V.
3611, 5174.
SCHWEITZER, F.A.W.
5902
SCHWEIZER, O.
4384
SCHWEMMLE, K.
4529
SCHWETZ, B.A.
0581.
SCHWILDEN, E.D.
8764
SCHWINDT, W.D.
1481
SCIORELLI, G.
3879, 3880
SCKENKMAN, J.B.
7901.
SCONDOTTO, G.
8789
SCOPINARO, J.A.
1490
SCOTT, A.J.
6463
SCOTT, F.
8021
SCOTT, G.L.
7678.
SCOTT, H.W.
2766
SCOTT, H.W., JR.
1142, 5859
SCOTT, I.H.K.
5902
SCOTT, J.
2006, 2031
SCOTT, J.M.
0804, 3390.
SCOTT, R.B.
6331
SCOTT, S.
0037
SCOTT, S.M.
5967
SCOTT-BURDEN, T.
7048
SCOTTI, A.
1204, 8114
SCOTTO, J.
2815, 5252., 5258,
5259, 5263, 6055.
SCRAGG, J.N.
7011, 7021
SCRATCHERD, T.
1689
SCRIABINE, A.
6378.
SCRIBA, M.
0621
SCROCZYNSKI, J.
3882
SCULLARD, G.H.
2213
SCULTETUS, R.
1890
SCWARTZ, R.
6438.
SCWARZENBERG, L.
3234
SEAH, C.S.
3261., 7448
SEAKINS, J.W.T.
8313
SEAMAN, M.J.
1583.
SEAMAN, W.B.
2838, 4526.
SEBASTIAN, S.
0258
SEBEK, P.
2654
SEBOR, J.
1440.
SECAF, F.
0353, 3539, 5032
SEDGWICK, C.E.
5303, 5866, 7758
SEDOVA, N.N.
7724
SEED, J.R.
7018
SEELIG, H.P.
8596
SEELIG, L.L., JR.
8328.
SEETHANATHAN, P.
7181
SEETHARAM, B.
5410.
SEEWANN, H.L.
6237
SEFTEL, H.
6945.
SEGAL, H.L.
2390
SEGAL, S.
0912., 8273.
SEGE, D.
6721
SEGEL, A.
0757
SEGLEN, P.O.
7155.
SEGNITZ, R.H.
6205

SEGRE, G.
0036
SEGRE, G.V.
4584
SEGURA, A.S.
0771
SEHGAL, A.K.
5867
SEIBERT, R.A.
7943
SEIDEL, E.
8293
SEIDEL, G.
4235
SEIDEL, K.
4417
SEIDL, P.
8841
SEIDLOVA, V.
2880
SEIDMAN, I.
7536*
SEIFART, K.H.
4710*, 6451*
SEIFERT, E.
2082
SEIFFERT, K.E.
5643
SEIFRED, H.E.
8525
SEIFTER, E.
8227*
SEIGNE, T.D.
3198
SEIJFFERS, M.J.
8583*
SEITZ, H.J.
5635
SEKERIS, C.E.
3814*, 4710*, 6451*,
7915*
SEKHARA VARMA, T.N.
4569*, 4694*
SEKI, S.
2269*
SEKIGUCHI, T.
0222
SEKINO, M.
2616
SELAMIR, H.
2083*
SELGRAD, P.
8927
SELIGMANN, M.
5346
SELKE, A.C.
8108
SELLS, B.H.
8681
SELMAIR, H.
0604*, 0610*, 7524*,
7538*, 7633*, 8367,
9052
SELTZER, M.H.
1454*, 8208
SELVANARAYANAN, S.
2973
SEMB, L.S.
0792*, 0794*, 1177, 1940

SEMBA, T.
0052
SEMBIRING, L.
3487
SEMENOV, V.V.
7402
SEMENZA, G.
1785*
SEMMLER, H.
9124
SEMONSKY, M.
2427
SEMYONOV, A.P.
6048
SEN, A.K.
3761
SEN, N.N.
2188*
SEN, R.
0961, 2195*
SEN, S.
2649
SENDRA LEON, P.
8901
SENFT, H.H.
6639
SEN GUPTA, P.C.
1553
SENGUPTA, S.
5626
SENIOR, B.
3199
SENIUTOVICH, V.F.
2661, 3383
SENN, A.
5332
SENSCH, K.H.
9253
SENSI, S.
0502
SENTKERESTI, B.
5750
SERAFINI, U.
0274*
SERAPINAS, I.L.
7806
SERCK-HANSSEN, A.
6065, 6070
SEREBRIANTSEV, V.K.
5972
SEREBRO, H.A.
5790, 6942*
SEREDIUK, N.N.
5810, 5851
SERENA, A.
0603
SERGEEV, V.V.
0042*, 5808,
7369
SERGIENKO, V.S.
7658
SERIAU, G.
4537
SERKA, J.
8992
SERNKA, T.J.
0030*
SEROR, J.
6201

SERRA, G.
4024
SERRANO-RIOS, M.
2842
SERVELLE, M.
0177
SERY, C.
9229
SERYCZYNSKA, H.
4876
SESHANARAYANA, K.N.
8191
SESHIREKHA, E.
1208*, 1428
SESHUL, M.B.
3628
SESTOFT, L.
6882*
SETH, R.K.
1523
SETHBHAKDI, S.
5020*
SETHI, R.S.
7357
SETKA, J.
2654
SEVERIDT, H.J.
4898
SEVERS, W.B.
7993*
SEWARD, C.W.
3283
SEWING, K.F.
0063*, 3146, 3921
SEYNAVE, R.
9229
SEZAKI, H.
3863, 5477*
SEZIN, M.
1059
SFORZA, E.
2053, 4636
SGARBI, E.
4522
SGRO, J.C.
1381
SHABANOV, A.N.
5803, 5973
SHABETAI, R.
6809
SHACKLETON, C.H.L.
2487
SHAFFIR, M.
5151
SHAFFNER, F.
6846
SHAFRIR, E.
0123, 6425*, 7889*
SHAH, D.R.
3599
SHAH, D.S.
3885*
SHAH, J.P.
3243*
SHAH, M.J.
2159
SHAH, M.N.
8306

SHAH, N.C.
7421
SHAH, R.M.
7637, 8377
SHAH, U.S.
3243*
SHAHIN, N.
3692
SHAIDULINA, H.V.
0178
SHAIKH, B.
3193
SHAKESPEARE, P.
2470*
SHAKHGILDYAN, I.V.
6084
SHALIMOV, A.A.
1537, 3532, 5814,
7390
SHALITA, A.R.
4814
SHAMANOV, A.KH.
3532
SHAMPINE, J.
8461
SHAMSIYEV, S.S.
7351
SHANKARAN, R.
7171
SHANMUGARATNAM, K.
3261*
SHANTHAKUMARI, S.
1528*
SHAPKIN, V.S.
6036
SHAPKINA, A.P.
6083
SHAPIRO, B.
2511*
SHAPIRO, E.L.
1021*
SHAPIRO, S.R.
0543
SHAPOT, V.S.
0092*
SHAPPLEY, B.G.
1521
SHARDA, D.C.
3743
SHARMA, B.N.
8049
SHARMA, B.V.S.
7185
SHARMA, M.L.
6015
SHARMA, M.M.
1303
SHARMA, N.L.
6224
SHARMA, O.
6125
SHARMA, S.
6524
SHARMA, S.K.
1349*
SHAROV, B.K.
7290
SHAROVA, Y.A.
7260
SHARPE, W.S.
1900*
SHARRATT, M.
1614
SHARTSIS, J.M.
3328
SHARYGIN, A.A.
7690
SHAW, A.
6207
SHAW, D.J.
4445*
SHAW, J.E.
7913*
SHAW, R.C.
3691
SHCHELOKOVA, A.V.
8254
SHEA, T.E.
0964
SHEAHAN, D.G.
0660, 0990, 6672*
SHEAR, L.
5299, 6123
SHEARER, M.J.
4757*
SHEARER, T.R.
7914*
SHEARMAN, D.J.C.
3271*, 3336, 3363,
4347*, 5075*, 6214
SHEAT, J.
6587
SHEEHAN, J.T.
3232
SHEEHAN, W.
6229
SHEEN, M.R.
4862
SHEENA, K.S.
7477
SHEFER, S.
7133*
SHEFFER, R.YA.
3672, 6271
SHEFT, D.J.
6714
SHEHATA, A.H.
6966
SHEIKMAN, M.B.
7617
SHEIKO, V.Z.
2552
SHEIL, A.G.R.
1938, 2451
SHEKHTER, I.A.
3308, 5710, 7267
SHEKHTMAN, A.B.
4479
SHELDON, G.F.
8232
SHELDON, H.
5465
SHELTON, E.L., JR.
4521
SHEPARD, G.H.
1081
SHEPHERD, A.R.
7739
SHEPPARD, E.P.
8657
SHEPPARD, L.
4018*
SHER, M.H.
5774
SHERB, J.
1558
SHERBON, K.J.
7468
SHERIF, S.M.
5089
SHERIFF, M.U.
1594
SHERLOCK, S.
0733*, 1350*, 2127,
3635, 4480, 5180,
6120, 6125, 6526,
6764*, 6778*, 6784,
6901, 8343, 8346*,
8387
SHERMAN, F.E.
5925
SHERMAN, L.
4288
SHERMAN, N.J.
0434
SHERRICK, J.C.
2175
SHERROD, T.R.
1796
SHERSON, N.D.
4553
SHERSTNEV, A.K.
7288
SHESHABERIDZE, M.S.
7639
SHETAIWY, S.K.
2408*
SHEVCHENKO, E.M.
1052
SHEVCHENKO, I.A.
0975, 7261, 7262
SHIBA, T.
3245*
SHIBATA, K.
3304
SHIBATA, S.
0781
SHIBKO, S.
0725*
SHIBUYA, S.
2326*
SHIDEMAN, F.D.
1781
SHIEBER, W.
2716
SHIELDS, R.
3463*
SHIGETA, K.
8727
SHIH, V.E.
7561
SHIHABI, Z.
2330*
SHIIZAKI, T.
2132*
SHIM, W.K.T.
1871, 4989

SHIMADA, M.
8589, 8727
SHIMADE, K.
6485
SHIMAI, K.
6330
SHIMAKAWA, T.
6733
SHIMAMURA, T.
4633
SHIMAZU, E.
1886
SHIMAZU, I.
2389
SHIMELIOVICH, L.B.
5711
SHIMEONI, A.
4891*
SHIMIZU, K.
8932
SHIMIZU, M.
3562, 8008*
SHIMIZU, S.H.
0537*
SHIMIZU, Y.
6366
SHIMKIN, M.B.
8086*
SHIMMINS, J.
1679
SHIMOJO, T.
6464, 7781*
SHIMOSATO, Y.
7558
SHIMOYAMA, M.
2367*
SHIN, C.S.
4764*
SHIN, D.H.
0824*
SHIN, T.K.
0223
SHINDO, Y.
3030*
SHINER, M.
1152*
SHINGLETON, W.W.
2028, 2935
SHINOHARA, R.
2292, 5596
SHINOZUKA, H.
6830*, 7787*, 7788*,
8317*
SHIOSAKA, T.
3846
SHIPKO, G.P.
3600
SHIPP, T.
1658
SHIRAISHI, T.
7995*
SHIRAKABE, H.
2542
SHIRAKI, K.
4366*
SHIRALDI, O.
2807*
SHIRES, G.T.
8028
SHIRLEY, B.C.
1346*
SHIROMA, M.
4492
SHIROTA, A.
3245*
SHISHIDO, H.
7624*
SHISHIDO, M.
8008*
SHISHOVA, E.K.
5471, 7496, 7808,
8155
SHIU, M.H.
5985*, 8303
SHIVAS, A.A.
1352*
SHKODINA, V.L.
0076
SHKROB, O.S.
5807
SHKURKIN, C.J.
6114*
SHLEVKOV, B.A.
1312
SHLYAKHTENKO, L.I.
6102, 6104
SHLYGIN, G.K.
3451, 5555, 7104
SHMAVONYAN, D.M.
2590
SHNEIDER, V.P.
6241
SHNEIVAIS, V.B.
5471
SHNIGER, N.U.
3308
SHO, S.
2078
SHOEMAKER, C.P.
2657*
SHOEMAKER, W.C.
8283
SHOEMAKER, W.J.
2403*
SHOJI, H.
2008, 2298
SHOOTER, R.A.
2232
SHOPA, N.A.
3260*
SHOR, L.M.
3412
SHORE, E.
2502*
SHORE, J.D.
6436*, 7140*
SHORE, J.M.
2502*, 2934, 6032,
6557
SHORLUYAN, P.M.
3534
SHOR-PINSKER, E.
7310
SHORTEN, E.A.
5008
SHORTER, R.
9115*
SHORTER, R.G.
0495*, 3626*, 5462,
5947*, 6730*
SHOTTON, D.M.
2361*
SHOWALTER, B.
2498*
SHRAGO, E.
2442
SHRIVASTAV, J.B.
3718
SHROCK, P.
2758
SHTEINBERG, G.B.
6191
SHTERN, B.M.
5708
SHUBA, L.I.
7687
SHUBA, M.F.
7084
SHUBLADZE, A.K.
0015*
SHUCK, J.M.
4292
SHUGAR, D.
0730*
SHUKLA, R.C.
1064
SHULL, H.J.
2766
SHULL, K.H.
8317*, 8626*
SHULMAN, A.
3892*
SHULMAN, V.S.
2888, 7628
SHUMKINA, O.B.
7586
SHUSTER, F.
3421*
SHUSTER, S.
7437*, 7439*, 7440*
SHUTKO, A.N.
0870
SHUVAEVA, V.I.
3306
SHWACHMAN, H.
5450
SHYSH, A.
7003
SIADATE, M.
9262
SIAK, C.L.
7448
SIBER, F.J.
4381
SICILIANI, M.
8773, 9194
SICKINGER, K.
8604
SICOT, C.
1409, 5232, 5667
SICUTERI, F.
2994
SIDDONS, R.C.
2285*
SIDERIDES, L.E.
3018

SIDORENKOV, O.K.
7098
SIDOROV, A.I.
5709
SIDRANSKY, H.
5990*, 6060*, 6830*,
7788*
SIE, H.G.
7923
SIEBER, W.K.
8192
SIEBERT, G.
1761
SIEBNER, H.
9166
SIEDE, W.
4532
SIEGEL, B.
4217
SIEGEL, C.I.
1301, 3317, 3507*
SIEGEL, H.I.
3342*
SIEGEL, J.H.
6903
SIEGEL, N.H.
5207
SIEGEL, S.
2401*
SIEGELMAN, S.S.
5649*
SIEGERS, C.P.
6068
SIEGMUND, E.A.
3048
SIEKEVITZ, P.
8661
SIERAKOWSKA, H.
0730*
SIERENS, L.
4691*
SIERKO, S.
0682
SIERRA, R.
2014
SIERRALTA, W.
6934*
SIES, H.
7131*
SIEVERS, P.
9248
SIEW, F.P.
6342
SIEW, S.
6342
SIEWERT, R.
9206, 9241
SIFFERT, G., JR.
4077
SIGDESTAD, C.P.
0906*, 1571*, 3029*,
7778*
SIGOT-LUIZARD, M.F.
8683
SIGSTAD, H.
5853
SIINA, H.
6384
SIKA, J.
6579*
SIKKENK, P.J.H.
3570
SIKOR, Z.G.
0044*, 3383
SIKORA, M.
0513
SILAEVA, V.A.
1039
SILAH, J.G.
6430*
SILBER, D.L.
4604
SILEN, W.
0785*, 7862*, 7883*,
8137
SILVA, L.DEC.
7764
SILVA, P.A.
1840
SILVA, Y.J.
8385
SILVA-CUEVAS, A.
7310
SILVEN, S.
1864
SILVENNOINEN, E.
3665, 6137
SILVERBERG, M.
2975, 5996
SILVERBERG, P.
0966
SILVERBERG, S.G.
8189
SILVERMAN, A.G.
3720
SILVERMAN, P.
5970
SILVERSTEIN, E.
0894
SILVERTON, R.
1919
SILVESTRINI, B.
7863*
SILVOLA, H.
4091*
SILVONEN, E.
1458*
SIMAN, J.
4078, 4079
SIMANKINA, E.P.
7463
SIMARD-DUSQUENE, N.
2405*
SIMCIC, V.
5203
SIMENKOV, V.M.
7381
SIMIC, P.
0628
SIMIONESCU, N.
2965
SIMKIN, E.P.
6599
SIMKOVA, Z.
5131
SIMLER, M.
1977
SIMMONS, R.D.
1136
SIMMONS, R.L.
6740
SIMMSEN, O.S.
0464
SIMON, A.
0571
SIMON, C.
4498
SIMON, E.
8698
SIMON, G.
6350*
SIMON, G.C.
0315, 0374, 0459,
1812
SIMON, J.
8172
SIMON, J.B.
9041*
SIMON, M.
4635
SIMON, M.A.
3349
SIMON, N.
6839
SIMONS, B.E.
1188
SIMONS, J.A.
2287*
SIMONSEN, E.E.
8296
SIMONYI, I.
8908, 9186
SIMOONS, F.J.
7446
SIMPSON, A.J.
1182, 2863
SIMPSON, B.R.J.
5603
SIMPSON, G.E.C.
0366
SIMPSON, I.W.
3647
SIMPSON, J.D.
5075*, 7275
SIMPSON, K.
1225*
SIMPSON, M.V.
6474
SIMPSON, R.T.
6329
SIMS, P.
5571*
SINA, A.G.
1204
SINAIKO, G.A.
0015*, 7586
SINGER, H.C.
8118
SINGER, L.
2928
SINGER, Z.
0334
SINGH, B.
1732, 3445*, 7357
SINGH, D.
2138

LIBRARY U OF I URBANA-CHAMPAIGN

SINGH, H.
1442*, 2943*, 5898
SINGH, I.
6306*
SINGH, M.
1612, 1912
SINGH, R.V.
7696
SINGH, S.V.
3599
SINGLETON, E.B.
7485
SINHA, H.B.
7423
SINHA, R.S.
1987
SINHA, V.N.
1612, 5008
SINICCO, A.
9105
SINN, I.
6480
SINNIAH, R.
0634*
SIPAROV, I.N.
7543
SIPERSTEIN, M.D.
8275
SIPLET, H.
8090*
SIRAKOV, L.M.
0886
SIRBU, Z.
4453
SIRCAR, B.
5626
SIRCUS, W.
0496*, 2762*, 3514,
5958, 6156*, 6736,
8054, 8089*, 8987*,
8988*
SIREGAR, D.
3772
SIREGAR, H.
3741
SIRINA, L.K.
6096
SISK, C.W.
4017*
SISLER, G.E.
7362
SITA DEVI, C.
4328*
SITAR, D.S.
6509
SITARAMAYYA, A.
7969
SITENKO, V.
1476
SITENKO, V.M.
7669
SITKERY, I.
2576
SITKOVSKY, N.B.
3517
SITORI, C.
5627*
SITZMANN, F.C.
9067
SIURALA, M.
2582*, 3098*, 4163, 7329*
SIVAKUMAR, B.
0129
SIZARET, P.
2528
SIZONENKO, P.C.
6402
SJOBERG, H.E.
5076, 8552*
SJOBERG, N.O.
3793*
SJOQVIST, F.
2456, 2457
SJOVALL, J.
2335*, 2487, 3173*,
3240*, 5254*, 7553
SKAKUN, N.P.
1478, 7170
SKALA, I.
4799
SKALOVA, M.
5122*
SKAUNIC, V.
0109
SKEIE, E.
8298
SKERRETT, P.V.
3425
SKIBA, W.
2268
SKIBBE, G.
1664, 6952
SKILANDAT, P.
7632*
SKILLEN, A.W.
6309*
SKILLETER, D.N.
7968
SKILLMAN, J.A.
8137
SKINHOJ, P.
6099, 6100, 7600*
SKIONESCU, S.T.
0321
SKJOLDBORG, H.
7343
SKLAR, M.
7698, 8446
SKOLYSZEWSKI, J.
4105
SKOPETS, M.D.
8884
SKOREPA, J.
8593
SKREDE, S.
3458, 7123*
SKRINJARIC-SPOLJAR, M.
8647
SKRIPNICHENKO, D.F.
2910
SKULBERG, A.
3593*
SKVIRSKAYA, E.B.
3089
SKYRING, A.
5124
SLACK, W.W.
1270
SLADEK, N.E.
8265*
SLADEN, G.
4595
SLANINA, P.
0891
SLAPAK, M.
1345*, 3196
SLATER, T.F.
3579
SLAUGHTER, R.L.
6063
SLAVNOV, V.N.
5730
SLEEMAN, K.H.
2454
SLEGERS, J.F.G.
7824
SLEIGHT, D.R.
3075
SLEISENGER, M.H.
0422, 4262, 6783,
7707
SLEZAKOVA, L.
2071
SLIFKIN, M.
1754
SLIM, M.S.
0482, 4971
SLOAN, H.R.
5411*
SLOAT, B.F.
2278*
SLOMKA, M.B.
1545
SLOTH, K.
6900
SMADIA, M.
3179
SMADJA, A.
5263
SMADJA, M.
5216
SMAGIN, V.G.
7522
SMAGULOV, A.S.
8791*
SMALL, D.M.
2404*, 7656*
SMALL, M.
2438
SMALL, W.P.
2762*, 5958, 8238,
8987*, 8988*
SMALLWOOD, R.A.
1694*
SMART, C.R.
4143
SMART, I.H.M.
0745*
SMETANA, H.F.
2198, 2881
SMETANA, K.
6765*
SMIALEK, M.
8272*
SMID, A.
2071

SMILARI, L.
2383
SMIRNOV, E.V.
6140
SMIRNOV, V.F.
7520
SMIRNOVA, A.P.
7073
SMIRNOVA, E.S.
7463
SMIRNOVA, S.A.
8355
SMIRNOVA, 7.N.
1368
SMITH, A.D.
3460*, 4286, 6989
SMITH, A.F.
4347*
SMITH, A.L.
0442
SMITH, A.N.
2762*, 3459*, 3482,
8234, 8987*, 8988*
SMITH, B.
3769*, 4634, 6171,
8077
SMITH, C.
7161*
SMITH, D.F.
8684
SMITH, D.W.
3114
SMITH, E.R.
5912
SMITH, F.E.
7885*
SMITH, G.
7929
SMITH, G.M.
2377
SMITH, G.P.
0070.
SMITH, G.W.
2729, 3327, 7905*
SMITH, H.
0680, 5324
SMITH, J.B.
0547, 1429
SMITH, J.G., JR.
2444
SMITH, J.M.
6618
SMITH, J.P.
1358
SMITH, L.
2169
SMITH, L.C.
4817
SMITH, L.D.
7150*
SMITH, M.G.M.
6766*
SMITH, M.W.
6372
SMITH, P.M.
0769*
SMITH, R.B.
3746
SMITH, R.B., III.
0655
SMITH, R.F.
3735, 6028
SMITH, R.L.
3165*
SMITH, S.
1716*, 1751, 7943
SMITH, S.E.
0136
SMITH, T.
5090*, 8425.
SMITH, V.M.
5002
SMITHWICK, W., III.
0698
SMOLDAS, J.
4154, 4893.
SMOLIAR, V.A.
3674
SMOLNIKOV, L.A.
6193
SMOLSKAYA, G.P.
7103
SMUCKLER, E.A.
4447*, 7562
SMY, J.R.
7089*
SMYTH, D.H.
3132, 4760*, 5491.
SMYTH, N.P.
7718
SNARR, J.W.
4914
SNART, R.S.
6298*
SNEER, A.
0077
SNEIDER, T.W.
2043, 3621, 7902*
SNESHKO, L.I.
1244
SNOEKS, T.
5861
SNOSWELL, A.M.
7970
SNOW, H.D.
2366*
SNYDER, F.
4387
SNYDER, R.
7115*
SNYDER, S.H.
7108*
SNYDER, W.H.
8117
SO, Y.C.
5549
SOAVE, F.
8794, 8812, 8814
SOBANSKI, A.
1058
SOBEL, S.H.
7358
SOBER, H.A.
6329
SOBERON, G.
8373*
SOBIESZCZANSKA, W.
2339*
SOBOLEV, A.A.
1244
SOBORG, M.
6877*, 6881*
SOBOTKA, J.J.
2646
SOCHA, J.
2386
SODA, K.
9217
SODARO, A.A.
3926, 3927, 3928,
4108
SODEMAN, W.A., JR.
1137
SOEHRING, K.
3969
SOFFER, R.L.
2301
SOGA, J.
1032, 3378
SOGEMEIER, E.
7571
SOKAL, J.E.
4370*
SOKHI, G.
4202
SOKOLOV, L.K.
0954, 7224, 7237,
7369
SOKOLOV, V.I.
2914, 7285, 7520
SOKOLOVA, G.M.
7627
SOKOLOVA, N.V.
2915
SOKOLOVSKI, B.I.
3762
SOKOLOW, J.N.
8736
SOLAROV, T.
1049
SOLASSOL, CL.
1395
SOLDANI, G.
0040*
SOLDATENKOV, P.F.
3255
SOLDUGA, F.
4326
SOLER-ARGILAGA, C.
8615*
SOLERE, M.
1827
SOLER PUGOL, R.
0218
SOLETO SAEZ, E.
8869
SOLEYMANI, Y.
6540
SOLIMAN, M.A.
2419*
SOLIMANO, G.
8426
SOLIN, M.
6296*

SOLING, H.D.
1735, 6794, 7964, 8608*
SOLMI, G.
1401, 2824
SOLOAGA, J.C.
1685*
SOLODOVNIKOV, YU.P.
1162
SOLOFF, L.A.
2993
SOLOHUB, L.I.
0899
SOLOMATINA, N.F.
5807
SOLOMON, P.
6254
SOLOVEV, M.M.
3008
SOLOVIEV, M.
2873
SOLS, A.
3191, 5585*
SOLTANI, M.E.
5439*
SOLTESZ, GY.
2337*
SOLTOFT, J.
1962*, 2761*
SOLVANG, S.
0806
SOLYMOSS, B.
1727
SOMANI, P.N.
1523
SOMASUNDARAM, K.
5794
SOMAYAJI, B.N.
4448*, 5237
SOMEYA, N.
6516*, 8004*
SOMMELET, P.
4103, 4517
SOMMERAU, J.
7154*
SOMMER-PEDERSEN, B.
2998
SOMMERSCHILD, H.
8276
SOMOGYI, Z.
2614
SONE, C.S.
0839*
SONG, C.S.
2274*
SONG, H.
4015*
SONG, K.T.
5966
SONNENSCHEIN, R.
3977
SONNTAG, H.G.
7823, 7983*
SOOD, I.D.
7762
SOODSMA, J.F.
4387
SOPER, R.T.
4604, 8108
SOPHINN, B.
9275
SOPIN, E.F.
8338
SORACE, R.
3144
SORANZO, L.
2884
SORBELLO, A.
0602
SORENSON, G.D.
2780
SORICE, G.
8403
SORKES, T.L.
0834*
SOROKA, V.R.
3116
SOROKIN, G.A.
2587, 3385
SOROKINA, I.B.
8287
SOS, J.
6350*
SOSA GALLARDO, C.
5324
SOSA-LUCERO, J.C.
3028*
SOSKIN, A.M.
8351
SOSNIK, H.
1444
SOSNINA, T.P.
7541
SOSROAMIDJOJO, S.
3487
SOTTANO DE RUSSO, E.
7847
SOTTOSANTI, M.
3926, 3927, 3928
SOUCHARD, M.
2491, 3924, 5554, 6416
SOULIER, J.P.
2114
SOULLARD, J.
8983
SOULSBY, E.J.L.
6268
SOURKES, T.L.
8645
SOUSTELLE, J.
4333, 4645
SOUTHAM, J.A.
1456*
SOUTHCOTT, R.D.C.
8205
SOUTHGATE, V.R.
8700
SOUTHWARD, M.E.
2034*
SOUTOUL, J.H.
1829
SOUZA, L.M.
0537*
SOUZA, S.A.
0389
SOVERA, A.
4455
SOVOYE, R.
4524
SOW, A.M.
5183
SOWA, J.
1363, 2521
SOWIER, J.
2963
SOWINSKA, B.
0283
SOYKA, L.F.
5418*
SPADA, S.
2911
SPAINHOUR, J.R., JR.
2602
SPALKE, B.
9096
SPANDONI, M.
0127
SPANO, C.
9138, 9141
SPARGO, J.F.
1230
SPARKS, R.D.
1878
SPARRER, E.
7958
SPAY, G.
4353, 4618
SPECK, B.
4651
SPECK, R.L.
1968*
SPEDEN, R.N.
0930
SPEISSENS, H.
2094
SPENA, A.R.
8749
SPENCE, D.
2444
SPENCER, F.C.
6991, 7312, 7362
SPENCER, I.W.F.
2221, 2234
SPENCER, J.
3313*, 5655*
SPENCER, R.J.
0495*, 1662, 5947*, 6730*
SPENCER, R.P.
7015
SPERANZA, V.
1027
SPERONI, M.
9037
SPESIVTSEVA, V.G.
0951*
SPEZIA, C.A.
7876
SPIEGEL, E.S.
6318
SPIEGEL, M.
6318
SPIELER, S.
0179*
SPIELVOGEL, A.
7836*

SPIESSENS, H.
6109
SPILIOPOULOS, A.
9022
SPINAR, J.
1015
SPINGOLA, L.J.
8131*
SPINOLA E CASTRO, F.
4035
SPIRA, R.
4509
SPIRER, Z.
2113
SPIRO, H.
6606
SPIRO, H.M.
5741, 5931, 6930*,
6932*
SPITZ, H.B.
8897*
SPITZ, L.
6711
SPITZER, G.
9234
SPOGLER, W.
8607*
SPOHN, K.
0563, 5144
SPONAROVA, J.
2898
SPOONER, B.S.
7780*
SPORRONG, B.
3793*
SPOTARENKO, S.S.
3005
SPOTO, R.C.
3421*
SPRATT, J.S., JR.
8196
SPRAY, G.H.
3931*
SPRINZ, H.
6247, 6672*, 6969
SPRUCH, T.
2638
SPYRIDES, G.J.
4007
SQUILLACI, G.
4583
SREEBNY, L.M.
5556, 7681*
SREE KUMAR, K.
7969
SREENIVASAN, A.
3841, 3937*, 6291*,
7186
SRINIVAS, H.V.
9260*
SRINIVASACHARI, P.
6643
SRINIVASAN, S.
1417*
SRIVASTAVA, K.K.
5361, 5362, 5363
SRIVASTAVA, V.K.
7479
STAALAND, H.
7805
STABILE, S.
5845
STACHER, G.
4136
STACK, B.H.
1293*
STACKER, A.D.
5862
STADELMANN, O.
0185*, 1823, 5348,
5717, 6537, 6539,
8022, 8059, 8064
STAEFFEN, J.
3653
STAFFELDT, E.
4396
STAFFEN, A.
9198
STAFFORD, F.S.
3724, 8898
STAHL, J.
4950
STAHL, W.M.
3656, 3725
STAHLER, E.
8633*
STAHLER, M.
6062*
STAHLHEBER, H.
0644, 0799*, 5666,
5963, 7880*
STAHN, R.
5426*
STAIB, A.H.
5628*
STAIB, R.
3977
STAIB, W.
3049, 3977, 6422*
STAIN, J.P.
9089
STAINBACK, W.C.
1263
STAINTHORPE, E.M.
5612*
STALELMANN, O.
0800*
STALHANDSKE, T.
0891, 4828*
STALLING, S.A.
3840
STALLONE, R.J.
3400
STALMANS, W.
7142*, 7146*
STAMPINO, C.G.
9196
STANCHEV, A.
2827
STANCIU, G.
8872
STANCIU, T.
6872
STANESCU, M.
0351, 8455
STANFORD, W.
4031, 4114
STANISLAVSKY, E.S.
7687
STANLEY, M.M.
8689*
STANLEY, N.F.
1453*
STAPITHANONDA, P.
5776
STARACE, E.
3993
STARINSKY, R.
7889*
STARINSKY, V.V.
8042
STARKA, L.
1739, 4424, 5605
STARTSEV, I.V.
7391
STARUSHENKO, L.I.,
7168
STARZL, T.E.
1225*, 2068, 2834,
6792
STARZYK, H.
1444
STARZYK, J.
0200
STASIEWICZOWA, A.
2791
STATE, D.
1931
STAUDACHER, M.
9198
STAUDACHER, V.
4582
STAUDINGER, H.
7886*, 7921*, 7933
STAUDT, U.
5642, 6417
STAUFFER, M.H.
2814
STEARNS, M.W.
3504
STEARNS, M.W., JR.
5112
STECKEL, R.J.
8420*
STECKENHESSER, R.
8746
STEELE, J.H.
3019
STEEVES, R.A.
2862
STEFANESCO, J.
6254
STEFANINI, M.
3591*
STEFANINI, P.
0286, 6152
STEFENELLI, N.
4961, 5629*, 5644,
7924
STEFFEN, C.
8602, 9050
STEGAGNO, G.
1104
STEGHERR-BARRIOS, A.
3763

STEIGER, E.
1454*, 7326*
STEIGMANN, F.
3613, 5659*, 8306
STEIN, B.
6256
STEIN, G.
0061*
STEIN, G.R.
7760
STEIN, J.
8685*
STEIN, J.A.
6059*, 8314
STEIN, N.
2329*
STEIN, O.
0010*
STEIN, Y.
0010*, 0122
STEINER, D.H.
1179
STEINER, H.
4531
STEINER, J.
0576
STEINHOFF, D.
6775*
STEINITZ, H.
6256
STEINMANN, I.
0531*
STEINNES, E.
5698
STEINRUCK, H.
8353
STEKKER, K.
8561
STELL, P.M.
1849, 6599
STELLAR, E.
7078*
STELLINI, L.
1282
STELMACHOWSKA, A.
0558
STELZNER, F.
4096, 5942
STEMMER, E.A.
7684*, 8445
STEMPIEN, S.J.
6113*
STENGER, R.J.
0757, 3596
STENGRAM, U.
0612
STENHOUSE, A.C.
7998
STENING, G.F.
2481*, 7860*
STENQUIST, B.
1935
STENRAM, U.
7773*, 8621*
STENSON, S.
5645
STEPHEN, S.J.
6598
STEPHENS, H.B.
8068
STEPHENSON, H.E.
8110
STEPHENSON, S.E.
3352
STEPHENSON, W.B.
6981
STERESCU, N.
5638
STERIN, D.
9009
STERLING, W.A.
2724
STERN, H.
1014
STERN, J.
8380
STERN, L.
7068*
STERN, R.
1386
STERNBERG, D.
6432*
STERNLIEB, I.
3314*
STERNS, E.E.
6505
STESINA, L.N.
7169
STEUDLER, V.
3085
STEVEN, L.W.
2526
STEVENS, D.P.
2106*
STEVENS, G.H.
0029*, 3551*, 5988*
STEVENS, J.
8540
STEVENS, J.F.
9170*
STEVENS, K.
6945*
STEVENS, L.E.
0095
STEWART, G.J.
6928*
STEWART, J.S.
3290, 3454, 8349*
STIBBE, J.
1583*
STIBENZ, H.J.
5481*
STIBENZ, J.
8521
STIEHL, A.
4932
STIEHL, P.
4427
STIFEL, F.B.
4848, 5427*, 5611*,
5613*, 5619*
STILL, J.
2100
STILL, W.J.S.
3080, 6331
STILLE, W.
2266, 5262, 6984
STILLER, D.
8297
STILSON, W.L.
0947*
STINSON, K.K.
2577
STIRLING, G.A.
1718*
STIRNEMANN, H.
0579, 0868, 1447,
6679, 8738
STIRPE, F.
2305, 3180, 3819*,
6317, 6466, 6821
STITNIMANKARN, T.
0538*
STJERNVALL, L.
5960*
STOCK, B.H.
5581*
STOCKEN, L.A.
5553*
STOCKHAUS, K.
8587, 8588
STOCKL, G.
6105
STOCKMANN, F.
3859
STOENESCU, R.
5302*
STOGNY, N.A.
3177, 7981
STOIAN, I.
4705*
STOICULESCU, P.
5302*
STOJANOVIC, L.
8802
STOJANOVIC, V.K.
6924
STOJKOVIC, J.
4079
STOKKE, K.T.
5422*
STOKOWSKI, L.
4425
STOLL
8204
STOLL, G.
4418
STOLL, U.
9283
STOLLER, J.L.
8025
STOLTERFOHT, C.A.
6814
STOLZNER, H.
4896
STONE, A.
0357*
STONE, H.H.
0655, 2092
STONE, R.T.
6212
STONE, W.D.
2134*
STONER, H.B.
0864

STONEY, R.J.
2137
STOODLEY, R.J.
5156
STOOPEN, M.
4034, 4336
STOPPA, R.
8470
STOPPANI, A.O.M.
4724, 5241
STOPPOLONI, G.
0016, 3749
STORCH, H.
8682
STOREN, F.J.
5307
STOREY, R.G.
2451
STORK, A.
2898
STORMER, B.
6422*
STORRING, F.K.
6802
STORZ, J.
9208
STOUT, T.J.
7386*
STOWELL, R.E.
2312
STOYANOV, A.
7457
STOYANOV, I.
0051
STRADA, G.P.
0284
STRAFACE, R.
1415*
STRAHLER, F.
6480
STRAJESCU, N.
1990
STRALIN, H.
2815, 5258
STRAMIGNONI, A.
3992*
STRANDBERG, K.
4790*
STRANDELL, T.
1873
STRANDHOY, J.W.
2400*
STRANGEWAYS, J.F.M.
8835
STRASSBURGER, I.
8517
STRAUB, K.
7120*
STRAUB, P.W.
8993
STRAUCH, G.O.
3018
STRAUCH, M.
5326
STRAUS, F.H.
8747
STRAUS, R.
0280
STRAUSS, A.A.
1914
STRAUSS, R.G.
1494
STREBEL, H.M.
0868, 8738
STRECKER, H.J.
2308, 6431*
STREEFKERK, J.
0116
STREET, B.W.
6444*
STREICHENBERGER, R.
5401
STREICHER, H.J.
5862, 9231
STRICKER, H.
3865*
STRICKLAND, R.G.
0065*, 0066*
STRIPP, B.
0860
STRITTMATTER, P.
1741
STRNAD, F.
5365
STROBEL, H.W.
4716
STROBEL, H.W., JR.
7537*
STRODE, J.E.
3402
STROHMEYER, B.
8724
STROHMEYER, G.
4401, 4404, 5278*
STROIA, V.
0077
STROMBERG, K.
6057*
STROMINGER, D.
1926*
STRONG, C.G.
6126
STRONG, M.J.
3317
STROTGES, M.W.
4922
STROTHER, A.
7942
STRUBELT, O.
6068
STRUCHKOV, V.I.
0951*, 7224
STRUCK, E.
4070
STRUNIN, J.M.
5603
STRUNIN, L.
5603
STRUTCHKOV, V.I.
3674
STRUYVEN, J.
7212*
STRZHIZHOVSKII, A.D.
0687*
STRZINEK, R.A.
3953*
STUCKE, K.
0529*
STUCKER, F.J.
3728, 5718
STUCKI, R.
9167
STUECKMANN, J.
4372*
STUKOVSKY, L.
4487
STULL, J.R.
7660
STUNKARD, A.J.
7078*
STUNKARD, J.A.
3771
STUR, O.
6003
STURM, R.E.
4789*
STURMAN, J.A.
5420*
STUTINSKY, F.
6482, 8656
STYSZEWSKA, H.
0595
SUBRAIAH, P.V.
6492*
SUBRAMANIAM, R.
7680*
SUCHKOV, A.V.
7626
SUCHOWSKY, G.K.
0831*
SUCIU, O.
0393
SUDA, Y.
1330, 3157
SUDHOF, H.
4442
SUDO, M.
6188
SUDRE, Y.
2183, 5261
SUDUCA, P.
4306
SUEMASU, K.
7558
SUEMATSU, T.
2394*, 4819*
SUEMORI, I.
8527
SUGA, S.
7158*
SUGANO, H.
1874
SUGANO, M.
0112
SUGAWARA, K.
0777*, 0778*, 1637,
1644*, 1645*, 3134*,
5540
SUGG, W.L.
1826*
SUGIMURA, T.
4128*, 4133*, 5175*,
6610*, 8088S
SUGIRI
7710

SUIDA, J.
4105
SUKAROCHANA, K.
5777
SUKHATME, P.V.
6215
SUKHOMINA, R.A.
2914, 7242, 7286
SUKHOMLINOV, B.F.
2589
SUKHOTERINA, L.A.
5551
SUKLA, R.N.
7020
SULC, M.
0578
SULCOVAM, J.
5605
SULEEVA, L.K.
2889
SULG, I.
7631.
SULLIVAN, B.H.
0695, 6543
SULLIVAN, B.H., JR.
1802., 2504.
SULLIVAN, J.F.
2892., 2894., 8369.
SULLIVAN, M.F.
0768.
SULLIVAN, R.J.
7799, 8626.
SULTAN, M.
7324.
SULTAN, M.N.
4927
SULTZ, H.A.
3397
SULWAY, M.J.
1850
SULYOK, B.
2576
SULZBERGER, I.
3660
SUM, P.T.
7883., 8244
SUMARTINI, T.
7710
SUMATHIKUMARI, C.
2099
SUMMERSKILL, W.H.J.
3266., 3704., 3705.,
5634, 5893, 6126,
6409., 8573.
SUMNER, W.C.
1343
SUMTSOV, N.A.
5814
SUN, D.C.H.
6658., 6760
SUN, S.H.
5289
SUN, T.
0710.
SUNAHARA, F.A.
5523
SUNDBY, F.
5614.
SUNDERMAN, F.W., JR.
7922.
SUNG, J.L.
2241
SUNSHINE, P.
3035., 4864.
SUNTHARASAMAI, P.
4660., 8496
SUNZEL, H.
7666
SURIANU, P.
0517
SURIER, E.C.
2904
SURRENTI, C.
0530., 0594, 2832,
3670
SURTYA, M.
7937
SUSHEELA, I.
1732
SUSSI, P.L.
4388
SUSSMAN, H.
8271.
SUSSMAN, L.
3589
SUSTEN, S.S.
6441.
SUSTER, G.
5929
SUSZ, J.P.
0725.
SUTCLIFFE, J.
2760, 7319
SUTHERLAND, E.W.
0911.
SUTNICK, A.I.
5268, 7607, 7622
SUTTIE, J.W.
7914.
SUTTLE, G.E.
5490.
SUTTON, P.M.
1692
SUYAMA, T.
5787
SUZAKI, T.
4049, 8711., 8887
SUZUKI, A.
3870, 3871
SUZUKI, F.
2294
SUZUKI, H.
5668, 6304.
SUZUKI, N.
3378
SUZUKI, R.
4633
SUZUKI, S.
6517., 7107., 7700
SUZUKI, T.
3320, 4006, 8507.
SUZUKI, Y.
4006
SVABENIKOVA, M.
0949.
SVANE, S.
1995
SVANVIK, J.
4868
SVEJNOCH, V.
4620
SVENSSON, S.E.
0796., 3143, 3151,
5528.
SVISCHEV, G.M.
1368
SVISTUN, T.I.
7097
SVOBODA, D.J.
3620
SWAIM, T.J.
2055
SWAMI, K.S.
2293, 4845, 8659
SWAMINATHAN, N.
1782., 5410., 7023.,
7024.
SWAN, M.
1505., 7436.
SWANLJUNG, P.
0875
SWANSON, R.F.
0139
SWARBRICK, E.T.
0397.
SWEENEY, V.P.
8269.
SWEETNAM, P.M.
1112.
SWELL, L.
7655., 8381
SWIATEK, K.R.
4689.
SWICK, R.W.
1586, 3807., 4700.
SWIFT, J.A.
1568.
SWINTON, N., SR.
2499.
SWINTON, N.W., SR.
5107
SWITZ, D.M.
2525
SWYNGEDAUX, J.
0419, 0580
SWYRYD, E.A.
0827.
SYBESMA, J.P.H.R.
4919
SYCHEV, P.S.
7373
SYDOW, G.
8295
SYED, S.A.
8702
SYLLM-RAPOPORT, I.
1762
SYLVEN, C.
3103., 4766.
SYMBAS, P.N.
1851
SYMEONIDIS, A.
8678
SYMES, A.L.
0834.

SYNOVETS, A.S.
3385, 3535, 7257
SYPHAN, B.
2775
SYPHAX, B.
3296
SYROMYATNIKOVA, E.N.
7594
SZABO, E.
6338
SZABO, I.
0394
SZADKOWSKI, D.
2805*, 7632*
SZANTAY, I.
3302, 8020
SZAZ, K.F.
0546
SZCZEKLIK, A.
7551
SZEKELY, A.
1650*
SZEKELY, P.
0394
SZEKLEY, J.
3881
SZELACHOWSKA, E.
2637
SZELECZKY, G.
0375
SZELENYI, I.
7937
SZENDE, L.
4356
SZETTEEV, K.Z.
8791*
SZEWCZUK, A.
7039
SZILAGYI, D.E.
3735
SZLACHTA, E.
4357
SZMUNESS, W.
5253*, 6864
SZOKOLY, V.
1706*
SZPORNY, L.
3345
SZURSZEWSKI, J.H.
0775*, 3238, 3884*
SZYBINSKI, S.
0075
SZYBINSKI, Z.
7734
SZYDLOWSKI, Z.
1444
SZYMCZAK, H.
4670
SZYMCZYK, W.
4105
SZYSZO, S.
2790
TABAQCHALI, S.
3343*, 8466
TABATA, M.
2422
TABOGA, V.
2593
TABON, F.
2682*
TABRIZAN, M.
5740
TABUCHI, S.
3900
TACHIBANA, K.
5547
TACORIAN, S.
2242, 5531*
TADA, K.
2063, 8262*
TAFT, D.A.
8421*
TAFT, R.D.
2841
TAGA, N.
2422
TAGAYA, I.
9217
TAGHIZADEH, A.
1692
TAGIEV, M.G.
6102, 6104
TAGLIACOZZO, S.
4054
TAGLIAFERRI, G.
6049
TAGLIAFERRO, E.
4317
TAHTI, I.
1085
TAILLIEZ, R.
8539
TAIPALE, V.
1518
TAIRA, N.
4788*
TAJANA, A.
0456
TAJIMA, M.
3758
TAKABATAKE, E.
6056*
TAKACS, L.
7592
TAKADA, A.
0101*, 6112*, 7597,
8316*, 8638*
TAKADA, M.
0706
TAKADA, T.
6516*, 8004*
TAKAFUJI, T.
6958
TAKAGI, K.
1019*, 1874, 5824*,
5829*, 6516*, 8004*
TAKAGI, M.
1744, 2184, 8642
TAKAHASHI, A.
3954*, 7128*, 7960,
8630*
TAKAHASHI, H.
8526
TAKAHASHI, J.
4930
TAKAHASHI, K.
4006, 6786, 7596, 7700
TAKAHASHI, M.
7328*
TAKAHASHI, R.
3231, 6983, 9243
TAKAHASHI, T.
2062, 4633, 6116*,8004*
TAKAHASHI, Y.
8618*
TAKAHASHIM, T.
3960
TAKAI, S.I.
4831*
TAKAMOTO, R.M.
4114
TAKANAKA, A.
2298, 7960
TAKANO, K.
8507*, 8522
TAKAO, Y.
8727
TAKARO, T.
5967
TAKAYAMA, S.
0856*, 2093, 4128*,
6610*
TAKAYANAGI, M.
5559*
TAKE, S.
3549*
TAKEDA, H.
2542
TAKEDA, M.
7022*
TAKEDA, Y.
2294
TAKEGAWA, S.
6982
TAKEGUCHI, J.
8638*
TAKEKOSHI, T.
2542, 6516*, 8004*
TAKEMOTO, T.
0192*, 0302, 3272,
6517*, 6553, 6559
TAKENAKA, M.
7222*
TAKENOSHITA, M.
3572
TAKEUCHI, A.
6016, 6672*
TAKEUCHI, J.
0101*, 6112*, 7597,
8316*
TAKEUCHI, S.
4006
TAKEUCHI, T.
7222*
TAKITA, T.
6666, 6826
TAKKI, S.
5855*
TAKKUNEN, J.T.
7444
TAKOLANDER, R.
3212
TAL, C.
8980
TALARICO, K.S.
7148*

TALBERT, J.L.
4602

TALBOT, N.
6282

TALBOT, P.
3999

TALBOTT, R.E.
4882

TALEB, M.
3273

TALIS, B.
6256

TALKE, H.
6421•

TALLEY, R.W.
6682

TALMAN, E.A.
2670

TALUJA, R.K.
1349•

TAMALET, J.
5887•

TAMARUA, M.
9259•

TAMAYO, G.S.
0980

TAMBAKU, S.N.
6720

TAMBIAH, R.
6482

TAMBORINI, G.
0165•, 0168, 0174

TAMBURRINO, E.
3926

TAMEMASA, O.
4749

TAMISIER, C.
3150

TAMVAKOPOULOS, E.
4826•

TAMVAKOPOULOS, S.K.
0817•, 2449, 5171•

TAN, B.H.
1386

TAN, C.
4015•

TAN, C.V.
5210

TAN, D.T.D.
6113•

TAN, K.K.
5891, 8311

TANABE, M.
5875

TANAKA, F.
6169

TANAKA, N.
3339•, 6376, 7344

TANAKA, S.
1406, 5954, 8087•

TANAKA, T.
5043, 5758, 6637,
8642

TANCREDI, F.
2675

TANDON, B.N.
0807•, 1551, 5360

TANDON, G.S.
1064

TANDON, H.D.
5868

TANDON, R.N.
4327•

TANEJA, O.P.
1303

TANEJA, S.
1303

TANG, J.
4810

TANGA, M.R.
1500, 3684, 4219

TANGHE, W.
7664

TANIDA, S.
7222•

TANIGAWA, Y.
2367•

TANK, E.S.
2714, 3493, 4867

TANKERSLEY, C.B.
0183•

TANNENBERG, A.
8315

TANNOCK, G.W.
6512

TANNOCK, I.F.
7044

TAPER, H.S.
0014•

TAPIA, R.A.
2869•

TAPISSIER, J.R.
6012, 9071

TAPP, R.L.
3038•

TAPPEL, A.L.
0725•, 1697•, 3799•

TARAN, V.V.
7619

TARASOVA, A.S.
7428

TARBIT, M.H.
1786•

TARDINI, A.
9007

TARI, J.
2304

TARIGAN, S.
3741

TARLOW, M.J.
8029

TARLOW, O.
8029

TARNAY, T.J.
2569, 6210, 6588

TARNOWSKI, W.
5635

TARPILA, S.
2582•

TARVER, H.
0060, 0726•

TASAKI, H.
2356•

TASHIRO, N.
7857

TASHIRO, S.
8842

TASHIRO, T.
7172, 7173

TASHJIAN, A.H., JR.
0137

TASHKHODZHAEV, P.I.
7496, 7808, 8155

TASSIN, B.
5023

TASSINI, T.
8047

TASSO, F.
5887•

TASSO, H.
5182

TASSON, J.
5496•

TASWELL, H.F.
2870•, 9115•

TATARINOV, Y.S.
5651•

TATARINOVA, O.M.
2888

TATE, I.
2459

TATEMATSU, A.
4778

TATEVOSYAN, A.S.
1246

TATON, J.
1056

TATSUZAWA, S.
6958

TAUBER, J.
0868, 1496, 6471,
9164

TAUBER, K.
3382, 4495

TAUBERT, W.
4986, 8762

TAUCHER, E.
1815

TAUXE, W.N.
7293

TAVADIA, H.B.
5907

TAVASSOLI, M.
3184

TAVERNA, P.L.
3433, 8572

TAVERNIER, J.
6562

TAYBI, H.
3480, 7489

TAYLOR, B.G.
1200

TAYLOR, C.B.
6423•, 7188

TAYLOR, D.E.M.
1195

TAYLOR, D.M.
2277•

TAYLOR, G.W.
3697•

TAYLOR, J.
2187•

TAYLOR, J.D.
1347•

TAYLOR, J.F.
3113

TAYLOR, K.B.
0065•, 0066•, 1683•
TAYLOR, K.J.W.
1407
TAYLOR, P.J.
2179
TAYLOR, W.H.
0858, 5045, 7864•
TAZAWA, K.
1032
TCHANG, S.P.K.
5319
TEEBOR, G.W.
7536•
TEFFT, M.
2836, 3560, 7220•
TEGNER, K.B.
0612
TEGTMEYER, C.J.
1080
TEICHMANN, W.
2871, 9099
TEIR, H.
1458•
TEIXFIRA, D.
1117, 1288, 2015, 2625, 2851
TEIXEIRA, M.S.
0944•
TEJWANI, G.A.
5438•
TELERMAN-TOPPET, N.
3456
TELIA, M.
2486
TELKKA, A.
2582•
TELKOV, N.A.
6038
TELLMAN, W.H.
7483
TELNICEANU, A.
4489
TELNOV, Y.A.
5724
TEMCHINE, B.G.
0076
TEMPERLEY, J.M.
0064•
TEMPLIN, R.
5653•
TENCONI, L.
0210, 0211, 6491, 7934, 8758
TEN HOVE, W.
6768•
TENHU, M.
1085
TENORIO, J.C.
1918
TEODORESCU, L.
0046
TEOFILI, M.T.
1869
TEOTIA, M.
1624•, 6224
TEOTIA, S.P.S.
1624•, 6224
TEPHLY, T.R.
7161•
TEPPER, P.A.
1326
TEPPER, S.A.
5565•
TEPPERMAN, H.
0130
TEPPERMAN, J.
0130
TERAO, K.
1607
TERAS, L.E.
7547
TERAYAMA, H.
0096•
TERAYAMA, T.
1798, 7699
TERBLANCHE, J.
8001
TERENTJEV, V.A.
2741
TERESHCHENKO, T.M.
3534
TERHO, T.
6659•
TERNBERG, J.
1926•
TERQUEM, J.
0665, 3371
TERRIER, P.
9214
TERRIS, G.
0088, 0708, 3364, 3366
TERROSI, F.
9006, 9027
TERZ, J.J.
1393
TESCOLA, F.
4406
TESKE, G.
4417
TESSARE, R.
4405
TESSIER, N.
3175
TESSMAR, J.
0426•
TESTA, H.J.
5652•
TESTA, V.
1885
TESTART, J.
1003, 5031, 5105
TESTORELLI, C.
3830
TETE, R.
5106
TETREAULT, L.
8592
TEUSCHER, G.
2909
TE VELDE, K.
2620
TEWARI, C.P.
3818•
TEWS, J.K.
5493•
TEXIER, J.
5185
TEXTER, E.C., JR.
3156
THAKERNGPOLO, K.
0538•
THAKUR, A.K.
5626
THALER, H.
4397, 4433, 8290
THAMAN, O.P.
7357
THAU, A.
3926, 3927, 3928, 4108
THAYER, W., JR.
5934
THAYER, W.R.
8009•, 8164
THAYSEN, E.H.
3418•
THEILE, H.
4400
THEILLIER, P.
0144
THEISINGER, W.
8149
THEKADI, R.J.
6996
THELEN, M.
2465, 5676, 6838
THEMANN, H.
6054•, 6293•, 8284
THENABADU, P.N.
6750
THEODOR, E.
3637, 4475•, 5273
THEODOROPOULOS, G.
3597, 5259
THEODOSSIOU, A.
6345
THEOLOGIDES, A.
1354•
THEORELL, H.
7973, 8541
THEPAUT, L.
4464
THEUER, D.
0184•, 1438•, 2819
THEUERKAUF, F.J., JR.
5109, 7474
THIBERT, F.
8713
THIEBAULT, F.
5227, 5284
THIEL, G.
3978
THIEME, E.T.
3745
THIEMANN, K.J.
6798
THIERREE, R.A.
6656
THIERS, H.
6724
THIRKETTLE, J.L.
0642
THIROLOIX, J.
3375, 8468

THIVOLET, J.
9121
THODE, I.
6639
THOM, H.
1215•
THOM, R.
3825
THOMAS, C.G.
7668
THOMAS, C.G., JR.
5933, 8107
THOMAS, C.S., JR.
3582
THOMAS, D.
6138
THOMAS, E.
7613, 8348•
THOMAS, G.
4964, 4965
THOMAS, G.M.
5390
THOMAS, H.M.
4338
THOMAS, J.
1212•, 2188•, 3145,
4642, 4643, 5340
THOMAS, J.M.
2612
THOMAS, K.L.
3764
THOMAS, M.
3179, 4942; 5216,
6523•, 9010
THOMAS, P.S.
0984
THOMAS, W.H.
1968•
THOMASSIN, N.
5218
THOME, J.
2905
THOMERET, G.
4975
THOMFORD, N.R.
0434, 3075, 4996,
6917, 7660
THOMINE, E.
7482
THOMPSON, A.
4877, 5242
THOMPSON, A.E.
0583
THOMPSON, E.
0060, 1787•
THOMPSON, E.B.
5177•
THOMPSON, G.R.
8123
THOMPSON, J.H.
4142, 5542, 7876
THOMPSON, J.C.
7093•
THOMPSON, J.H.
4998
THOMPSON, R.A.
0407•
THOMPSON, R.P.H.
0651
THOMPSON, W.
2270•
THOMSEN, A.C.
6891
THOMSON, C.G.
5958, 6156•, 8054
THOMSON, D.M.P.
1219•
THOMSON, J.F.
1586
THOMSON, J.W.W.
6713
THOMSON, T.J.
7413•
THOMSON, W.W.
1563•
THONGBHOUBESRA, T.
6396•
THORBAN, W.
1445
THORBJARNARSON, B.
2240, 2578
THORPE, E.
8331
THORSHAUGE, C.
5376
THOSHINSKY, M.J.
3400
THOUVENOT, J.
3902
THREEFALL, C.J.
0864
THROUGHMAN, J.C.
1200
THURNHEEER, W.
5163
THURSBY, P.T.
2022
THYS, O.
0428•, 8734
TIBAUDIN, H.A.
4036
TIBBIN, S.
0164•
TIBBLIN, S.
1790•, 2483•, 6510
TIBERGHIEN, R.
4013, 9280
TIBOR, V.
2745
TICHONICKY, L.
7800
TICHY, J.
2880
TICHY, M.
2890
TIDWELL, T.
7884•
TIETZ, N.W.
4015•
TIETZE, F.
4688•
TIISALA, R.
1085
TIKHOMIROVA, E.D.
3005
TIKHONOV, K.B.
7264
TIKHONOV, M.K.
7374
TIKHONOVA, L.P.
2492
TIKOTSKY, V.V.
7766
TILDON, T.
4689•
TILL, H.J.
3494
TILL, U.
0818•
TILLANDER, H.
1535, 1994, 3522
TILLEY, J.
3071
TILLIG, W.
0061•
TILZ, G.
4511
TILZ, G.P.
6550, 8766, 8767
TIMMERMANS, U.
3627
TINBERG, H.M.
6305•
TINKER, J.
1491, 3107•, 7082
TINOCO, R.C.
0994
TINTAREANU, J.
6254
TIONGCO, R.
3134•
TIPTON, K.F.
6335
TIPTON, S.R.
0133
TIRELLI, G.
8985
TISCORNIA, O.M.
8169
TISCORNOA, O.M.
7450
TISHER, R.
2818
TISOVA, R.A.
2889
TISSOT-FAVRE, A.
6884
TITEICA, M.
0351, 5646•
TITOLI, F.
6183
TITOV, R.V.
5973
TJAIJ, J.K.
3487, 3741, 3772
TJALVE, H.
0891
TKACH, V.N.
6195
TKACZ, B.
4488
TKATCH, R.
8583•
TOBE, T.
5009, 5320, 5378

TOBON, F.
0260
TOCHEV, K.
4934
TOCHIKUBO, K.
0479
TOD, R.
6656
TODA, N.
5009, 5010, 5320,
5378
TODA, T.
3643*
TODD, I.P.
3769*, 8222, 8225
TODOROFF, T.
5221*
TODOROVIC, V.
7425
TOEWS, C.J.
2446, 6425*
TOGHILL, P.J.
2126
TOGNOLA, W.A.
2040
TOH, C.C.S.
5082
TOKES, L.
3194
TOKIN, I.B.
6190, 7038, 8569
TOKIN, R.
3473
TOLBERT, N.E.
8617*
TOLEKOV, N.
1157
TOLENTINO, E.M.
4824*
TOLIA, R.M.
3333
TOLINS, S.
6173
TOLINS, S.H.
8411
TOLLAKSEN, S.L.
1586
TOLLINS, S.H.
4340
TOLMAN, E.L.
8672
TOLOT, F.
3786
TOMA, P.
3381
TOMAN, R.
3759
TOMARU, T.
6581
TOMASI, T.B., JR.
4573*
TOMASI, V.
6428*, 6447*
TOMASINI, J.T.
4713*
TOMASZEWSKA, L.
1426
TOMASZEWSKI, P.
2596
TOMATIS, H.P.
4152, 8862
TOMINGAS, R.
3183, 3971
TOMIO, N.
4454
TOMITA, K.
3030*
TOMITA, T.
3516*, 7857
TOMIYOSHI, F.
7054*
TOMKINS, G.
0097*
TOMKINS, G.M.
5170*, 7900*, 8264*
TOMLINSON, S.J.
7182
TOMLINSON, W.M.
7182
TOMMASI, A.C.
2832, 3670
TOMOKUNI, K.
0828*
TOMORI, G.
2008
TOMPKIN, A.M.B.
1910
TOMPKINS, R.K.
3520
TONDI, D.
4987, 7426
TONELLI, E.
0217
TONER, P.G.
7034*
TONGIANI, R.
3057
TONI, G.
3986
TONIC, L.
8802
TONIETTO, G.
0527, 0670
TONMUKAYAKUL, A.
1260
TOPCHIASHVILI, Z.A.
8409
TOPINKA, P.
0578
TOPUZOV, V.S.
3727
TORI, G.
5671
TORIZUKA, K.
3297
TORKHOVSKAYA, T.I.
0092*, 8287
TORLONE, V.
6183
TORNILLA, M.J., JR.
1957
TORNOCZKY, J.
5161
TORRADO, A.
2940
TORRANCE, H.B.
4873, 5652*
TORRE, G.C.
0145, 0173, 3666
TORRES, A.
2716
TORRES, H.E.
1436
TORRES, L.
1297
TORRES, U.L.
1452
TORRES-PINEDO, R.
8167*
TORRES VALADEZ, F.
0461
TORSOLI, A.
4322
TOSCANO, F.
1972*
TOSHIKANE, M.
0479
TOSHKOV, A.
7848
TOSI, G.
4321
TOSI, P.
0147
TOSKES, P.P.
3260*, 3425, 6412*,
8449
TOSKIN, K.D.
1326
TOSO, M.
3928
TOSOVSKY, V.
4229
TOSSATTI, E.
1332
TOSTIVINT, R.
4909, 5048
TOTH, Z.
4081
TOTTEN, R.S.
1576*
TOUHAMI, M.
8134
TOULET, J.
4410, 7500*, 8907
TOULOUKIAN, R.J.
1517, 2577
TOUNSI, A.
3408
TOURAINE, P.
8810
TOURNIER-LASSERVE, A.
5289
TOURNIER-LASSERVE, C.
9274
TOURRES, M.
4682
TOURY, R.
7931
TOUSIMIS, A.J.
2315
TOUSSIS, D.
9255
TOUSTER, O.
1712*
TOWNES, P.L.
3393*

TOWNSEND, H.R.A.
6522*
TOYAMA, W.M.
1804*, 8195
TOYE, D.K.M.
8141
TRABATTONI, P.
0693
TRABULSI, L.R.
2264
TRACHT, D.G.
1515
TRAEGER, A.
7898*
TRAGOR, S.
0517
TRAGUS, E.T.
2572
TRAKHTENBERG, A.KH.
8042
TRAMMELL, S.W.
6660
TRAMS, E.G.
3803*
TRAN, M.A.
3901
TRANIELLO, S.
6290*
TRAPANI, P.
0216
TRAUL, D.
4973
TRAUT, G.
6165
TRAUTMAN, W.J., JR.
6630
TRAVKIN, JU.A.
3673
TREIBER, W.
6611*
TREIGER, M.
2102
TREITEL, H.
3469
TRELSTAD, R.L.
5983*
TREMBLAY, M.
8815
TREMOLIERES, J.
1929, 8920
TRENCIS, L.
7862*, 7883*
TRENHOLM, H.L.
6061*
TRENTALANCE, A.
3970
TRENTI, A.
2217, 2466
TREPO, C.
4204, 7323*, 9121
TREPPOZ, M.
1145
TREPTOW, H.R.
2906*
TRESTARD, A.
8957
TRETHEWIE, E.R.
7575*
TRETYAKOV, N.I.
0383
TRETYAKOVA, T.A.
7289
TREVINO GARCIA MANZO, N.
3603
TREY, C.
2090, 3548*, 5179,
5240, 6088, 7211*
TRIA, E.
3970
TRIBBLE, D.E.
7311
TRIBUKAIT, B.
7904*
TRIC, PH.
4410
TRIER, J.S.
3312*
TRIMBLE, C.
1318, 1410
TRIMPENEERS, F.
1412
TRINEZ, G.
4413
TRINH, S.
5408
TRINIDAD, J.
0365
TRINKER, F.R.
7940
TRINKLE, J.K.
6205
TRIPATHY, A.M.
2160
TRIPATHY, K.
4605
TRIPPESTAD, A.
2478
TRISTANI, F.E.
2145
TRITTO, V.A.
4150
TRIUMFORA, N.S.
3671
TRIVEDI, P.M.
2258
TRIVELLINI, G.
2750
TROCCOLI, G.
0273*
TROELSTRA, J.A.
7529*
TROGLIA, O.M.
5622
TROGNON, B.
8158
TROITSKY, R.A.
5938
TROLL, U.
8691
TRON, PH.
0747*
TRONCALE, F.J.
0259, 2685*, 2689*
TRONCONE, L.
6755, 8757
TROP, D.
8012*
TROUBE, H.
8650
TRUB, C.L.P.
8017
TRUCHAUD, M.
9224
TRUCKENBRODT, H.
5345
TRUDEAU, W.L.
1669*, 2323, 7384*
TRUEBLOOS, H.W.
4911
TRUELOVE, S.C.
1024*
TRUEMAN, K.R.
5778
TRUINI, F.
2180, 2185
TRUITT, E.B., JR.
6851
TRUMP, B.F.
3797*
TRUMP, D.S.
1267
TRUNIN, M.A.
1327, 7523
TRUONG, T.K.
5675, 8485*, 8486*
TRUQUES, J.
0013*
TRUSOV, V.V.
2825, 5888
TRYFIATES, G.P.
7927
TSAI, H.
8524
TSAI, J.H.J.
8524
TS'AO, C.H.
3043
TSAREV, I.I.
0431
TSCHESCHE, H.
0085*
TSCHOPE, E.
1788
TSCHUDI-STEINER, I.
4655
TSCHUDY, D.P.
4847, 6059*, 8314
TSEKHANOVICH, T.I.
7366
TSIGANOV, A.I.
2550
TSIRULNIKOVA, N.E.
7237
TSLAF, Z.Z.
7518
TSODIKOV, G.V.
7336
TSOUFIS, E.
4679
TSUCHIYA, K.
3129, 9217
TSUCHIYA, T.
1868
TSUDA, H.
8087*

TSUDZEVICH, B.O.
8338
TSUJI, T.
6106
TSUKADA, Y.
7559
TSUNEMATSU, K.
4991
TSUNEOKA, K.
6553
TSUNEYAMA, H.
1351*
TSUYAMA, N.
8526
TSVETKOVÁ, V.V.
7548
TSVIRKUN, F.M.
7257
TSYGANENKO, I.T.
9181
TSYPKIN, V.I.
6084
TUBIANA, M.
4360*
TUCHSZER, S.
1821
TUDOSIE, N.
3544*
TUIDZHANOV, KH.K.
1242
TULEJA, C.W.
5796
TULLIS, D.C.H.
2257
TULPULE, P.G.
1760
TUMEN, H.J.
2645, 7001, 7546,
7752
TUMOLO, M.A.
2695*
TUMPSON, D.B.
2368*
TUNG, L.C.
1396
TUPASI, T.E.
2267
TUPITSINA, R.V.
1369
TUREK, K.
4305
TURGANBAEV, A.T.
8791*
TURINETTO, B.
0215, 0322
TURKER, R.K.
0776*, 4797*
TURNBERG, L.A.
3094*, 3100*, 4506*
TURNBULL, A.
0432
TURNBULL, R.B.
5909, 8999
TURNBULL, R.B., JR.
3715, 4289, 8221
TURNELL, R.W.
2429
TURNER, D.
1876
TURNER, G.
7952
TURNER, G.C.
0609*
TURNER, K.
0163*
TURNER, M.D.
0933*, 1676, 2390
TURNER, M.K.
0855*
TURPIN, G.
5346
TURULEVA, V.T.
7729
TUSQUES, J.
0012*, 0013*
TUTIN, M.
8247
TUTTLE, R.J.
9269
TUXFORD, A.F.
8423*
TUYNS, A.J.
4122
TUZHILIN, S.A.
1312, 7285, 7518
TWOMEY, J.J.
4130*
TYCE, G.M.
0802*
TYGSTRUP, N.
0863, 1380, 6877*,
6880*, 6881*, 6899,
6900
TYLER, F.H.
7162
TYOR, M.P.
8896*
TYSON, R.R.
1704*, 2993
TZSCHOPPE, M.
1673*
UBEZIO, G.
5033, 7254
UCHIDA, H.
3182
UCHIDA, I.
6581
UCHIDA, K.
8632*
UCHITEL, I.YA.
0148
UCHIYAMA, I.
2422
UCHIYAMA, M.
0857
UDAWAT, J.P.
6015
UDEN, R.
2768*
UEBERSAX, R.
6688
UEDA, H.
0224
UEDA, I.
2367*
UEDA, T.
6666
UEKI, M.
7910*, 7916*
UEKUSA, M.
7322*
UEMURA, J.
8842
UENO, K.
4988, 8842
UENO, N.
1937
UETE, Y.
2409*
UGARTE, G.
3610, 4463, 9154
UGAZIO, G.
4471
UGOLEV, A.M.
3091, 5498
UGRIUMOV, B.L.
6091
UHLMANN, W.
4980
UJIIYE, A.
4576*
ULLRICH, V.
7886*, 7921*
UMANSKIY, S.SH.
0076
UMANSKY, S.S.
7240
UMBRUMYANTS, O.A.
5841, 5843
UMEDA, T.
4831*
UNDERWOOD, J.
3802*
UNDT, W.
4961
UNGARI, S.
1104
UNGEHEUER, E.
4125, 6703
UNGER, G.
8748
UNGER, K.
5062
UNGVARY, G.
1325, 2304, 2464,
6753
UNNI, P.N.
4564
UNTERECKER, W.J.
7526*
UNYI, G.
1652
UOTILA, U.
1085
UPCHURCH, H.F.
7165
UPSON, D.W.
4781
URAGODA, C.G.
6598
URAKAWA, N.
2332*, 2475
URASAKI, M.
0208
URBAN, A.
0275*, 1057, 8127

URBAN, E.
1631*, 2471*, 3239,
8560*
URBANOWICZ, M.
3622, 4444*, 5149*,
5176*
URBINA, A.M.
8426
URCA, I.
1139
URETA, T.
6324
URIEL, J.
2060, 4740, 5651*
URRUTIA, J.J.
1529*
USAKOVSKAYA, T.S.
2468
USARDI, M.M.
5627*
USATENKO, M.S.
3805*
USHER, F.C.
8904
USHER, J.
1730
USHIJIMA, H.
4709*
USHIKUSA, H.
4355
USIKOV, F.F.
7407
USOVA, N.A.
5706
USPENSKY, V.M.
5847, 7394
USTACH, T.J.
0260, 7194*
USTINOV, V.N.
5524
USTYANTSEVA, V.D.
1369
USUKU, G.
7345
USZYNSKI, H.
0151
UTESHEV, N.S.
7402
UTHGENANNT, H.
4499, 4508
UTSUMI, I.
6376
UY, F.
4859
UYEDA, F.
0183*
UZYANOVA, V.L.
2897
VAAMONDE, C.A.
6127
VAAMONDE, L.S.
6127
VACCARINO, A.
4046
VACEK, L.
3723
VACHER, D.
9092
VACHHA, S.M.
7828*
VACHON, A.
2803*, 3319, 5106
VADHAT, A.
5353
VAENERBERG, C.E.
3212
VAERMAN, J.P.
2484*
VAGNE, M.
3925
VAHRMAN, J.
0607*, 3625*
VAIDYA, A.B.
2159, 6214
VAIDYA, M.P.
3478
VAILLE, C.
2491, 3924, 5554,
6416
VAILLET, A.
8371*
VAILLET, J.
0058*
VAINIO, H.
2430
VAINSHTEIN, T.Y.
7514
VAIRET, A.
4464
VAISBROT, V.V.
7496, 8155
VAITTINEN, E.
5309
VAJDA, J.
2496
VAKALIUK, P.M.
5810
VAKIL, B.J.
1531*, 4686, 9273
VAKILI, C.
5774
VALASEK, W.
2883
VALAU, D.
4082
VALAYER, J.
8793
VALBERG, L.S.
1991, 2628, 5072*
VALBUENA, O.
7090*
VALCIC, M.
6432*
VALDES, A.V.
1986
VALDES ARAUCHO, K.
1241
VALENCIA-PARPARCEN, J.
0940*, 0941*, 0955,
5765*
VALENKEVICH, L.N.
2966, 6111, 7519,
7522
VALENTE, U.
1307, 6535
VALENTIM, J.B.
4673
VALENTINI, S.B.
2921, 3912, 8818,
8958
VALENZANO, G.
1885
VALENZUELA, I.
8426
VALENZUELA, J.
0514
VALETTE, G.
0798*, 1651, 5527
VALKIN, M.L.
7397
VALLE, A.
0017
VALLEGA, A.
3610
VALLE-RIESTRA, J.
7066*
VALLI, B.
2735
VALLIN, J.
2681, 3309, 3375,
8101
VALMAN, H.B.
0509, 3119
VAN ACKEREN, H.
4943
VAN BADEN, M.
5870
VAN CAMPENHOUT, E.
0020
VAN CANFORT, J.
4853
VAN CITTERS, R.L.
6499*
VAN DAMME, J.
0408*
VAN DAMME, J.P.
0926
VAN DAMME, L.
5861
VAN DE BERG, A.
4616, 5402
VAN DE BERG, L.
9223
VAN DEENEN, L.L.M.
2286*, 8646
VAN DEN BERG, J.W.O.
7986*, 8513*
VANDENBROUCKE, J.
6953, 9157
VANDEPITTE, J.
8439
VAN DER HOEDEN, R.
3229
VAN DER KLOOT, J.F.V.R.
5869
VAN DER LINDEN, W.
1770, 7666, 7894*
VAN DER MEERSCH, C.
9249
VAN DER MERWE, C.J.
3664*
VANDERMEULEN, J.H.
3055
VANDERPITTE, J.
3713

VAN DER SCHUEREN, G.
0926
VAN DER WATT, J.J.
6769.
VANDERZWAAG, R.
6276
VAN DE STAAK, W.J.B.M.
5057
VAN DE STADT, F.R.
3677
VAN DE VYVER, W.
0312
VAN DIJCK, J.M.
7033.
VANDOR, S.L.
8617.
VAN DUUREN, M.
4698.
VANG, O.
1175
VAN GOLDE, L.M.G.
2286., 8646
VAN GRAVENITZ, A.
7250
VAN HAELST, U.
6771.
VAN HARKEN, D.R.
2417.
VAN HEE, W.
2515
VAN HOOK, E.
7948
VAN KAICK, G.
4949, 6576
VAN KEMMEL, M.
0289, 0503, 1917,
5061, 5334, 5337,
5348, 5350, 5364,
8257, 8471, 8916
VANLANCKER, J.
0817.
VAN LANCKER, J.L.
4826.
VANLERENBERGHE, J.
8579
VAN MIEGHEM, W.
9157
VAN MIERT, A.S.J.P.A.M.
1666., 3893.
VAN NOYEN, R.
3713
VAN OLDERHAUSEN, H.F.
2065
VAN OS, C.H.
7824
VANOVSKI, B.
0596
VAN OYE, E.
8439
VAN REES, H.
2348
VAN ROSSUM, G.D.V.
2343.
VAN ROY, M.
0388
VAN RYMENANT, M.E.
3051
VAN TONGEREN, J.H.M.
5057

VANTSYAN, E.N.
0240
VANTTINEN, E.
2979
VAN WAY, C.W., III.
3489
VAN WIJK, H.B.
2253, 2254
VAN ZIJI, F.D.D.T.
0659
VAN ZUL, W.J.
3748
VAN ZWIETEN, P.A.
5534., 7875
VAN ZYL, J.J.W.
0659
VARGA, D.
7708
VARGA, G.
4468
VARGA, L.
4468
VARGA, S.
1727
VARGHESE, A.
0948.
VARIAKOJIS, D.
6536
VARNER, P.
6671.
VARONOS, D.
6388, 6389
VARRO, V.
2389, 2621, 4807.
VARSHAVSKY, YU.V.
0318
VARTERESZ, V.
2423
VARUTE, A.T.
3066, 3067
VASCONCELLOS, D.
2626
VASCONEZ, L.O.
5792
VASERIN, YU.I.
1422
VASILCHENKO, V.G.
2746
VASILENKO, G.L.
7673
VASILENKO, I.V.
1061
VASILENKO, V.K.
5806, 7336
VASILEV, N.
1120
VASILEV, Z.
3473
VASILEVSKAYA, L.S.
7694
VASILIEV, R.K.
7286
VASILIEV, V.S.
3674
VASILIEV, Y.V.
7237, 7369
VASILYEV, V.S.
0951.

VASIL'YEVA, E.N.
7694
VASILYUK, V.N.
1116.
VASKO, J.S.
6917
VASQUEZ, M.A.
1508., 1525.
VASSILIADES, G.
4683
VASSORT, F.
4360.
VASYUTKOV, V.Y.
7692
VATNER, S.F.
6499.
VAUGHAN, G.E.R.
6505
VAUGHAN, J.P.
6810
VAUGHAN, M.
4008
VAUGHN, J.P.
5219
VAUTRIN, D.
2534
VAVERKOVA, H.
2880
VAVRECKA, M.
0850.
VAWTER, G.F.
2836
VAYESSE, N.
7987
VAYNSHTEYN, S.G.
7672
VAYRE, P.
0385, 0673, 4999,
8752, 8799
VAYSSE, N.
4812
VAYSSE, P.
2617
VAZ DIAS, H.
6292.
VEAZEY, R.A.
0107
VECCHI, G.P.
8607.
VEDEL, J.
9228
VEDEL, J.P.
8072
VEDRENNE, C.
6822
VEECH, R.L.
1589, 1775, 4733
VEGA, P.
6470
VEGNENTE, A.
3993
VEIDENHEIMER, M.C.
3512, 5133, 8202
VEISA, E.
0348
VEISSIERE, D.
5310
VEITH, F.J.
6611.

VELA, A.R.
0983, 2548*
VELA, G.R.
3953*
VELASCO, M.
9120
VELASCO SUAREZ, C.
4036
VELASQUEZ, A.
2959, 3219, 3224
VELATI, G.F.
4350
VELBRI, S.K.
1311
VELCEV, V.
7960
VELEZ, H.
4623
VELEZ-GARCIA, E.
3001*
VELICAN, C.
5531*
VELICAN, D.
5531*
VELICHKO, L.A.
8339
VELLUDO, J.
1126
VELO, G.P.
2215
VELTRONI, A.
1484
VENABLES, C.W.
2581*
VENDITTI, A.
2823
VENDSBORG, P.B.
3962
VENEZIALE, C.M.
7966
VENHO, V.M.K.
5855*
VENKATACHALAM, B.
5790
VENKATACHALAM, M.A.
5439*
VENKATESAN, T.V.
1180
VENKITASUBRAMANIAN, T.
3934*
VENKITASUBRAMANIAN, T.A.
1612, 7171
VENKOV, P.V.
0124
VENNES, J.A.
1643, 6563
VENNITS, H.W.
4190
VENTURA, U.
3879, 3880
VENZIONI, M.
8811
VEPRINSKAYA, S.I.
5723, 7259
VERBET, J.
4352
VERBITSKAYA, V.N.
2956
VERCELLINO, A.
3581
VERDIER, J.M.
4351
VERDONK, G.
5895
VEREBELY, K.
5607
VERESOTSKAYA, N.A.
0153
VERESS, B.
4730
VERGA, L.
3683
VERGER, P.
9091
VERGOZ, D.
0591, 5288
VERGUES, J.
1193
VERHAEGE, M.
3422
VERHAEGEN, H.
4255
VERHAEGHE, M.
5111
VERHAS, M.
4184*
VERIN, V.K.
7052
VERINE, H.
0083*
VERINE, H.J.
3922
VERITA, F.
2107*
VERMEULEN, H.J.
9058
VERNASCA, M.
3983
VERNE, J.
3821, 4741
VERNES, A.
4907, 9290
VERNEY, E.
5990*, 6060*
VERNON, E.
7706
VERNON, J.K.
5866
VEROTTI, M.
3574
VERRET, J.L.
1828
VERSIECK, J.
5496*
VERSTRAETE, M.
6189, 6953
VERT, P.
6148
VERTOVA, P.A.
3609
VERYOVKINA, I.V.
7169
VESELOV, V.S.
7405
VESELY, J.
3800*
VESELY, K.T.
6937*
VESIN, P.
2902
VESIN, S.
2523
VESTAD, E.
4354
VESTLING, C.S.
6336
VETANCOURT, R.
0637*
VETNER, M.
1098
VETRELLA, M.
0904*, 2770*
VETRO, A.
8964
VETTO, R.M.
2565
VETTORI, G.
2215
VEVEILLE, G.A.
0128
VEYNE, S.
0313, 4232
VEYRE, B.
5296
VEYRET, V.
5818
VEZZADINI, P.
0972, 4613
VIAGGIO, J.A.
0510, 0677
VIAL, J.D.
4751
VIALA, J.J.
9131
VIALATTE, J.
3523
VIALETTES, T.
5288
VIALLET, A.
5291, 6879*
VIAMONTE, M., JR.
1359, 7635
VIANELLO, A.
2938
VIARD, H.
1381
VICARI, F.
2936, 8712
VICK, R.L.
3862*, 4803
VICKERS, T.H.
8481
VICKERY, A.L., JR.
2086
VICTOR, G.
8050
VIDAILHET, M.
4648
VIDELA, L.
6439*
VIDLAKOVA, M.
5991*
VIDNE, B.
8078

VIDO, I.
0604*, 0610*, 8367
VIDO, J.
4898
VIDOVA, O.
4423
VIDYARTHI, S.C.
3778
VIEGAS DE ANDRADE, S.R.
2357*
VIELLE, G.
3274
VIENS, P.
3311
VIEIRA, O.M.
3781
VIERA, A.A.
1148
VIGARIO, G.D.
3326
VIGNAL, J.
0449, 4407
VIGNATI, F.
3873
VIGNERI, R.
5685
VIGNOLA, P.
3442*
VIGNON, G.
0410*, 2803*
VIGUIE, R.
2109, 2902, 8451
VIHKO, R.
4875, 5448
VIIKARI, S.
4203
VIJAYANAGAR, R.
4340
VILARDELL, F.
2619, 4042
VILDT, M.O.
7399
VILELA, M.DEP.
3539
VILELA, M.P.
7565
VILLA, F.
5659*
VILLALOBOS, J.DE J.
1930
VILLA MICHEL, M.
0720
VILLANO, F.
2148
VILLANUEVA, S.
4498
VILLAREJOS, V.M.
7014
VILLARROEL, E.
1897
VILLAR-VALDES, H.
6392*
VILLASENOR, M.S.
2248
VILLASMIL, N.R.
1146
VILLEE, C.A.
6453*
VILLET, R.H.
1604
VILOTTE, J.
8469
VILOTTE, M.J.
8982
VILSHANSKAYA, F.L.
6191
VINAYAK, V.K.
1551
VINCE, A.
6026, 6184
VINCENZI, L.
5033, 7254
VINH, LET.
9038*
VINK, C.L.J.
4000
VINOGRADOV, V.V.
5312, 6143, 7661
VIO, A.
4147, 8801, 8813
VIOLANTE, N.
2875
VIOLLET, G.
9291
VIRABYAN, T.L.
0073
VIRAG, R.
5105
VIRAVAN, C.
8496
VIRDIS, G.
3432
VISAKORPI, J.K.
6689
VISBECQ, J.
0694
VISCHER, T.L.
8364*
VISCONTI, M.
4481, 4485
VISENTINI, E.
2744
VISHAGUROV, K.K.
7350
VISHNEVSKAYA, YU.S.
8336
VISHNEVSKY, A.S.
8336
VISHNEVSKY, V.A.
6143
VISICK, J.H.
5879*
VISINTINI, E.
7348
VISSET, J.
1238, 5148
VITA, G.
8710*
VITALE, V.
8800
VITCHTOMOVA-OSIPENKOVA, T.K.
6192
VITEBSKY, YA.D.
1046, 8126
VITH, W.
4644
VITKIN, B.S.
2553
VITKOVAKAYA, T.A.
7405
VITTORI, J.
4464
VITULOVA, V.
8214
VIX, V.A.
1256
VLAHCEVIC, Z.R.
2773, 7655*, 8381
VLASOV, P.V.
5722
VLASSEMBROUCK, M.J.
1991
VOCKOVIC, K.
3730
VODOLAGIN, V.D.
7337
VODOVAR, N.
4707*
VOEGLE, L.D.
2786*
VOELKEL, H.
5856
VOERMANS, L.A.G.A.
9051
VOET, W.
2059
VOGEL, R.
0868
VOGEL, T.T.
3906*
VOGEL, W.H.
7115*
VOGT, W.
7192*
VOGT-MOYKOPF, I.
5752, 6604
VOIGT, G.
8911
VOIGTLANDER, W.
4779
VOINCHET, O.
5200
VOJACEK, K.
1664
VOLCHEK, V.M.
7335
VOLINI, F.
0735*
VOLKER, P.
6162
VOLKMANN, H.
7898*
VOLKODAEVA, A.A.
6103
VOLKOV, V.E.
1328
VOLKOVA, I.S.
8130
VOLKOVA, ZH.A.
1422
VOLLER, A.
4660*
VOLLERT, J.M.
8747

VOLLMAR, D.
6950
VOLLMAR, J.
8850
VOLODKO, V.P.
6006
VOLPE, J.A.
4032, 6213
VOLPE, P.
6431.
VOLTER, D.
0179.
VOLWILER, W.
3968
VONACHEN, P.
9090
VON ACKEREN, H.
8785
VON BAHR, C.
2456, 2457
VON BASSEWITZ, D.B.
5914
VON BRUCKE, F.T.
5201
VON BULOW, F.A.
1582.
VON EDESPARRE, W.
1074
VON EHRENSTEIN, G.
1777, 8524
VON HEDENBERG, C.
1178
VONK, J.
2210
VON KAULLA, K.N.
0532.
VON KLEIST, S.
1254
VON KLIEST, S.
3801.
VON LICHTENBERG, F.
3776, 7004.
VON LOH, D.
3783, 3887., 6386
VON MILCZEWSKI, K.E.
0090., 0605.
VON OLDERHAUSEN, H.F.
5224, 6081
VON PLEHWE, U.
3607
VON STELZNER, F.
5115
VON WARTBURG, J.P.
3160.
VON WOLFF, C.
6680
VOOG, R.
4351
VOORHEES, A.B., JR.
1443., 5497, 6128,
6897
VORBRODT, A.
3808.
VOROBIEVA, T.V.
5555
VOROBYEV, F.P.
1537
VOROB'YEVA, N.M.
7079
VOROB'YEVA, T.V.
7104
VORONCHIKHIN, S.I.
7676
VORONINA, L.YA.
8339
VORONOV, A.A.
2552
VORONTSOV, I.V.
7205
VORTEL, V.
0576
VOS, A.
9171
VOS, A.K.
2210
VOS, L.J.M.
1984
VOSMIK, J.
1448
VOSS, D.M.
4019.
VOSSCHULTE, K.
6752, 9019
VOTA, L.
3359, 3432
VOTRUBA, M.
2071
VOTTELER, T.
3699.
VOUDOURIS, C.P.
1077
VRANIC, M.
0813
VREELAND, I.
6425.
VRIND, H.M.
5795
VRSILEV, IV.
1U18
VSEVOLODOV, G.F.
2956
VUCKOVIC, D.
3730
VUEZ, J.L.
2388
VUILLARD, P.
4333, 4645
VUILLEMIN, H.
9263
VUILLIEME, A.
4410
VUORIO, M.
2166
VYAS, B.K.
3333, 5797
VYSTYD, J.
2118
WAALER, G.
5307
WACHTER, E.
0085.
WACHTER, J.
6639
WACHTL, I.
8576
WADA, A.
5043
WADE, A.E.
3189, 3192
WADA, H.
8842
WADA, M.
0112
WADDELL, W.G.
4219
WADDELL, W.R.
1318, 3444.
WADE, A.E.
0895
WADHWA, S.N.
5868
WADSWORTH, G.R.
3742
WAGENSTEEN, O.H.
7203
WAGGER, G.M.
8449
WAGGONER, J.G.
7063.
WAGLE, D.S.
5990.
WAGLE, S.R.
0382, 0402.
WAGNER, B.J.
1778
WAGNER, B.P.
7560
WAGNER, E.
1329, 6752, 9019
WAGNER, H.
9097
WAGNER, H.N.
1803.
WAGNER, H.N., JR.
0925.
WAGNER, K.
0186., 1438., 2819,
9162
WAGNER, M.
5913
WAGNER, M.L.
7485
WAGNER, O.
5674
WAGNER, V.
3040.
WAHAB, M.F.A.
2974, 8487.
WAHLBERG, P.
7717
WAHRENBERG, I.
7898.
WAI, NG.C.
2546.
WAISMAN, H.
0684
WAISMAN, H.A.
6968
WAKABAYASI, T.
2380
WAKIL, S.J.
5423., 5441.
WAKSMAN, B.H.
3026.
WALACHER, L.
8537

WALAN, A.
0790., 1668., 3394,
3403
WALBORG, E.F., JR.
8684
WALCHA, R.
0588
WALCZAK, J.
0595
WALDA, Z.
0683
WALDESKOG, B.
3301
WALDHAUSL, W.
4892.
WALDMAN, R.H.
4584
WALDRON-EDWARD, D.
8586
WALDSCHMIDT, J.
1396, 8847
WALES, E.E.
0095.
WALIGORA, A.
2386
WALKER, A.J.
1341
WALKER, A.R.P.
9270
WALKER, B.A.
1095
WALKER, B.F.
9270
WALKER, C.O.
6029
WALKER, J.G.
2091, 3542.
WALKER, L.G., JR.
1200, 7665
WALKER, R.J.
0496., 5958, 8039
WALKER, W.D.
1611, 5603
WALKER-SMITH, J.A.
3016, 5679, 7253
WALL, A.J.
3437.
WALL, B.J.
3117
WALL, T.R.
9219
WALLACE, C.K.
3754, 4584
WALLACE, M.E.
2660.
WALLACE, R.B.
5393
WALLACE, R.G.
2211
WALLACH, R.
8271.
WALLER, C.E.
7761
WALLER, S.L.
0427.
WALLINDER, L.
6502.
WALLIS, P.G.
6691
WALLNOFER, H.
3382, 4495, 5274.
WALLOSCHEK, C.
6396.
WALLS, W.D.
2054
WALLSH, E.
7362
WALROND, E.R.
4284
WALSH, J.H.
0608., 2104., 5700
WALSH, R.T.
6455
WALSHE, J.M.
0546, 3314., 6811
WALSMANN, P.
6415
WALT, A.J.
2049, 2571
WALTERS, J.
5398
WALTERS, M.N.I.
0744., 0755., 1453.,
4770
WALTHER, B.T.
7780.
WALTHFR, J.
2381
WALTMAN, R.
0552, 1355.
WALTZ, A.
5534.
WALZ, A.
6651
WAMGERMEZ, J.
8715
WAN, B.Y.C.
5537
WANDS, J.R.
4447.
WANG, F.L.
6438.
WANG, K.M.
0884
WANG, L.T.
2241
WANG, R.I.H.
1432
WANG, T.H.
2241
WANGENSTEEN, S.I.
5630.
WANGENSTEEN, S.L.
5037
WANGERMEZ, A.
8715
WANKE, M.
5961., 6604, 8598.,
9017, 9034, 9035
WAPNICK, S.
1789, 1925., 3449.
WARBURTON, B.
8498
WARD, A.S.
3391.
WARD, C.O.
5501
WARD, J.D.
2644
WARD, P.
6657.
WARDEN, H.E.
2569, 6210, 6588
WARDOCKI, J.
0682
WARIDFL, D.
6744
WARNATZ, H.
2887, 6222, 9097
WARNER, O.G.
6795
WARNER-SCHIECK, B.
8000
WARREN, K.S.
1533, 3775, 6269
WARREN, K.W.
4381
WARREN, R.E.
1405
WARREN, W.D.
1005, 1359, 7635
WARSA, R.
3753
WARTER, J.
9084
WARWICK, G.P.
8637.
WASANTAPRUEK, S.
0532.
WASHINGTON, P.D.
7719
WASHINGTON, R.J.
4806.
WASOWSKI, J.
0685
WASS, M.
7056.
WASSEF, S.A.
2250.
WASSER, N.R.
8475
WASSERMAN, R.H.
4775
WASSERMANN, F.
3826
WASTEL, C.
1069
WATABE, N.
6625
WATANBE, E.
7077
WATANABE, I.
3588
WATANABE, K.
1814, 4127.
WATANABE, M.
1353., 3935., 5787
WATANARE, N.
5786
WATANBE, S.
2269., 3167., 4052
WATANABE, T.
6355.
WATANABE, Y.
1886, 2616

LIBRARY U OF I URBANA-CHAMPAIGN

WATCHI, J.M.
9168
WATELET, F.
0246, 0401, 0458
WATERFALL, W.
1682
WATERHOUSE, J.
0540
WATERHOUSE, J.A.
5877*
WATERMAN, M.R.
4822*
WATERMAN, M.U.
5458
WATERS, W.F.
2372*
WATKINS, E., JR.
3571, 6852, 7728
WATKINSON, G.
5949
WATSON, A.
4873
WATSON, A.A.
3623
WATSON, C.E.
6272
WATSON, C.J.
8699
WATSON, D.W.
8162
WATSON, F.R.
8196
WATSON, J.J.
4737
WATSON, J.P.
0306
WATSON, R.J.
1865
WATSON, W.B.
8415
WATT, A.J.
5517*
WATT, S.
1896
WATTEZ, E.
1816
WATTIAUX, R.
1603, 7033*, 7810
WATTIAUX-DE CONINCK, S.
1603, 7033*, 7810
WATTS, C.
0783*
WATTS, J.MCK.
8315
WAUMANS, P.
3627
WAX, J.
6671*
WAXMAN, S.
6375
WAY, L.W.
3864*, 6397*, 8580*,
8597*, 8599*
WAYLONIS, G.W.
6532, 6533
WAYMIRE, W.M.
1844
WAYOFF, M.
4101
WEAKLEY, F.L.
8999
WEAKLEY, S.D.
7303
WEAVER, A.W.
2571
WEAVER, D.H.
0986
WEBB, J.N.
8226*
WEBB, T.E.
1755, 2435
WEBB, W.R.
1826*
WEBER, A.
0405*
WEBER, A.L.
7488
WEBER, H.
2080
WEBER, J.M.
2771
WEBER, K.M.
7198
WEBER, M.
6840
WEBER, M.C.
0225, 0719, 0721
WEBSTER, G.R.
4757*
WEBSTER, P.D.
7882
WECKE, B.
1962*
WECKSLER, M.
3958
WEDGWOOD, R.J.
8267*
WEE, G.C.
2716
WEEDER, R.S.
6134
WEEKE, B.
5878*
WEGELIN, I.
3180
WEGENER, F.
6068
WEGENER, K.
8598*
WEGIEL, A.
3882
WEGMANN, R.
6069, 6082
WEGNER, G.
0952*
WEICKER, H.
3138
WEIDEMANN, M.J.
3931*
WEIDEMANN, R.
4512
WEIDENMULLER, R.
6340
WEIDENHILLER, S.
8581*
WEIDNER, M.G., JR.
0938*
WEIGAND, K.
1699*
WEIGAND, U.
1762
WEIGEL, W.
8740
WEIL, G.
1743
WEILAND, D.E.
1336
WEILL, F.
8735
WEILL, J.
5574*, 8259
WEIMANN, D.
8895
WEIMER, M.
8699
WEINBERG, A.G.
4363*
WEINBERG, T.
5316
WEINBERGER, I.
6923
WEINBERGOVA, O.
2440
WEINBREN, K.
1718*
WEINER, H.
0132
WEINER, M.
1806*, 8420*
WEINER, S.
2786*, 8938
WEINER, S.V.
7193*
WEINFELD, C.
8450
WEINFELD, H.
5464
WEINFELD, JUIN
8450
WEINHOLD, P.A.
0885, 1752
WEINHOUSE, S.
1378, 3810*
WEINREICH, J.
4499, 9156
WEINSCHELBAUM, E.
0089
WEINSCHELBAUM, E.E.
1685*
WEINSSEN, U.
1699*, 7890*
WEINSTEIN, I.B.
1776
WEINSTEIN, L.D.
5380
WEINSTEIN, V.
0018
WEINSTEIN, W.M.
4254
WEINTAUB, L.R.
3112
WEINTRAUB, L.R.
5467
WEIR, D.G.
2580*, 3390*, 3547*,
7447

WEIR, M.R.
5243
WEIS, H.J.
0099*, 2696
WEISBERG, H.
7320*
WEISBURGER, E.K.
3230
WEISBURGER, J.S.
3230
WEISER, M.M.
5618*
WEISMANN, U.
2769*
WEISS, H.
6988, 7593
WEISS, I.
0812*
WEISS, J.B.
8037
WEISSMANN, G.
7109*
WEIST, F.
6814
WEITERING, J.G.
5485*
WEITZNER, S.
0991, 8302
WELBOURN, R.B.
5655*
WELBOURNE, W.P.
0139
WELCH, J.S.
5377
WELCH, R.M.
5564*, 6449*
WELIN, S.
0188*
WELIN-FOGELBERG, I.
0053
WELLER, J.L.
5562*
WELLERS, G.
6360
WELLING, R.E.
4899
WELLINGTON, J.L.
4219
WELLMER, H.K.
6162
WELLS, P.N.T.
0197*, 1811*, 2512*
WELLS, P.S.
7209
WELSCH, K.H.
3917
WELSCH, U.
3449*
WELTE, W.
8825
WEMEAU, J.
5111
WEMEAU, L.
5111
WENCKERT, A.
2170, 5068, 8183
WENDENBURG, H.H.
8845
WENDLING, M.G.
2482*
WENDTH, A.J.
3427
WENGER, J.
3291, 5003, 7677*,
8006*
WENISCH, C.
2902
WENNAR, M.H.
0191*
WENZ, W.
4941, 4949, 8030*
WENZEL, K.P.
8823
WEPLER, W.
8391, 9101
WERLE, E.
0007*, 7880*
WERNER, G.
4303
WERNER, H.
6580*
WERNER, J.L.
7489
WESCH, H.
6979, 7544
WESER, E.
4262
WESER, U.
0155, 2425, 3959,
4830*, 8640
WESOLOWSKI, S.
2717
WEST, C.D.
7162
WEST, C.E.
7139*
WESTBROEK, D.L.
1583*
WESTERGAARD, H.
2784*, 5878*, 6471,
6880
WESTERLUND, M.
3212
WESTERMANN, K.
5628*
WESTERN, J.R.H.
7777*
WESTERN, K.A.
7010
WESTPHAL, A.
8490
WETTENDORFF, P.
3229, 8600
WETTERFORS, J.
6629
WETZIG, H.
8536
WEWALKA, F.
2082, 2882, 4892*,
4945
WEXLER, T.
3852
WHALEY, K.
5206
WHARTON, B.
2197, 4603
WHEATLEY, V.
4814
WHEBY, M.S.
3866*, 5490*
WHEELER, J.W., JR.
6612*
WHEELER, K.P.
3118
WHEELER, M.
8400
WHELAN, G.
0821*, 4754*
WHELAN, T.J., JR.
2669
WHELDON, E.J.
2581*
WHELTON, M.J.
3553
WHIPP, S.C.
2945*
WHITAKER, J.C.C.
1147
WHITCOMB, F.F.
4324, 5179, 7758
WHITE, A.M.
2438
WHITE, A.S.
3073
WHITE, H.B., III.
0131
WHITE, J.E.
3296
WHITE, J.J.
3357
WHITE, L.W.
6426*
WHITE, T.T.
1330, 2032, 3157,
6521*, 6796, 8252,
8438
WHITECROSS, D.
8879*
WHITEHILL, J.L.
3325
WHITELEY, H.W., JR.
3504, 5112, 8199
WHITESELL, F.B., JR.
5054
WHITING, D.A.
3647
WHITTAM, R.
3118
WHITT, F.D.
7947
WHITTAKER, D.K.
0305
WIAND, S.
0824*
WIBERG, G.S.
6061*
WICHERN, W.A., JR.
4959
WICK, A.N.
6465
0056, 8587, 8588
WICK, T.
6396*
WIDMAIER, F.
2162*, 8211*

WIDMANN, W.D.
6244
WIDMER, A.
6716, 6985
WIDNER, A.
5381
WIEBECKE, B.
0910*, 5367, 7853*
WIEDEMANN, B.
5941, 6511
WIEDEMANN, I.
7968
WIELAND, O.
8509*
WIEL MARIN, A.
0157
WIENDL, H.J.
0309
WIERNIK, G.
3736
WIETZNER, S.
5001
WIGLEY, R.D.
1625*
WIGMANS, A.R.H.
3892*
WIJESEKERA, W.K.M.P.L.
6759
WIJESUNDERA, C.DE S.
6759
WIKE, C.C.
6216
WIKINSKI, R.
7164
WIKMAN, J.
6817
WILBURN, R.L.
5997
WILD, R.A.
7873
WILD, W.
8601
WILDBERGER, H.
9045
WILDER, G.P.
5226
WILDER, J.R.
5308
WILDGRUBE, J.
4509, 8307
WILDHIRT, E.
0604*, 0610*, 4063,
7271, 7524*, 7538*,
8367, 9147
WILDNER, G.P.
6687
WILEY, J.H.
7111*
WILEY, J.N.
3370
WILFRED, G.
4569*, 4694*
WILHELMI, U.
0207, 1824
WILIM, M.
4198
WILIMOWSKA-PELC, A.
3854
WILK, H.
0367
WILKEN, B.J.
0933*, 1676
WILKEN, D.
2442
WILKEN, D.R.
7896*
WILKEY, I.S.
7739
WILKIE, B.N.
1758
WILKINS, J.L.
4804
WILKINS, R.A.
3391*
WILKINS, R.M.
8896*
WILKINSON, C.J.
7590
WILKINSON, J.H.
3260*
WILKINSON, R.H.
0441, 1276
WILL, G.
0759*, 6357*
WILL, R.M.
5661*
WILLARD, R.L.
1262
WILLE, G.
7192*
WILLE, L.
6856*
WILLEN, R.
0612, 7773*, 8621*
WILLERSON, J.T.
5983*
WILLERT, H.
4430
WILLETTS, P.F., JR.
8110
WILLIAM, M.
8461
WILLIAMS, C.H.
3617
WILLIAMS, C.S.
1546
WILLIAMS, D.G.
1024*
WILLIAMS, D.I.
2709
WILLIAMS, D.L.
3931*
WILLIAMS, E.M.V.
0918, 0929
WILLIAMS, G.D.
8084
WILLIAMS, G.M.
7508
WILLIAMS, G.R.
7105*, 7106*
WILLIAMS, H.S.
0533*
WILLIAMS, J.
9259*
WILLIAMS, J.A.
0483, 1921, 8141
WILLIAMS, J.F.
6268
WILLIAMS, J.R., JR.
3230
WILLIAMS, L.F.
7292
WILLIAMS, L.F., JR.
7741
WILLIAMS, L.P., JR.
5357
WILLIAMS, M.A.
0887
WILLIAMS, R.
0651, 0769*, 0967,
2126, 3197, 3594*,
3649*, 4018*, 5882,
6766*, 7570, 8301
WILLIAMS, R.C.
5390
WILLIAMS, R.J.
6392*
WILLIAMS, R.M.
0005*, 1593
WILLIAMS, R.T.
3165*
WILLIAMS, S.W.
0934*
WILLIAMS, T.F.
1521
WILLIAMS, W.L.
0126
WILLIAMSON, D.G.
2447
WILLIAMSON, D.H.
3942*
WILLIAMSON, H.E.
2400*
WILLIAMSON, J.
5206
WILLIAMSON, J.N.
0757
WILLIAMSON, J.R.
5557*
WILLIAMSON, R.
6312
WILLICH, E.
6960
WILLIGAN, D.A.
3048
WILLITAL, G.H.
5874, 8761
WILLMAN, V.L.
0945*
WILLMS, B.
6794, 7964, 8608*
WILLOUGHBY, E.
2580*
WILLOUGHBY, J.M.T.
0398*, 4246
WILLS, C.E., JR.
3428
WILMORE, D.M.
7326*
WILMOT, A.J.
1227
WILNER, H.I.
3720
WILSON, E.
4283, 4296

WILSON, E.R.
0126
WILSON, J.D.
5602, 5636
WILSON, J.T.
2402*
WILSON, P.R.
6868
WILSON, P.W.
0916, 0920
WILSON, R.
3341*
WILSON, R.J.
1013
WILSON, S.E.
8083
WILSON, S.H.
1602
WILSON, T.R.
0305
WILSON, W.L.
2771
WIMBERLEY, J.E.
2766
WIMHURST, J.M.
4745
WIN, M.S.
5936
WINANS, C.S.
6534
WINAWER, S.J.
0189*, 5392
WINBORN, W.B.
8328*
WINCH, J.
2794
WINCHELL, H.S.
0763*, 5982*, 6114*
WINDER, C.V.
6671*
WINDMUELLER, H.G.
3991*
WINDSOR, C.W.O.
1026*, 3391*
WINEGRAD, A.I.
7527*
WINGATE, L.
0919
WINGATE, M.B.
0919
WINKEL, P.
6899
WINKLER, K.
3601, 6362, 6929*
WINNE, D.
3109
WINNEFELD, K.
0662
WINNEFIELD, W.
4064
WINNICK, S.
7135*
WINSHIP, D.H.
2357*, 6395*
WINSLOW, P.R.
6611*
WINTER, M.
6350*
WINWARD, R.T.
0095*
WIONTZEK, H.
8358, 9143
WIOT, J.F.
8897*
WIRADISURIA, S.
7710
WIRBATZ, W.
9162
WIRTH, W.
1038, 8739
WIRTS, C.W.
2942*, 8003*, 8989
WIRTZ, K.W.A.
0826*
WISE, L.
2371*, 5831
WISE, R.E.
2498*
WISE, W.S.
8084
WISHAHY, A.
1193
WISHAR, P.J.
2594
WISHEART, J.D.
1411
WISNIEWSKI-KNYPL, J.M.
8648
WISSE, E.
7791*
WITSCHI, H.
8626*
WITT, H.
8743, 8763
WITTE, C.L.
6904
WITTE, M.H.
6904
WITTE, S.
6546
WITHERS, H.R.
7044
WITKOWSKI, L.J.
2613
WIT-PEETERS, E.M.
2321
WITTE, C.L.
2143
WITTE, M.H.
2143
WITTENBERG, J.
8010*
WITTHAUT, H.
9199
WITTICH, D.A.
0814
WITTMANN, C.
8651
WITTMANN, W.
1214*
WITZ, J.P.
5341
WITZEL, L.
4348
WITZLEBEN, C.L.
0820*
WLODEK, G.K.
0079
WOCKEL, W.
4303
WODAK, E.
4960
WOEHRLF, R.
6200
WOESTIJNE, K.P.
8012*
WOGAN, G.N.
3789*
WOHLENBERG, H.
8459
WOHLHEUTER, R.M.
4818*
WOHLRAB, F.
8382
WOJCICKA, J.
4426
WOJTOWICZ, M.
2595
WOLF, B.
4750
WOLF, B.S.
8836
WOLF, E.
5653*
WOLF, G.
7178
WOLF, M.
6687
WOLF, R.H.
6939*
WOLFE, J.W.
2643
WOLFE, L.G.
3640
WOLFE, L.S.
9043*
WOLFE, R.D.
3423
WOLFE, W.G.
2028
WOLFEL, D.A.
2980
WOLFF, E.
3801*
WOLFF, G.
4978
WOLFF, G.L.
7908*
WOLFF, H.
0062*
WOLFF, H.L.
3748
WOLFF, R.
3150
WOLFF, S.M.
5983*
WOLFRUM, D.I.
8318*
WOLFSON, J.J.
3498
WOLOCHOW, H.
3997
WOLOWICKA, L.
2963

WOLPERT, E.
5634
WOLTER, J.
4969
WOMACK, N.A.
1006
WON, K.H.
1933
WONG, E.H.A.
7951
WONG, J.
6607*
WONG, K.H.
6028
WONG, P.
5614*
WOOD, B.
0540
WOOD, E.E.
5245
WOOD, R.L.
3074, 3576, 4747
WOODBURY, D.M.
2348
WOODBURY, J.J.
3444*
WOODBURY, W.J.
4447*
WOODCOCK, N.A.
6938*
WOODCOK, N.W.
5493*
WOODD-WALKER, R.B.
0772
WOODRUFF, A.W.
8497
WOODRUFF, G.N.
0915
WOODS, H.F.
1705*
WOODS, J.E.
7305
WOODS, J.M.
8261
WOODS, J.S.
7897*
WOODSON, R.D.
0614
WOODWARD, D.A.K.
1026*
WOODWARD, E.R.
0777*, 0778*, 1637,
1644*, 3352, 5540,
5792, 8136
WOODWARD, T.E.
3766
WOODWARD, W.E.
4570*, 4586
WOOLER, G.
1009
WOOLES, W.R.
6472
WOOLUM, J.C.
1759
WORMSLEY, K.G.
0963, 1070, 3289,
6398*, 7881*, 8040
WORNER, R.
4472
WORNING, H.
1020*, 5086
WORONIECKI, N.
4425
WORSMANN, T.U.
8544
WORTH, H.M.
3580
WORWOOD, M.
2277*
WOSTMANN, B.S.
0031*, 5492*
WREN, R.E.
6270
WRIGHT, A.D.
0535*
WRIGHT, D.J.
6276
WRIGHT, F.S.
1701*
WRIGHT, F.W.
5331*
WRIGHT, H.K.
1968*, 2657*, 5380
WRIGHT, J.E.
1266
WRIGHT, P.W.
1322*, 1324*, 4346*
WRIGHY, R.
0536*, 3224, 6090,
6867
WRIGHT, S.W.
1871, 4989
WRONG, O.M.
0942*
WRUBLE, L.D.
5522, 5541, 7100
WRZYSZCZ, M.
1471
WUHRMANN, F.
6893
WULFF, H.D.
8942
WULFF, H.R.
3287, 7268
WULFF, M.R.
3287
WUNDER, J.F.
3423
WUNDISCH, H.
6593
WURTZ, A.
9227
WUSTLING, H.U.
8596
WYATT, A.P.
1960, 7454*
WYCHULIS, A.R.
1008, 5756
WYLLIE, J.H.
0064*
WYNNE, E.S.
6230
WYRWALSKI, T.
0300
WYSHAK, G.
5931
WYSOCKI, A.
0270*, 0350
WURTMAN, R.J.
1736, 2403*
WURTZ, A.
1832
XAVIER, M.L.S.
0231
XAVIER, S.
0722
XIPELL, J.M.
4145
YABU, H.
3231
YABUTA, A.
3030*
YACHMENEV, A.V.
5722
YADAV, S.B.
7020
YAFFE, S.J.
1730, 2037*, 3099*,
7068*, 7110*
YAGI, K.
6777*, 6848, 7580*
YAGI, M.
0293
YAJIMA, H.
6569
YAKEISHI, Y.
0029*
YAKHONTOVA, O.I.
2966, 7519,
7522
YAKUSHIN, V.I.
7289
YALE, C.E.
3733
YALOW, R.
5700
YALOW, R.S.
1808*, 5543
YAMADA, G.
6652
YAMADA, H.
1937
YAMADA, K.
0006*, 2432, 2433,
2434, 4752, 7957
YAMADA, R.
6982
YAMADA, S.
7534*
YAMAGATA, K.
5834
YAMAGISHI, M.
5732*
YAMAGIWA, H.
1861, 1880
YAMAGUCHI, K.
2367*
YAMAGUCHI, N.
2336*
YAMAGUCHI, S.
1886
YAMAKAWA, T.
8932
YAMAMOTO, E.
2616
YAMAMOTO, H.
3185

YAMAMOTO, I.
6982
YAMAMOTO, M.
4788., 6170
YAMAMOTO, T.
0479, 4991
YAMAMOTO, Y.
4049, 8711., 8887
YAMAMURA, H.
7022.
YAMAMURA, Y.
1763
YAMANA, M.
1640
YAMANAKA, N.
6325
YAMANE, Y.
2422, 5994.
YAMANO, K.
0308, 6975, 7461
YAMANO, T.
0125, 6300.
YAMANOUCHI, M.
6666
YAMAOKA, K.
7174
YAMAOKA, Y.
4930
YAMASAKI, H.
6294.
YAMASHINA, K.
5009, 5320, 5378
YAMASHITA, F.
2326.
YAMASHITA, K.
3245.
YAMAZAKI, Y.
9217
YANAGI, S.
6831.
YANEZ, J.A.
0104
YANGIAMOTO, Y.
1597, 1598, 1599,
1600
YANI, K.
6325
YANKEE, R.A.
7622
YANO, Y.
5987.
YAP, E.H.
7279
YARBROUGH, D.R., III.
0938.
YARDLEY, J.H.
3416., 6158.
YAREMA, I.V.
6011
YAREMCHUK, A.Y.
7733
YAREMENKO, M.S.
7163
YAROPOLOV, V.I.
8150
YASREBI, H.
3352
YASTREB, N.I.
8092
YASUDA, K.
8507., 8522
YASUHARA, M.
4325
YASUNOBU, K.T.
6485
YASUTOMI, T.
6637
YATA, N.
2327.
YATSENKO, L.A.
8352
YATVIN, M.B.
4823., 6458
YAVORDIOS, D.
8675
YAWATA, Y.
3233
YAZDANBAKHSCH, I.
4398
YEH, Y.Y.
7111.
YEN, T.S.
6964
YERASIMIDES, T.G.
1263
YEUNG, C.Y.
0539.
YEUNG LAIWAH, A.C.
7623
YIT, Y.K.
2272.
YOFFA, D.
8315
YOKOTA, H.
3245.
YOKOTA, Y.
6666
YOKOYAMA, M.
4991
YONEMOTO, T.
5732.
YONG, F.C.
4822.
YONG, V.
7448
YOO, D.G.
0223
YOSHIDA, T.
0878, 1886, 2063,
2078, 7083, 8262.
YOSHIDA, K.
5758
YOSHII, Y.
4930
YOSHIKANE, M.
0479
YOSHIKAWA, H.
2247
YOSHIKAWA, I.
5271
YOSHINAGA, H.
2181
YOSHIOKA, M.
4006
YOSHIOKA, Y.
6368
YOSHITOMI, G.
4746, 4874
YOUDIM, M.B.H.
0834.
YOUMANS, C.R., JR.
5791
YOUNG, J.D.
0080, 0084., 3155.
YOUNG, J.R.
3259
YOUNG, M.L.
3216
YOUNG, R.B.
2020
YOUNGER, R.K.
5859
YOUNOSZAI, M.K.
7055.
YOW, M.D.
6981
YRBAS, O.
0674
YSUCHIYA, Y.
9217
YU, F.L.
6424.
YU, J.Y.
2241
YU, S.F.
5891
YUGAYI, K.D.
3255
YUKIMORI, S.
4798
YULDASHEV, U.I.
7409
YUN, S.L.
1780
YUNGHANS, W.N.
2297
YUNIS, E.
5925
YUNOKI, H.
5271
YU-TU, L.
2325.
YVERGNEAUX, J.P.
7217.
YVES, A.
3319
ZABOLOTNY, L.S.
2957
ZABRODIN, O.N.
0329
ZACCHELLO, F.
3973
ZACCHI, C.
2753
ZACCO, R.
4350
ZACHARIAE, F.
6889, 8085
ZACHARIAS, N.
2594, 4193
ZACHARY, R.B.
7470
ZACHMAN, J.O.
6917
ZACHO, A.
1020.

ZAFARI, I.
0177
ZAFFIRI, O.
4311
ZAHLER, W.L.
3943*
ZAHN, D.
0819*
ZAHN, F.D.
2240
ZAHND, G.
1314
ZAHRINGER, J.
1699*, 7890*
ZAIN, B.K.
8558*
ZAINO, E.
3686
ZAIN-UL-ABEDIN, M.
8558*
ZAITSEV, G.P.
7391
ZAITSEV, V.T.
7390
ZAJGNER, J.
0220
ZAKARIA, M.A.K.
2926
ZAKI, A.H.
6966
ZAKI, G.F.
1354*
ZAKIM, D.
2282*, 4848
ZAKLYNSKY, O.
0894
ZAKO, Z.
5750
ZAKRYS, M.
4545
ZALARU, M.C.
2085
ZALEWSKI, M.
4544
ZALTSMAN, I.N.
1239
ZAMAN, V.
7279
ZAMBIANCHI, C.
4557
ZAMBIANCHI, G.
0195*
ZAMBOTTI, V.
3857
ZAMCHECK, N.
0189*, 0990, 4250*
ZAMCHII, A.A.
7260, 7641, 7650
ZAMITH, V.
1953
ZAMORA UBIETA, F.
4671
ZAMPETTI, P.L.
3918
ZANBILOWICZ, J.
3152*
ZANCOLI, J.
0704
ZANDOMENEGHI, R.
4207, 4522
ZANELLA, L.
3452
ZANEN, H.C.
0116
ZANETTI, A.
8843
ZANETTI, M.E.
5579*
ZANETTI, P.
2392*
ZANGHERI, E.O.
3045
ZANGHI, M.A.
1779
ZANI, G.
1401
ZANINOVICH, A.
3658
ZANNETTI, G.
2519, 3124*, 3896
ZANOLI, P.G.
8892
ZAPOLSKI, E.J.
3995*, 5505
ZAPRUDNOV, A.M.
6001
ZARATE, J.R.
6729
ZASLAVSKY, M.L.
7626
ZASOWSKA, K.
1363
ZATELLI, R.
1204
ZATERKA, S.
0688, 6542
ZAUN, H.
0531*
ZAUNBAUER, W.
5674, 8075, 8709*
ZAVALA REYES, J.
3990
ZAVERI, M.P.
5678
ZAVON, M.R.
3202
ZAWISTOWSKI, S.
0239
ZBARSKY, S.H.
4723, 4748, 8692
ZBORALSKE, F.F.
1854, 2500*, 4968,
8055*, 8079
ZDROJEWSKI, J.
2596
ZECHINI, F.
4538
ZEDERFELT, R.
1941
ZEEGEN, R.
6026
ZEGARSKA, Z.
0239
ZEHNDER, P.R.
6660
ZEIDLER, D.
5752
ZEILLER, P.
9253
ZEITLHOFER, J.
4966
ZEITMAN, B.R.
0876
ZEITOUN, M.M.
4567*
ZEITOUN, P.
2618, 5455
ZELAZCO, J.F.
0510
ZELDER, O.
6223
ZELLWEGER, H.
9059
ZELYAZKOV, A.
1050
ZENEROLI, M.L.
4523
ZENKOV, V.P.
7053
ZEN-YOJI, H.
7699
ZEPPA, R.
1005
ZER, M.
2752
ZERBINI, E.J.
3923
ZERBINO, D.D.
7750
ZERNER, C.
0160*, 3852
ZETTERGREN, L.
6203
ZETZEL, L.
2757, 2763*
ZEZULIN, W.
7484
ZGONNIK, T.D.
5727
ZHAVORONKOVA, L.Y.
7232
ZHDANOVA, L.D.
7695
ZHEREBTSOV, L.A.
7260, 7641,
7650
ZHEREBTSOVA, R.V.
8890
ZHIDOVINOV, G.E.
6154
ZHIGILEVA, V.I.
8351
ZHIKLAEV, V.I.
3318
ZHIVKOV, V.I.
8340
ZHUK, E.A.
7514
ZHUKOVA, E.I.
1160
ZHUPAN, V.F.
0237
ZHURAVLEV, V.A.
6036
ZHURBIN, G.I.
3177, 7981

ZIAREK, S.
0513, 2790, 4357
ZIEGENBEIN, R.
4431
ZIEGLER, A.
8390
ZIEGLER, D.M.
7891*
ZIEGLER, K.
6799
ZIEGLER, M.F.
3777
ZIELSKE, F.
4779
ZIERZ, P.
4654
ZIEVE, L.
5280*, 5281*
ZILE, M.
7990
ZILIOTTO, D.
1810*
ZILLETTI, L.
7856
ZILVERSMIT, D.B.
0826*
ZIMMER, G.
6301*, 7129*
ZIMMER, K.
8324*
ZIMMERER, J.
6979, 7544
ZIMMERLI, W.
5407
ZIMMERMAN, B.
6588
ZIMMERMAN, G.
0444
ZIMMERMAN, H.
5164*
ZIMMERMAN, H.B.
0184*, 2819, 9162
ZIMMERMAN, H.J.
6858*, 6985, 7593
ZIMMERMAN, J.M.
0998
ZIMMERMAN, M.R.
0952*, 1150*
ZIMMERMAN, Y.S.
7256
ZIMMERMANN, H.D.
5881, 8781
ZIMMERMANN, K.
9234
ZIMMERMANN, S.
8839
ZINNER, G.
0143
ZINOVYEV, I.I.
8150
ZINTERHOFER, L.
7250
ZISIADIS, A.
4167
ZITTEL, R.X.
1461
ZIZKA, J.
0576
ZLATARSKI, G.
1247
ZMYZGOVA, A.V.
6096
ZOBEL, H.
8460
ZOCKLER, E.
4012
ZOLKIVER, K.I.
8791*
ZOLLINGER, R.M.
2772, 3520, 7702
ZOLOTNITSKAYA, R.P.
2897, 7640
ZOPPI, G.
4302
ZORLEIN, V.
1761
ZOTTI, E.F.
5825*
ZUBAREV, P.N.
7300
ZUBAS-ADAMS, D.
4859
ZUBEK, L.
1325
ZUBERI, S.
3512
ZUBOV, N.A.
6250
ZUBOVSKY, G.A.
7594
ZUCCHETTI, F.
0157, 0165, 0168, 0174
ZUCKERMAN, A.J.
0607*, 2527*, 3642, 8349*
ZUCKERMAN, N.J.
1766
ZUFAROV, K.A.
5471, 7371, 7496, 7808, 8155
ZUIDEMA, G.D.
0925*, 1440*, 3724, 6136, 6585, 7675, 8011*, 8898
ZUMOFF, B.
6130
ZUMTOBEL, V.
4957, 6574
ZUNIGA, S.R.
2777, 3474
ZUNTER, F.
5915
ZUPPINGER, K.
5959
ZURAWSKA-CZUPA, B.
3904*
ZVOLINSKAS, V.K.
2826
ZWACKA, G.
6624
ZWEIBAUM, A.
3085, 5126
ZWEYMULLER, E.
6583
ZWIERZ, K.
3388*, 4187*
ZWIREN, G.T.
1970*
ZWIRNER, K.
2124*, 4937
ZWIRNER, R.
2781
ZYGMUNTOWICZ, Z.
0239

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE, $300

CORRESPONDENCE CONCERNING THIS PUBLICATION

PAID SUBSCRIPTIONS: If your address has changed and you wish to continue receiving this publication, please check here ...., enclose address label from this publication and your new address, and send to:

SUPERINTENDENT OF DOCUMENTS
U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON, D.C. 20402

FREE SUBSCRIPTIONS:
Contractors, Grantees,
and Medical Libraries

If your address has changed and you wish to continue receiving this publication, please check here ...., enclose address label from this publication and your new address, and send to:

SCIENTIFIC COMMUNICATIONS OFFICE
NATIONAL INSTITUTE OF ARTHRITIS
AND METABOLIC DISEASES
NATIONAL INSTITUTES OF HEALTH
BETHESDA, MARYLAND 20014

Individual copies should be purchased from the Superintendent of Documents.

LIBRARY U. OF I. URBANA-CHAMPAIGN

LIBRARY U. OF I. URBANA-CHAMPAIGN

BOUND BY
HNM

UNIVERSITY OF ILLINOIS-URBANA
3 0112 084235149